



University of Colorado
Anschutz Medical Campus

ACADEMIC CATALOG

Fall 2025/2026

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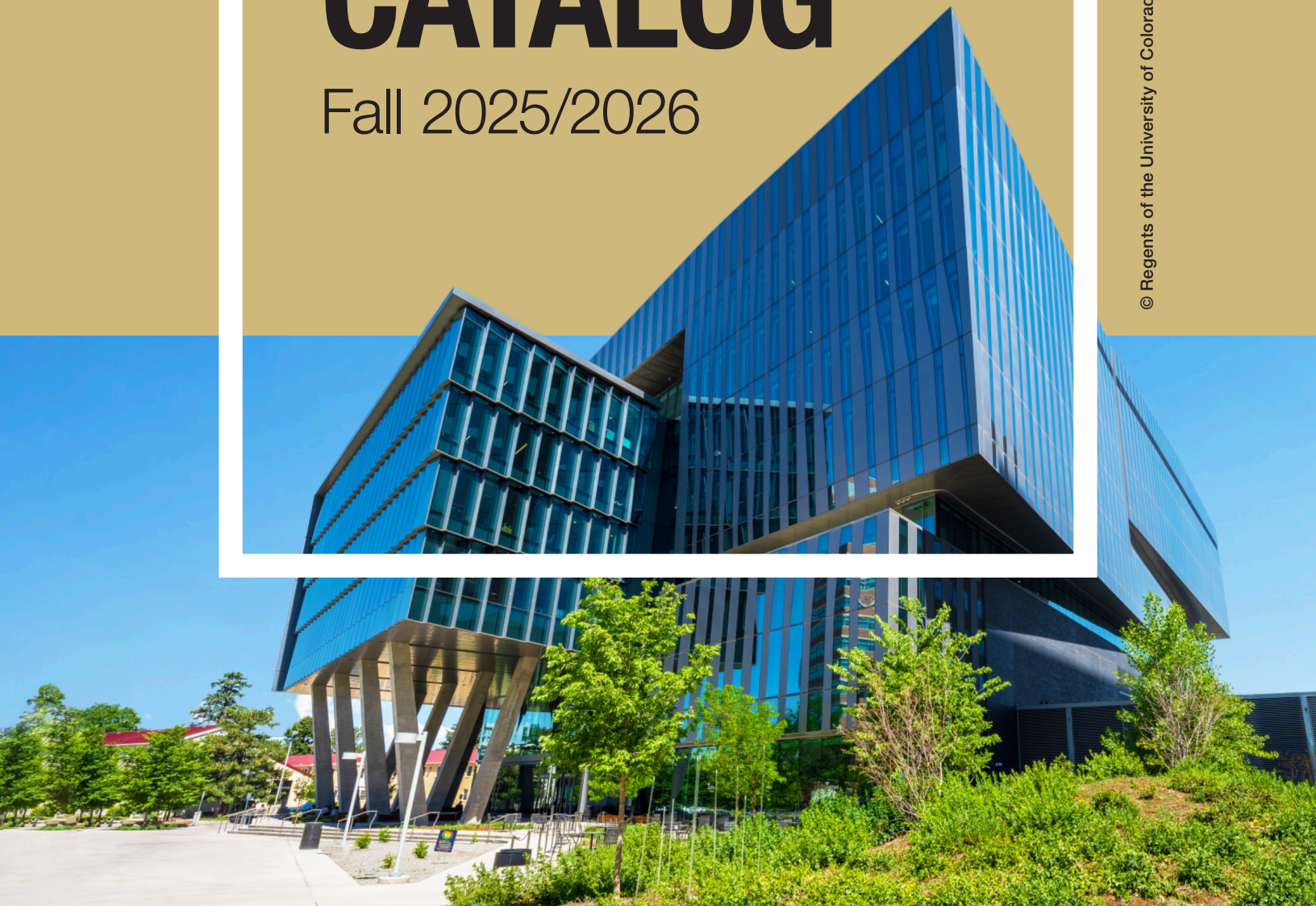


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CU ANSCHUTZ CATALOG

CU Anschutz: Transforming healthcare for more than 140 years.

The University of Colorado Anschutz Medical Campus is the largest academic health center in the Rocky Mountain region, and a world-class medical destination at the forefront of transformative education, science, medicine, and healthcare.

The campus includes the University of Colorado health professional schools, multiple centers and institutes and two nationally ranked hospitals, UCHealth University of Colorado Hospital and Children's Hospital Colorado, which treat more than 2 million patients each year. All interconnected, these organizations collaboratively improve the quality of patient care they deliver, research they conduct, and health professionals they train.

CU Anschutz

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Phone: 303-724-5000

Website: <https://www.cuanschutz.edu/>

How to Use this Catalog

The About CU Anschutz (p. 6) section provides information about CU Anschutz that is beneficial for prospective and current students, faculty, staff, and members of our campus community. The information in this section includes:

- About Our Students (p. 7)
- Campus Map, Parking, Directions (p. 7)
- Offices on Campus (p. 9)
- Campus Safety (p. 15)
- Accreditation (p. 19)
- University Leadership (p. 22)
- Campus Facilities Information (p. 23)

Further information stating purpose and intent of the academic catalog is housed in the About the Catalog (p. 26) section, followed by additional sections outlining policies, procedures, services, and academic offerings at CU Anschutz, including:

- University Policies (p. 26)
- Admissions (p. 55)
- Financial Information (p. 58)
- Academic Standards and Policies (p. 69)
- Schools, Colleges, and Programs (p. 80)
- Academic Services and Student Support (p. 438)
- Graduation Procedures and Commencement Information (p. 441)
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- Programs Listed by Degree (p. 442)
- Courses A-Z (p. 443)
- Programs A-Z (p. 619)

Welcome to CU Anschutz

A Message From the Chancellor

It is with great pride that I welcome you to the University of Colorado Anschutz Medical Campus. As the largest academic health sciences center in the Rocky Mountain region and a world-class medical destination at the forefront of innovation, we offer countless opportunities for future leaders in health and medicine.

Our dynamic campus offers the programs and resources to help you fulfill your academic goals, and to prepare you to thrive - and lead - in your chosen field.

Ample course offerings: With over 40 degree programs offered through six schools and colleges, and faculty who are among the best in their fields, here you will find an enriching learning environment and everything you need to make the most of your educational experience.

Interdisciplinary collaboration: We are always looking to remove barriers and promote collaboration in the health sciences. Our academic programs are designed with a real-world interdisciplinary focus and will have you learning alongside peers in a variety of career paths.

Hospital partners: Our campus is also home to two nationally recognized hospital partners - UCHealth University of Colorado Hospital and Children's Hospital Colorado - which not only provide some of the finest patient care in the country, but also offer hands-on training opportunities to our students.

And with more than 60 centers and institutes, robust industry connections and diverse research programs, you are bound to find tremendous opportunities for learning and discovery beyond the classroom and the laboratory.

Whatever course of study you choose at CU Anschutz, you become part of a vibrant community of leaders and innovators dedicated to careers of health, healing and hope.

We are excited to welcome you to our campus community, and hope your time here will be nothing short of transformational.

Don Elliman
Chancellor

About CU Anschutz

Who We Are

The University of Colorado Anschutz Medical Campus is the largest academic health center in the Rocky Mountain region at the forefront of transformative education, science, medicine and healthcare.

The campus includes the University of Colorado health professional schools, 60+ centers and institutes and two nationally ranked hospitals, UHealth University of Colorado Hospital and Children's Hospital Colorado, which see more than 2.6 million patient visits each year.

All interconnected, these organizations collaboratively improve the quality of patient care they deliver, research they conduct and health professionals they train.

Academically, the CU Anschutz Medical Campus serves **4,500 students** in more than 40 highly rated degree programs across **six schools and colleges**, supported by **\$910 million in research awards** in fiscal year 2024 – creating an overall economic impact to the state of Colorado of **\$13 billion**.

Part of the four-campus University of Colorado system, CU Anschutz and CU Denver together constitute a consolidated Higher Learning Commission-accredited entity (<https://www.cuanschutz.edu/university-accreditation/>) and have direct connections with CU Boulder and the University of Colorado Colorado Springs. The University of Colorado has been a leader in education, research and service for the state and beyond since 1876.

Powered by state-of-the-art facilities on a growing campus with a dynamic vision for the future, the University of Colorado Anschutz Medical Campus is uniquely equipped to lead health discoveries and treatment. To learn more about our mission and vision, please visit our website (<https://www.cuanschutz.edu/about/mission-and-vision/>).

Long History of Academic, Research, and Treatment Excellence (1883-1990s)

The roots of CU Anschutz' health science programs stretch back to the School of Medicine opening in Old Main at the University of Colorado in Boulder in 1883, with the College of Nursing following 15 years later in 1898, and the Skaggs School of Pharmacy in 1913.

In the 1920s the university's School of Medicine continued to grow, requiring a move from Boulder into a quadrangle of four brick buildings at Ninth Avenue and Colorado Boulevard in Denver to better serve both students and the community. The new Denver campus location eventually became known as the University of Colorado Health Sciences Center, and home to the University's health sciences programs. The construction and move were joined by the creation of Colorado General Hospital, the forerunner to today's UHealth University of Colorado Hospital.

Meanwhile, the current site of the CU Anschutz Medical Campus in Aurora was known as General Hospital 21, founded as a military hospital by the U.S. Army during the First World War to treat soldiers suffering from tuberculosis and other lung diseases. It was renamed to honor Lieutenant William Thomas Fitzsimons, the first US Army officer killed in World War I.

To continue providing help in treating tuberculosis and other medical conditions on a larger scale, a new main hospital building was constructed. The hospital was dedicated on December 3, 1941, and following the outbreak of the Second World War, as one of the largest and

most modern military hospitals in the country, the Fitzsimons campus played a key role in caring for sick and wounded soldiers during the war.

The Fitzsimons campus has even provided care to the Commander in Chief. In 1955, President Dwight D. Eisenhower recovered from a heart attack at Fitzsimons. As his health improved, he often went to the large eighth-floor sundeck of where he used binoculars to observe the mountains.

As the Fitzsimons hospital continued to care for members of the armed services through the second half of the 20th century, CU health programs broke new ground, with the School of Nursing launching the first nurse practitioner program in the country in 1965, and the School of Dentistry opening in 1973, joining the University's other health science programs at the University of Colorado Health Sciences Center in Denver.

These new programs built upon a decades-rich history of health sciences breakthroughs and discoveries at the University of Colorado Health Sciences Center, which included innovative research done to improve child welfare, pioneering work on open heart surgeries, critical advancements in public health policy, and the first ever liver transplant.

Growth, Base Closure, and a New Vision (1990s-Present)

By the late 1990s, however, the sustained success and growth at the University of Colorado Health Sciences Center ran into space limitations as the city of Denver had grown around the campus. A new home would be needed to continue to provide new transformative health discoveries for Colorado and the world.

At the same time, the Fitzsimons army campus was slated for closure by the military, as many of its functions had moved to Fort Sam Houston in Texas.

Noting the historical importance of a major health center in Colorado and envisioning the promise and potential of centralizing and connecting health education, care, and research on a single campus, local, state, and university leaders worked together with the goal of transforming the historic military medical center in Aurora into an innovative health sciences community by moving the University of Colorado Health Sciences Center and its schools and colleges to the land.

In 2006, the Fitzsimons campus, the eventual new home for the University of Colorado Health Sciences Center, was renamed the University of Colorado Anschutz Medical Campus in recognition of more than \$90 million in donations from The Anschutz Foundation to help in the construction of brand new education, research, and patient care facilities on the grounds.

Two years later, the academic and research operations of all CU health sciences schools and colleges relocated to the new campus on the former army base grounds. This move also included the founding of a brand new School of Public Health for the state; founded as a collaborative venture between the University of Colorado, Colorado State University and the University of Northern Colorado. UHealth University of Colorado Hospital also joined in the move to the CU Anschutz Medical Campus, along with Children's Hospital Colorado, to realize the vision of a fully integrated health sciences campus.

As the CU Anschutz Medical Campus has evolved and grown, so has the city and region we call home. Colorado's third largest city, Aurora is home to a budding arts scene, hundreds of ethnically diverse restaurants, and recreational opportunities ranging from boating to hiking. And with

the Rocky Mountains a short drive away, there is no better location to be inspired by your surroundings than Colorado.

Other Campus History

Interested in learning more about our campus history? Our schools, college and programs have more of their stories to tell at our website (<https://cuanschutz.edu/about/our-history/>) – alongside a map for a self-guided history walking tour of CU Anschutz.

About Our Students

About Our Students

The University of Colorado Anschutz Medical Campus serves more than 4,500 students in more than 46 highly rated degree programs across six schools and colleges, including the School of Medicine, College of Nursing, Skaggs School of Pharmacy & Pharmaceutical Sciences, School of Dental Medicine, Colorado School of Public Health, and Graduate School - where learning is integrated with state-of-the-art research in an environment designed to foster innovation and interdisciplinary study.

Each year, CU Anschutz graduates approximately:

- 120 Dentists
- 152 Medical Doctors
- 476 Nurses
- 149 Pharmacists
- 178 PhD Graduates across Disciplines
- 43 Physician Assistants
- 71 Physical Therapists
- 256 Public Health Practitioners

Campus Map, Parking, Directions

For information regarding **Transportation, Parking, and other Maps**, please visit the Facilities Management website (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/>).

Additionally, a **Virtual Tour** of the CU Anschutz Medical Campus is available through this site (<https://tour.concept3d.com/share/o1DOAicGv/stop/1/>).

Click here (<https://www.cuanschutz.edu/about/cu-anschutz-map/>) for an interactive and mobile friendly version of the campus map.

Contact Info

Parking & Transportation

Fitzsimons Building, 1st Floor
(West side of the Food Court)

- Weekdays: 7:30AM-4:30PM
- Phone: 303-724-2555
- Fax: 303-724-0079
- After hours: 303-724-4444

Carpool Parking

University staff and students who are on the Anschutz Medical Campus may sign up for carpool parking as an alternative to regular permit parking. Two or more eligible university staff or students must enroll, and they must work or go to school on the Anschutz Medical Campus. At

least two members of the carpool will be responsible for paying the fee. Failure to comply with carpool rules may result in the permit being revoked.

Bikes and Scooters

Bike racks are located near entrances to each building. Additionally, for year round convenience there are bicycle lockers available on the ground floor in the south east corner of the Henderson Parking Structure.

Throughout campus, bicycles should only be parking in the designated lockers and racks. Bicycles should not be chained or in anyway fixed to landscaping, rails, trees or light poles and are not allowed inside any building. Bicycles found in unauthorized areas will be removed and will need to be retrieved from University Police.

Scooter parking is available in designated areas across campus. Scooters should only be parked in these designated locations. Scooters should not be parked in bicycle racks. Please do not attempt to enter gated permit parking with a scooter as it may cause problems with the gate system and your parking access.

Motorcycle parking for permit holders is available in designated areas on campus. Motorcycles should only be parked in these designated locations. Please do not attempt to enter gated permit parking with a motorcycle as it may cause problems with the gate system and your parking access.

Motorcycle parking for visitors is in the designated visitor pay parking lots and the motorcycle must be accompanied by a parking receipt as proof of payment.

Visit the interactive campus map (<https://www.cuanschutz.edu/about/cu-anschutz-map/>) to view locations for the designated area for each of these items.

Special Events Parking & Transportation

The Parking and Transportation Services Division can provide parking for special events to be held on campus. Departments hosting these events must complete the event request through the link below. When that form is received the Coordinator will provide options for parking, if space is available. For more information, please visit the website (<https://www.cuanschutz.edu/offices/facilities-management/transportation-parking-maps/parking/special-events-parking/>).

It's important that departments make these arrangements **before** sending out invitations because the parking alternatives change from month to month. Departments will be charged for the cost of providing staffing at special events and for parking. Rates for staff will depend on the details of the event and will be discussed after the form has been submitted. To request parking or transportation for your special event, please use the EMS web portal (<https://schedule.ucdenver.edu/emswebapp/>) to reserve our services.

Permit Parking

Monthly permit parking rates are based on a calendar month; part-time parking rates are also available. More information on current rates and other policies for students, staff, and faculty are available via this website (<https://www.cuanschutz.edu/offices/facilities-management/transportation-parking-maps/parking/permit-parking/>).

Visitor Parking

Handicap Parking

Designated handicap parking is available in the visitor pay parking lots. Visitors must display the State of Colorado Disability Placard on their vehicle while in the visitor handicap parking areas along with parking payment receipt or the vehicle will be ticketed. Handicap parking spaces are subject to the same rate structure as indicated in the Patient and Visitor Parking online (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/parking/visitor-parking/>).

Patient/Visitor Parking

On the CU Anschutz Medical Campus, there are daily cash customer parking lots for CU Anschutz Medical Campus Patients and Visitors: Parking for patients or visitors is located at any parking lot signed "Patient and Visitor Parking" and at parking meters. For additional information, including current daily rates, please visit the website (<https://www.cuanschutz.edu/offices/facilities-management/transportation-parking-maps/parking/visitor-parking/>).

Parkmobile Pay By Phone

Using Parkmobile allows you to pay for parking, at Parkmobile enabled pay stations, by phone. When using Parkmobile you choose how long you want to park and pay for that amount of time. When the expiration time approaches, you can receive a text alert allowing you to extend your time (within the maximum time limit for the lot.) For more information please visit the Parkmobile (<https://parkmobile.zendesk.com/hc/en-us/articles/204712800-Denver-CO-University-of-Colorado-at-Denver-Parkmobile-Info/>) University of Colorado Anschutz Medical Campus website.

Reciprocal Parking

University of Colorado faculty and staff who have a valid full time parking permit may take advantage of this reciprocal parking agreement. Valid parking permits include ones issued by UCB, UCCS, CU Denver and Auraria. This agreement applies only for travel related to the performance of official university business. You must display in your car window the official parking permit that was issued to you from your home campus. The CU reciprocal parking arrangement is valid for specific designated parking lots only and availability is based on "first-come, first-served."

For additional information about this policy, and to access respective reciprocal maps for other campuses, please visit this website (<https://www.cuanschutz.edu/offices/facilities-management/transportation-parking-maps/parking/reciprocal-parking/>).

Citations and Appeals

Any misuse or illegal alteration of parking permits or entry cards or repeated violations of any of these regulations may result in not only a citation, but also the revocation of parking privileges and/or possible criminal prosecution.

Any person receiving a university parking citation shall respond to the Parking and Transportation Services Division within 14 calendar days of the issue date to pay the fine or to initiate an appeal. Citations not paid or appealed within 14 calendar days of the issue date will be subject to additional fees. Appealing a citation will delay this fee until a decision has been made on the appeal. Payment by mail is also acceptable. Non-payment of outstanding fines may result in the loss of parking privileges and/or the immobilization or towing of the vehicle.

Illegally Parked Vehicles Subject to Tow

Vehicles illegally parked in fire lanes, driveways, access roads or "no parking" areas may be towed when necessary to provide access for

emergency vehicles, construction vehicles, or to provide normal traffic flow. Driving on sidewalks or service-drives is prohibited except by service or emergency vehicles.

Citations Appeal Process

Penalty actions and citations may be appealed to the Parking Appeals Referee. Appeals must be received by the Parking Office within 14 calendar days of the issue date of the citation. Failure to meet this requirement will result in forfeiture of the appeal right. The decision of the Appeal Referee is final, and will be emailed to the appellant normally within 10 days. If the appellant does not hear from the Referee within 20 days, he/she should contact the Parking and Transportation Services Division. If the payment of the fine the Referee sets as the result of an appeal is not received by the Parking and Transportation Services Division within 10 days of the date of notification, the original fine prevails.

Tow/Immobilization of a vehicle

A vehicle parked in violation of these regulations may be towed at any time deemed necessary by the Parking and Transportation Services Division. An accumulation of more than three (3) unpaid citations or citations amounting to an unpaid dollar amount of \$90.00, constitutes grounds for immobilization (booting). The vehicle will not be released until the unpaid amount has been paid. There will also be an additional boot fee of \$45.00. The owner/driver of a towed vehicle will be responsible for paying the towing company's fee.

Disabled Vehicles

In the event of a mechanical failure of a vehicle, the owner or driver will be responsible for its removal as soon as available services will permit. Abandoned vehicles will be towed or impounded at the owner's expense. University facilities may not be used to store any vehicle. Exceptions to this policy may be made for those faculty and staff who are traveling on university business. Arrangements may be made by contacting the Parking and Transportation Services Division at 303-724-2555. Vehicle maintenance or repair is not permitted in campus parking facilities except for tire repairs, windshield replacement, and "jump starts".

For more information on this, please visit the website (<https://www.cuanschutz.edu/offices/facilities-management/transportation-parking-maps/parking/citations-appeals/>).

Campus Circulator

The Campus Circulator service provides daily intercampus transportation for patients, visitors, students, faculty and staff on campus. To request a ride on campus please call the Facilities Dispatch Center at 303-724-1777, or visit this site (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/parking/transportation/campus-circulator/>) for additional information including hours of operation and other specifications.

Medical Campus Rail Shuttle

The CU Anschutz Medical Campus Rail Shuttle connects with the R Line at the Fitzsimons Station on north Fitzsimons Parkway. Passengers can take this FREE shuttle to campus. For information on designated bus stop locations and hours of operation, please visit this site (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/parking/transportation/cu-anschutz-medical-campus-rail-shuttle/>), or call 303-726-2809.

RTD Eco Pass

Your RTD Eco Pass is not just for commuting to and from campus. You have unlimited rides on regular fixed route service provided by RTD and all RTD contractor-operated fixed route service, including bus and Light Rail. Eco Pass includes the Call-n-Ride and Airport bus and rail services. Plan your trip using the RTD Next Ride (<https://app.rtd-denver.com/nextride/plan/>) app.

Full time and part time staff and faculty on the Anschutz Medical Campus are eligible to participate in the Eco Pass program.

RTD Eco Pass: \$25.00 per month

For other RTD Eco Pass plus permit parking options, visit the CU Anschutz Parking (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/parking/>) page.

The replacement fee for a lost Eco Pass is \$25.00 the first time and \$50.00 the second time.

Your Eco Pass does not include: Guaranteed Ride Home, Access-a-Ride, Broncos Ride, Rockies Ride, Run Ride, Buff Ride, Saturday Shopper, Senior Ride and other special event services.

Calculate how much you can save by taking public transportation instead of driving using a fuel savings calculator (<http://www.publictransportation.org/tools-calculators/fuel-savings-calculator/>).

The benefits resulting from the RTD Eco pass program include:

- Decreased cost to access public transportation will provide alternative methods of commuting to campus as well as providing transportation throughout the RTD service area.
- Decreased on-campus parking, which will help alleviate the over-demand for limited parking resources.
- Contribution toward the University Sustainable Campus goals by reducing the amount of automobile emissions from a reduced amount of personal vehicles used commuting to campus, as well as transportation throughout the RTD service area.
- Increases take home salary by using pre-tax dollars instead of after-tax dollars.

For more information on the RTD Eco Pass please visit RTD's Eco Pass Page (<https://www.rtd-denver.com/fares-passes/ecopass/>).

** Reminder - degree seeking students enrolled in a degree program at the Anschutz Medical Campus already pay a mandatory student use fee for the RTD College Pass program.*

CU Anschutz Medical Campus Location

CU Anschutz

Fitzsimons Building

13001 East 17th Place

Aurora, CO 80045

Directions to Campus

From Downtown Denver

- Take Colfax Avenue east for about 10 miles
- Turn left on Fitzsimons Parkway

From Denver International Airport

- Take Peña Blvd. south to I-70 and go west
- At fork, merge left onto I-225 south
- Exit Colfax Avenue
- Turn right (west) at Colfax
- Turn right on Fitzsimons Parkway

From the North

- Take I-25 south
- Exit I-70 east
- Exit I-225 south
- Exit Colfax Avenue
- Turn right (west) at Colfax
- Turn right on Fitzsimons Parkway

Offices on Campus

Offices on Campus

Alumni Relations Office

Phone: (303) 724-2518

Email: healthalumni@cuanschutz.edu

Website: <https://www.cuanschutz.edu/offices/advancement/alumni>
(<https://www.cuanschutz.edu/offices/advancement/alumni/>)

The Alumni Relations Office at University of Colorado Anschutz Medical Campus is the central office responsible for connecting and engaging alumni to their alma mater. The CU Anschutz alumni community is a welcoming and active network of graduates from all of the schools on campus. The alumni of CU Anschutz include graduates of the CU Child Health Associate/Physician Assistant Program, College of Nursing, Colorado School of Public Health (including graduates from the University of Northern Colorado and Colorado State University), CU Anschutz Graduate School, Physical Therapy Program, School of Dental Medicine, School of Medicine, and Skaggs School of Pharmacy and Pharmaceutical Sciences, as well as those who completed their residency, internship, or fellowship in a health science program at the University of Colorado.

The Alumni Relations Office maintains records of alumni; plans alumni events in Colorado and throughout the U.S.; coordinates alumni board meetings and activities; sponsors annual meetings; hosts class and school reunions as well as student/alumni programs; and partners with the Office of Advancement to assist with alumni giving. The Alumni Relations Office also publishes magazines, newsletters, and e-newsletters for all alumni associations of the CU Anschutz Medical Campus.

Bookstore

Location: Education 2 South, 1st Floor

Phone: 303-724-BOOK (2665)

Website: <https://cuanschutz.bncollege.com>

The CU Anschutz Medical Campus Bookstore is designed to meet the needs of our busy faculty, staff, and students, providing convenient one-stop shopping. The Bookstore carries many products including:

- Medical reference titles and can special order any resource that may not be in stock, including campus authors
- Select medical equipment and supplies
- CU emblematic goods including t-shirts, sweatshirts, water bottles, stickers, and many school-specific items
- Convenience items such as greeting and gift cards, office supplies, single dose medications (aspirin, ibuprofen, cold medications, etc.) and personal hygiene items
- Scrubs and lab coats which can be embroidered with the University Seal.

Bursar's Office

Location: Education 2 North 3120

Office Hours: Monday - Thursday 9:00AM-4:30PM

Address: Bursar's Office, Mail Stop A098, 13120 East 19th Avenue, Room 3120A, Aurora, CO 80045

Phone: 303-315-1800

Fax: 303-315-1805

Email: Bursar@ucdenver.edu

Website: <https://www.cuanschutz.edu/student-finances/billing-payments> (<https://www.cuanschutz.edu/student-finances/billing-payments/>)

When a student begins researching higher education institutions, tuition is often the first stop. The Bursar's Office provides services in the areas below. Additional information can be viewed via the Financial portion of the academic catalog by clicking here (p. 58).

- Application Fee Payments
- College Opportunity Fund
- Departmental Deposit Transactions
- Tuition and Fee Payments
- Refunds and Direct Deposits
- Student Account Reconciliation
- Third-Party Billing
- Student Balance Outreach
- Past Due Tuition Collection
- Tax Offsets
- Perkins and Institutional Loan Servicing

Electronic Security

The University Police's Electronic Security division is comprised of two areas: the Badging Office and Security Systems.

Security Badging Office Access Control Badges

Access control badges provide photo and role identification, library privileges, and electronic access to locked and alarmed areas. University policy requires that students, staff, and faculty wear badges visibly (between neck and waist) while on campus. Displaying the badge lets other students know that you are a student, faculty or staff member. Temporary badges are not issued in lieu of forgotten or lost access control badges. Building/program administrators approve student access to the buildings and areas needed for their particular course of study or

research, as well as to the student computer centers, study areas, and the student center and student lounges.

You are required to keep your access control badge secured and immediately report a lost or stolen badge to the Security Badging Office (4-0399) or to the police (4-4444). Policy prohibits you from lending or borrowing badges, admitting unauthorized personnel, or otherwise gaining or granting unauthorized access to campus facilities.

Do not hold/prop open card-controlled doors or other secured doors, as this will initiate alarms to the Police Department. Misuse or abuse may result in adverse administrative action or denial of card access privileges. Badges are the property of the University and must be returned prior to graduation or separation. You may not cut, bend, or punch holes in your badge, nor expose it to heat, since this will break internal wiring and disable it for access. Badges are printed on both sides so that identifiable information is always visible. Do not place cards or other materials in the badge carrier to obstruct the card information. Lost or abused cards may result in a \$18 replacement charge. You do not need to display your RTD card and it should not be carried against your university access control card as misreads or denial of access may result.

Obtaining Badges

The schools' respective administrators schedule students for badging during registration or orientation. Each student must present either a driver's license or government-issued ID (each non-citizen must present a current and valid passport) before the badge will be issued. Please note that the last name on the identification must match the name used to register with the University. The badging staff will ask for any academic or professional credentials you may have to add as post-nominals to your name. RTD badges will be issued at the same time at the Security Badging Office.

Using Badges for Card Access

Card readers are located adjacent to card access-controlled doors. Card readers are rectangular dark gray or black panels, which are approximately 1" in depth and 2" X 4" in height and width. To unlock a card-reader door, pass the badge slowly across the front of the card reader within a few inches of its surface. If the reader recognized that your card grants access to the door, a beep will sound and a green light will illuminate. The system then unlocks the door. If the door has a door strike, you may hear a click. You will not hear a sound for magnetic locks. At this point, you will have about five seconds to open the door manually at a hinged door or approach an automatic door. If using an automatic door opener, first present your card to the card reader and then press the door opener.

Please report malfunctions to the Electronic Security Office (4-0014), providing your name and telephone numbers, the reader at which you had difficulty, the date and time of occurrence, and whether the card reader beeped. If you are having problems with your badge, please stop at the Security Badging Office for assistance (Fitzsimons building, Room N1207). For after-hours assistance, please contact University Police (4-4444). After verifying your access privileges for after-hours access to the area, the police dispatcher will send assistance to your location.

Replacing a Badge

Replacement fee for a lost badge or damage (due to negligence) is \$18.

Replacement fee for RTD College Pass [for students] is \$20.

The Security Badging Office accepts checks and credit cards (Visa or MasterCard).

NO REPRINT FEE FOR THE FOLLOWING

- Replacement due to a change in name, title, department, credentials or status.
- Reprint due to a new/extended expiration date.

Security Badging Office:

Phone (303) 724-0399

Fax (303) 724-1352

Location: 13001 E. 17th Place, Room N1207, Mailstop F506, Aurora, CO 80045

Email: SecurityBadgeOffice@ucdenver.edu

Web: <https://www.cuanschutz.edu/police/divisions/electronic-security/badging-office> (<https://www.cuanschutz.edu/police/divisions/electronic-security/badging-office/>)**Electronic Security Systems**

The Electronic Security personnel can provide service for existing or new security equipment. The Equipment Monitoring Action Form and Requests for Security Systems Service forms are available via this website (<https://www.cuanschutz.edu/police/divisions/electronic-security/security-systems/>).

Video Surveillance

The University has installed cameras in key areas of the campus to monitor and record a variety of security. Generally, cameras are installed on roofs, at primary entrances and in interior spaces where security monitoring is important. Programs capture camera imagery, when involved in an alarm, to display to the police dispatchers. Cameras are not present in areas where there is an expectation of privacy.

Electronic Security Division:

Phone: (303) 724-0014

Fax: (303) 724-0718

Location: 13309 E. 17th Place, Mailstop F409, Aurora, CO 80045

Financial Aid & Scholarships Office

Location: Education 2 North, Student Services Suite (3rd Floor)

Address: Financial Aid & Scholarships Office, Mail Stop A088, Education 2 North, 13120 E. 19th Avenue, Aurora, CO 80045

Phone: 303-724-8039

Email: FinAid@CUAnschutz.edu

Website: <https://www.cuanschutz.edu/student-finances/financial-aid> (<https://www.cuanschutz.edu/student-finances/financial-aid/>)

While the world of financial aid can seem intimidating, if you break it down and put in the work, making financial aid work for you will be the first step toward opening a door to your future. The Financial Aid and Scholarships Offices provides services in the areas below. Additional information can be viewed via the Financial portion of the academic catalog by clicking here (p. 58).

- How to apply for financial aid
- Free Application for Federal Student Aid (FAFSA) - <http://www.fafsa.gov/>
- Work-study and student employment opportunities
- Grant and student loan information
- Special circumstances, academic progress or financial hardship appeals
- Scholarships Information

Health Insurance for Students

The University of Colorado Denver | Anschutz Medical Campus is pleased to offer both health insurance and dental insurance to our students. For inquiries about the insurance plans offered at CU Anschutz or waiver requirements, please contact the Office of Student Health Insurance at studentinsurance@cuanschutz.edu or call 303-837-2127. Additional information is available online (<https://www.cuanschutz.edu/student/health-wellness/student-health-insurance/>).

HEALTH INSURANCE

All CU Anschutz Medical Campus students enrolled in a degree-seeking program and financial aid eligible certificate programs taking 1 or more credit hours are automatically enrolled into the student health insurance plan unless a waiver is submitted and approved by the stated deadline each semester.

Students who wish to waive the coverage must do so each semester by providing proof of comparable coverage that meets all waiver requirements within the published time frame.

International students on a J-1 visa, please contact the Office of International Student & Scholar Services (ISSS) for additional visa based requirements.

DENTAL INSURANCE

University of Colorado Anschutz student dental insurance is included with the medical coverage offered by Anthem Student Advantage, billed as one fee each semester. Students enrolled in a Regent-approved stipend PhD Graduate School program on the CU Anschutz Medical Campus are automatically enrolled in student coverage, which includes dental. A list of current programs automatically enrolled is available here (<https://www.cuanschutz.edu/student/health-wellness/student-health-insurance/dental/>).

International Student and Scholar Services (ISSS)

Address: 13001 East 17th Place; Fitzsimons Building, Ground Floor, EG305, EG305A, and EG306; Aurora, CO 80045

Phone: 303-315-2230

Email: iss@ucdenver.edu and employment-based.immigration@ucdenver.edu

From pre-departure to orientation, ISSS provides immigration and advising services for F-1 or J-1 student visas, J-1 exchange scholar visas, H-1B temporary worker visas, lawful permanent resident visas, and LPR-employment-based visas. ISSS also provides checklists for students' pre-arrival organization and planning, and a comprehensive international student orientation before classes start. Please see Academic Services and Student Support (p. 438) in this catalog for more information, or visit ISSS online via their website (<https://www.ucdenver.edu/services/international-student-and-scholar-services/>).

LGBTQ+ Hub

Location: Education 2 North, Room 2101 (shared with the Oasis Space)

Email: lgbtqhub@cuanschutz.edu

The mission of the LGBTQ+ Hub is to create and maintain an inclusive campus environment for LGBTQ+ and allied students, faculty, staff, patients and visitors on campus and within the Aurora community by:

- Promoting visibility, awareness and a sense of community;
- Connecting LGBTQ+ students, faculty and staff with peer-to-peer support and community resources;
- Providing education about the LGBTQ+ community;

- Establishing a repository for LGBTQ+ health research and competent patient care;
- Advocating for LGBTQ+ interests, including recruitment and retention; and
- Creating intentional partnerships to provide direct services to LGBTQ+ people on campus and in the Aurora community.

The LGBTQ+ Hub is envisioned as a one-stop shop that can achieve a campus and Aurora community culture where LGBTQ+ people are highly visible, are fully included and integrated in leadership, day-to-day living, communication and dialogue, and where vibrant partnerships exist between the LGBTQ+ Hub and the campus and Aurora communities-at-large.

Additional information on the LGBTQ+ Hub, including Core Beliefs, Guiding Principles, and Values, and programs and services supported are available online (<https://www.cuanschutz.edu/offices/diversity-equity-inclusion-community/programs-and-initiatives/lgbtq-hub/>).

Office of Access and Engagement

Location: Fitzsimons Building

Address: 13001 East 17th Place, Suite CG001, Aurora, CO 80045

Email: oea@cuanschutz.edu

Website: <https://www.cuanschutz.edu/offices/access-engagement>
(<https://www.cuanschutz.edu/offices/access-engagement/>)

The Office of Access and Engagement was established in January 2025 and is implementing best practices as it relates to access and engagement for students, staff, faculty and visitors on campus, and will maintain and develop mutually beneficial partnerships with the community.

- **Mission:** We are committed to transforming and advancing policies, programs and practices that address social injustices and health disparities alongside the communities we serve.
- **Vision:** We aspire to build a medical campus community that thrives on access and engagement; strives to eliminate social injustices and health disparities through measurable commitments, strategic, systemic and sustainable systems of accountability; and demonstrates trust and respect for ALL through inclusive practices and policies.

As a world-class medical destination at the forefront of transformative education, science, medicine and health care, we will combine efforts and leverage all of the campus missions to attain our goal. This includes expanding on the endeavors of the former Community-Campus Partnership program and strengthening the collaboration with our hospital partners.

Office of Disability, Access, & Inclusion

Location: Strauss Health Sciences Library

Phone: (303) 724-5640

Address: 12950 East Montview Boulevard, V23-1409, Aurora, CO 80045

Email: disabilityaccess@cuanschutz.edu

Website: <https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion> (<https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion/>)

The Office of Disability, Access, & Inclusion recognizes, welcomes, and celebrates disability as an integral part of a diverse health professions campus and workforce. To facilitate inclusion, we partner with students and programs to identify opportunities to create and promote meaningful access. The Office of Disability, Access, & Inclusion welcomes qualified

students with disabilities (e.g. psychological, learning, chronic health, sensory, or physical) and is committed to providing equitable access to our programs. Students who meet the technical and admission standards of our programs (with or without accommodations) partner with our office to establish access by identifying and removing barriers related to their disability.

Core Functions of the Office of Disability, Access, & Inclusion

- Partner with students and programs to ensure an accessible and inclusive experiences
- Coordinate, implement, and support individual and programmatic access through accommodation and education
- Serve as a resource to students/faculty/staff to facilitate and nurture an accessible and inclusive learning and training environment

Office for Educational Outreach and Pathway Initiatives

Location: Fitzsimons Building, 13001 East 17th Place Suite CG001

Phone: (303) 724-8003

Email: oio@cuanschutz.edu

Website: <https://www.cuanschutz.edu/offices/inclusion-and-outreach>
(<https://www.cuanschutz.edu/offices/inclusion-and-outreach/>)

The Office of Educational Outreach and Pathway Initiatives works to promote and support a diverse community that acknowledges values, fosters, and benefits from the unique qualities, rich histories, and wide variety of cultural values and beliefs that mirror and fulfill the University of Colorado Anschutz Medical Campus mission of education, healthcare, research, and community service.

The mission of Office for Educational Outreach and Pathway Initiatives is to provide sustained, comprehensive programs across all educational levels to promote access and increase numbers of underrepresented populations in healthcare, STEAM (science, technology, engineering, arts, and mathematics) and research professions.

The vision of the Office of Educational Outreach and Pathway Initiatives is to increase numbers of underrepresented populations in healthcare, STEM and research. We also will contribute to a future generation of professionals who aspire to reduce disparities among underserved communities.

Values:

- A holistic approach to student engagement.
- Addressing health inequities.
- Improving cultural sensitivities and responsiveness.
- Foster a welcoming, inclusive environment for the campus community.
- Providing mentorship and leadership opportunities through networking and community involvement.
- Promoting excellence and innovation.
- Bridging underrepresented populations through the P-20 spectrum to healthcare, STEAM and research disciplines.
- Infusing empowerment by increasing social capital.

Office of Equity

Location: Education 2 North, Room 5221

Phone: 303-315-2567

Email: equity@ucdenver.edu

Address: 13120 E. 19th Avenue, Room 5221, Aurora CO 80045

Website: <https://www.ucdenver.edu/offices/equity> (<https://www.ucdenver.edu/offices/equity/>)

The Office of Equity is dedicated to advancing an inclusive environment that supports the missions of CU Denver and CU Anschutz.

We strive to foster a community where all identities are respected, and every individual has equitable access to education and employment opportunities. We achieve this through transparent case resolutions, impartial investigations, support and safety measures, and comprehensive prevention education.

Office of Global Education | Study Abroad

Location: Global Education/Study Abroad, 13001 East 17th Place, Fitzsimons Building, Suite C8000A, Aurora, CO 80045

Phone: 303-315-2001

Email: study.abroad@ucdenver.edu

Website: <https://www.ucdenver.edu/students/study-abroad> (<https://www.ucdenver.edu/students/study-abroad/>)

The Office of Global Education / Study Abroad provides academically and professionally relevant international experiences to a diverse student population at the University of Colorado Denver | Anschutz Medical Campus. These experiences equip students with cross-cultural skills necessary to succeed in an interconnected global society. The Office of Global Education is committed to providing students with a wide range of engaging and affordable study, internship, research, and clinical opportunities.

International program offerings vary to meet the needs and interests of all students. These programs are open to undergraduate, graduate, and international students; it is not necessary to be a particular major to participate. Program lengths range from two weeks to an academic year or more. The vast majority of programs do not require language proficiency beyond the English language.

The Office of Global Education strives to keep study abroad programs affordable. In most cases, students are able to utilize financial aid and are eligible for an array of internal and external scholarships. For the most current information on programs, policies, and funding, please visit the Office of Global Education website at <https://www.ucdenver.edu/students/study-abroad> (<https://www.ucdenver.edu/students/study-abroad/>).

Office of Information Technology (OIT)

Location: Education 2 North, 5th Floor

Address: 13120 East 19th Avenue, Aurora, CO 80045

Phone: (303) 724-HELP (4357)

Website: <https://www.cuanschutz.edu/offices/office-of-information-technology> (<https://www.cuanschutz.edu/offices/office-of-information-technology/>)

The Office of Information Technology (OIT) (<https://www.cuanschutz.edu/offices/office-of-information-technology/>) works in partnership with academic and business units to provide technical support to meet the needs of students, faculty and staff at the CU Anschutz Medical Campus. OIT serves as the primary source of campuswide technology services (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/>) in partnership with school, college and department IT professionals.

Services range from providing wireless networks, email (<http://myemail.ucdenver.edu/>) and university passwords (<https://passport.ucdenver.edu/passwordreset/>), software, desktop

services, security (<https://www.cuanschutz.edu/offices/information-security-and-it-compliance/>), and systems development, to protecting the integrity of the university's data and administrative systems. Additional resources are available from the Student Tools and Services (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/for-students/>), and Technology Tools and Services (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/>), Remote Resources (<https://www.cuanschutz.edu/offices/office-of-information-technology/remote-resources/>), along with a host of other information.

Office of the Registrar

Location: Education 2 North (3rd Floor), Student Services Suite

Address: 13120 East 19th Avenue, Campus Box A054, Aurora, CO 80045

Phone: 303-724-8000

Fax: 303-724-8060

Email: Registrar@CUAnschutz.edu

Website: www.cuanschutz.edu/registrar (<https://www.cuanschutz.edu/registrar/>)

Allison Diekhoff, University Registrar

The Registrar's Office is committed to the delivery of quality, student-centered enrollment and academic support services through collaboration and the integration of technology. As stewards of student records and enrollment data, the department's goal is to provide judicious management and dissemination of student data for students, faculty, staff, and community constituents. The Office of the Registrar supports members of the CU Anschutz campus community in the following areas:

- Registration/Enrollment (p. 76)
- Name changes for current/former students
- Record changes (SSN, DOB, gender, etc.)
- Tuition Classification (p. 59) (i.e. In-State vs. Out-of-State Residency)
- Obtaining official transcripts (p. 77)
- Diplomas (p. 77)
- Education/degree verifications (p. 77)
- In-School Deferment requests
- Enrollment Verifications (p. 77)
- Family Educational and Privacy Rights Act of 1974 (FERPA) (p. 26)
- Application for graduation (p. 77) (via student portal)
- Leave of Absence/Withdrawal
- Transfer Credit Processing
- Degree Audit

Ombuds Office

Location: Fitzsimons Building, Room 7005C, 13001 East 17th Place, Mail Stop C217, Aurora, CO 80045

Phone: 303-724-2950

Website: <https://www.ucdenver.edu/offices/ombudsoffice> (<https://www.ucdenver.edu/offices/ombudsoffice/>)

The Ombuds Office acts as a no-barrier, first-stop for students, faculty and staff seeking guidance, information and insight from a trusted advisor who is:

- **CONFIDENTIAL** We will protect your identity and the information you share and are not compelled to share details of any conversation

with the University. Our only exception is imminent harm to self or to others.

- **INDEPENDENT** We are not affiliated with any other office or department at the University, but exist to present solutions and guidance that is independent of external and internal forces.
- **IMPARTIAL** We do not take sides, but work to address issues in a way that allows everyone involved in a dispute to be treated fairly and in good faith.
- **INFORMAL** Visiting us doesn't trigger a formal course of action often typical of HR or legal processes. Engaging an Ombuds is always "off the record".
- **VOLUNTARY** No one can be prohibited from visiting the Ombuds Office, nor can anyone be compelled to use our services.

Police Department

Phone number: 303-724-4444

Address: Anschutz Medical Campus Building 13309 E. 17th Place; F409; Aurora, CO 80045

Email: university.police@cuanschutz.edu

Website: <https://cuanschutz.edu/police> (<https://cuanschutz.edu/police/>)

The University of Colorado Anschutz Medical Campus Police Department is an agency with full police authority providing public safety services to our campus community 24 hours a day, 7 days a week, each day of the year. The police department is made up of 65 employees dedicated to providing quality service to our campus.

Our 29 full-time law enforcement officers respond to and investigate reports of criminal acts and emergencies on the CU Anschutz Medical Campus. These officers are Colorado P.O.S.T. certified and hold police commissions with the State of Colorado. The CU University Denver Police Department also employs six Security Officers.

Mission

To provide a prepared, safe, and secure campus environment in support of the educational, research, and patient care missions of the university.

Vision

To be a trusted and engaged department that delivers public safety services to support and complement the campus mission.

Values

The CU Anschutz Medical Campus Police Department strives to partner with our campus communities to be an advocate for the education, research, and patient care mission of the university.

- **Service-Oriented** – Understanding and meeting the safety and security needs of our community with care and empathy.
- **Collaborative** – Working together respectfully to achieve outcomes that support the needs of our community.
- **Accountable** – Being answerable and trustworthy for our attitudes, actions, and responsibilities.
- **Transparent** – Providing consistent, open, and clear communication.
- **Inclusive** – Cultivating a welcoming and curious environment where all perspectives are valued, heard, and respected.
- **Professional** – Conducting ourselves in a conscientious and courteous manner that aligns with industry best practices and accreditation standards.

Printing Services

Location: Fitzsimons Building, 13001 E. 17th Place, Room N1215, Aurora, CO 80045

Phone: 303-724-4610

Website: <https://www.ucdenver.edu/offices/printing/services> (<https://www.ucdenver.edu/offices/printing/services/>)

Printing Services offers self-service copiers in multiple locations on campus for 10 cents/copy per black and white page (color not available).

Students must create an account with Printing Services and pre-pay before they can use them. They can do this in person at their office on the 1st floor of the Fitzsimons Building or over the phone at 303-724-6410. Payment can be made via check, cash, or credit card. Please note that they do not have copiers located in their main office for student use.

Printing Services also offers graphic design services and can accommodate larger printing jobs and projects, such as brochures, posters and more.

Students, faculty and staff can drop off printing requests, consult with staff on any graphic design, poster and printing needs, and purchase paper - including thesis paper - by the sheet or ream. Printing Services handles any printing and mailing request.

Printing Services offers printing, design & layout, typesetting, copying, binding, posters, banners, bulk mailings, miscellaneous printed projects.

Whatever the project, big or small, Printing Services is happy to help in order to meet your needs with cost efficiency, high quality and a quick turnaround time.

SOS (Student Outreach and Support) | Creating a Culture of Care

Location: Education 2 North, 3rd Floor Student Services Suite

Office Hours: Monday-Friday 8:00am-5:00pm; Evening Hours on Monday 6:00pm-8:00pm

Phone: 303-724-2866

Website: <https://www.cuanschutz.edu/student/support/case-management> (<https://www.cuanschutz.edu/student/support/case-management/>)

At CU Anschutz, we engage in a culture of care and strive to maintain the well-being of the campus community. We collaborate with all of the schools and colleges to ensure students have access to resources that help them navigate challenging experiences. Functions include:

- Create access to resources for students to maintain their safety, health, and well-being
- Develop an environment where everyone understands their responsibility of noticing the well-being of those around them
- Consult and train on supporting students in navigating challenging situations
- Manage the Case Management referral system
- Manage the Medical Leave of Absence and Fit to Return process
- Use a case management framework for proactive and reactive support
- Convene the CARE Team

Veteran & Military Student Services

Location: Education 2 North, Student Services Suite

Mailing Address: 13120 East 19th Ave., P28-3207, Aurora, CO 80045

Phone: 303-315-7300
 Email: VMSS@ucdenver.edu
 Website: <https://www.cuanschutz.edu/veterans> (<https://www.cuanschutz.edu/veterans/>)

The University of Colorado Anschutz Medical Campus is military friendly and committed to providing service members and their families with a high-quality education, catered to their distinct needs. The Office of Veteran and Military Student Services (VMSS) supports veteran, active duty, reservist, national guard and dependent students. The main priority of the office is to verify U.S. Department of Veterans Affairs education benefit certification for eligible students, ensuring that each student meets the Veterans Administration requirements for attendance, course load, content, as well as all other regulations necessary to receive educational benefit payments.

This office assists students with filling out Veteran Affairs paperwork and in solving problems associated with the receipt of Veteran Affairs related educational benefits. The VMSS provides student mentoring, transition assistance into higher education, mental health services that are specific to the military and transition issues, and career preparation through the Boots to Suits Program. The office also serves as a liaison to numerous Veteran community resources. In addition, the VMSS mission is to improve and enrich the educational experience of our current and former military-related students through advocacy, community, as well as appropriate and responsive services.

MILITARY SERVICE AND RESIDENCY

Military-connected students living in the state of Colorado may qualify for in-state residency for tuition purposes. The military member must have reported to a duty station in Colorado, as certified by their military command, by the first day of class of the applicable academic term. All applicable documentation must be submitted by the last day of the semester in order to qualify for resident tuition classification. A list of scenarios (e.g. student veteran/active duty, dependent, etc.) and required documentation is available via this site (<https://www.cuanschutz.edu/veterans/benefits/#Residency>).

Campus Safety

University Police

Emergency Contact Numbers:

911 from any campus phone and/or (303) 724-4444 from any cell phone

Physical Location:

13309 E. 17th Place
 Mailstop F409
 Aurora, CO 80045

Phone Numbers:

303-724-2000 Police Department Main Number
 303-724-4999 Emergency Management or
emergencymanagement@cuanschutz.edu
 303-724-0800 Compliment/Complaint Line
 303-724-0399 Security Badging Office or
security.badgeo@ucdenver.edu

Website: <https://www.cuanschutz.edu/police> (<https://www.cuanschutz.edu/police/>)

Reporting

Anonymous and Confidential

The University Police Department maintains an anonymous compliment/complaint phone line. Information left on this voice messaging system will be investigated and acted upon as the information provided allows.

The Chief of Police/designee reviews the messages approximately 1-2 times per week. To leave a message call (303) 724-0800.

To contact the University Police Department by email for a response in 1-2 business days, send to university.police@ucdenver.edu.

If you have a concern that you want to share you can also report it to Case Management.

Ethics Line: (800) 677-5590 or https://secure.ethicspoint.com/domain/en/default_reporter.asp - The University's Ethics Hotline allows individuals to anonymously report concerns involving a possible violation of law, regulation or policy. All university employees who act in good faith in reporting known or suspected violations of law or university policy are protected from retaliation.

Crimes reported to these sources will assist the university in keeping accurate records regarding the number of incidents involving students, determine where there is a pattern of crime and alert the campus community to any potential danger. Reports filed in this manner are counted and disclosed in the annual crime statistics for the university; however, no identifying information is reported by these sources.

How to Report a Crime

Under Colorado Law, "It is the duty of every person who has reasonable grounds to believe that a crime has been committed to report promptly the suspected crime to law enforcement authorities." C.R.S. 18-8-115

When on the CU Anschutz Medical Campus, crimes should be reported to the University Police Department. Crime reports can be made at any time. University Police services are available 24 hours a day, seven days a week. Priority is given to reports of incidents that threaten the life or safety of people, the security of property and the peace of the campus community. For immediate, direct access call 911 from any campus phone for emergencies. Cell phones and off-campus calls dial (303) 724-4444.

Call the University Police Department if:

- You witness someone committing a crime
- You need to report an old crime
- You see fire or smell smoke
- You think you observe a drunken driver
- You have knowledge of a chemical spill
- Someone is injured or ill
- You see anyone or anything suspicious

Police Reports

The University Police Department complies with the Colorado Open Records Act (CORA) CRS 24-72-201 to 206, and the Colorado Criminal Justice Records Act (CCJRA) CRS 24-72-301 to 309, when releasing records. Inspection or release of certain records may be denied per CRS 24-72-305.

By submitting a request online, you affirm the criminal justice records obtained from the University Police Department will not be used for the direct solicitation of business for pecuniary gain.

CRS 24-72-305.5 (1)

Records of official actions and criminal justice records and the names, addresses, telephone numbers, and other information in such records shall not be used by any person for the purpose of soliciting business for pecuniary gain. The official custodian shall deny any person access to records of official actions and criminal justice records unless such person signs a statement which affirms that such records shall not be used for the direct solicitation of business for pecuniary gain.

- Copies of University of Colorado Denver Police Department reports (e.g. for insurance purposes) are available through University Police Department Records. There is a charge of \$7 (up to 10 pages; \$.25 for additional pages more than ten) for this service. Report request forms are available at [cuanschutz.edu/police/services/request-a-copy-of-a-police-report](https://www.cuanschutz.edu/police/services/request-a-copy-of-a-police-report) (<https://www.cuanschutz.edu/police/services/request-a-copy-of-a-police-report/>).
- For more information, call (303) 724-0261

The Clery Act

The Jean Clery Disclosure of Campus Security Policy was signed into law in 1990. The Federal law, commonly known as the "Clery Act" required institutions of higher learning to disclose certain timely and annual information about campus crime and security policies. All post-secondary public and private institutions participating in Federal student aid programs must adhere to these regulations.

The Clery Act (<https://www.cuanschutz.edu/police/clery-act/>) was named after Jeanne Clery who was raped and murdered in her dorm room by a fellow students on April 5, 1986. Her parents championed the act in her memory. In 2013, the Clery Act was expanded to include requirements concerning sexual assault, domestic violence, dating violence and stalking. In compliance with this act, the University Police Department publishes an Annual Security Report.

The university of Colorado's Annual Security and Annual Fire Safety Report includes statistics for the previous three years for reported crimes that occurred on campus, in certain off-campus buildings owned or controlled by the University, and on public property within or immediately adjacent to and accessible from the campus.

The report also includes institutional policies concerning campus security, such as those concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assault, and other matters. This report, and all Clery Resources, may be viewed online at [cuanschutz.edu/police/clery-act](https://www.cuanschutz.edu/police/clery-act) (<https://www.cuanschutz.edu/police/clery-act/>).

Emergency Management

AED Locations

Automatic External Defibrillator (AED) current locations are available via this site (<https://www.cuanschutz.edu/police/divisions/emergencymanagement/aed-locations/>). Please note: Alarm will sound as soon as the case is open and will alert Campus Police to respond to the emergency.

Alert Communications

Communication plays a critical role before, during, and after any emergency or disaster. CU Anschutz works to provide emergency notifications to the campus community.

CU Anschutz Emergency Management will immediately notify the campus community upon confirmation of a significant emergency or dangerous situation occurring on campus that involves an immediate threat to the health or safety of students, faculty, staff, or visitors. Such notifications can be disseminated through a variety of communication methods as dictated by the incident.

There are two types of emergency notifications:

- CU Alerts!
- Campus Timely Warnings

CU Alerts!

The CU Anschutz Emergency Notification System (CU Alerts!) provides campus emergency alerts via text and/or email when conditions develop on or near CU Anschutz Medical Campus, which pose an imminent threat of danger to the Campus Community. Examples may include:

- Physical plant issues (e.g., natural gas leak, etc.)
- Inclement weather closures or delays
- Campus safety threats (e.g., robbery, active harmer, bomb threat, etc.)
- Hazmat situations

Timely Warnings

When a specific crime covered by the Clery Act occurs, the CU Anschutz Police is required to evaluate if there is a serious or ongoing threat to the campus community to determine if a **Timely Warning** email needs to be issued to all faculty, staff, and students.

Methods of Communication for all CU Anschutz Alerts:

Text: Students, faculty and staff are encouraged to register their personal cell phone number to receive emergency notifications by text through the CU Denver | Anschutz portal.

- Student Portal Instructions (https://www.cuanschutz.edu/docs/librariesprovider37/default-document-library/student-portal-how-to-add-cell-phone-number.pdf?sfvrsn=2bc691b8_2)
- Employee Portal Instructions (https://www.cuanschutz.edu/docs/librariesprovider37/default-document-library/how-to-update-your-info-in-the-portal.pdf?sfvrsn=41c791b8_2)

OR

If you are not affiliated with CU Denver | Anschutz (e.g., hospital employees, vendors, neighbors, parents, etc.) and would like to receive emergency alerts to your cellphone as text messages, **Text CUAnschutzAlerts to "226787" (Anschutz Campus only).**

Email: All University of Colorado Denver | Anschutz Medical Campus students, faculty and staff are automatically registered to receive emergency notifications to the University-issued email address. **You may not opt out of this.**

Desktop "Pop-up": University-owned desktop/laptop/tablets connected to the University domain will receive a screen "pop-up" alert.

Campus Phones

Campus phones may also be located in yellow boxes and in other locations. These phones (to include the red phones) may be used to make local calls.

Comprehensive Emergency Management Plan (CEMP)

The University of Colorado Anschutz Medical Campus Comprehensive Emergency Management Plan (CEMP) establishes the basis for providing emergency response resources and assistance to the campus community if impacted by emergencies or disasters, and is available for download here (https://www.cuanschutz.edu/docs/librariesprovider37/default-document-library/2016-cemp-cu-anschutz.pdf?sfvrsn=81ad8eb8_6).

Continuity of Operations Planning (COOP)

Continuity of Operations Planning (COOP) is an effort within individual executive departments and agencies to ensure that Primary Mission Essential Functions (PMEFs) continue to be performed during a wide range of emergencies, including localized acts of nature, accidents and technological or attack-related emergencies. COOP planning fosters recovery and survival in and after emergency situations. COOP establishes processes and procedures that allow for the continuation of essential functions when you can't be in your normal workspace, or a significant portion of your staff is absent (I.E. COVID-19). Additional information including guides and instructions on creating a COOP plan is available here (<https://www.cuanschutz.edu/police/emergency-management/coop/>).

Emergency Response Guide

Emergency Response Guides are placed throughout all of campus, and available for download here ([https://www.cuanschutz.edu/docs/librariesprovider37/default-document-library/anschutz-emergency-guide-for-classrooms-one-page-hybrid-\(003\)36fa05e6302864d9a5bfff0a001ce385.pdf?sfvrsn=f9d261ba_4](https://www.cuanschutz.edu/docs/librariesprovider37/default-document-library/anschutz-emergency-guide-for-classrooms-one-page-hybrid-(003)36fa05e6302864d9a5bfff0a001ce385.pdf?sfvrsn=f9d261ba_4)).

Red Phones

"Red Phones" are on hallway walls, usually near restrooms and inside elevators within the buildings on the CU Anschutz Medical Campus. Dial 911 from these phones for emergency police response. On the CU Anschutz Medical Campus, emergency call boxes are located in elevators in each building and at the entrances of most buildings.

SafeZone

The CU Anschutz Police Department utilizes the SafeZone (<https://www.safezoneapp.com/>) app as a personal wellbeing tool to ensure your safety and provide security while on the CU Anschutz Medical Campus.

To safeguard the quickest response time to your emergent location, download the app on your mobile device today. Additional information is available here (<https://www.cuanschutz.edu/police/emergency-management/safezone/>).

Community Education & Trainings

The Emergency Management Division regularly hosts a variety of courses and trainings, that provide attendees with the skills, resources, and knowledge to adapt and respond to emergency situations. The training and events calendar is updated regularly. Click here (<https://www.cuanschutz.edu/police/training/training-events-calendar/>) to view the Training & Event Calendar.

Active Harmer/Shooter Response Training (Run/Hide/Fight)

An Active Harmer/Shooter is an individual actively engaged in killing or attempting to kill people in a confined and populated area. More recently, the term was updated to "Active Harmer" because, while the individual's intention is the same, the weapon used may not be a firearm (e.g., hatchet, knife, vehicle, etc.). Active harmer situations are unpredictable and evolve quickly. Typically, the immediate deployment of law enforcement is required to stop the person levying the attack and mitigate harm to victims.

Additional information and details on upcoming training opportunities are available here (<https://www.cuanschutz.edu/police/training/active-harmer-information/>).

Build-a-Kit Training

Natural, human-caused, and technological disasters can occur at any time. Having a plan and an emergency disaster kit will increase your ability to adapt and respond if ever faced with a disaster. Whether circumstances dictate sheltering-in-place or evacuating, developing an emergency plan and an emergency disaster kit is an effective way to ensure you and those around you have the tools and resources in place and ready to go during an emergency.

The Emergency Management Division regularly hosts a variety of courses and trainings, that provide attendees with the skills, resources, and knowledge to adapt and respond to emergency situations. Additional information and scheduled training events are available via this site (<https://www.cuanschutz.edu/police/divisions/emergencymanagement/build-a-kit/>).

Stop the Bleed® Training

The #1 cause of preventable death after an injury is bleeding. In 5 minutes or less, someone can die from severe bleeding. Take action and learn how to STOP THE BLEED® today! If you would like to request a STOP THE BLEED® class for your school, college, or department, please email emergencygmt@cuanschutz.edu. Additional information, including scheduled training classes, are available here (<https://www.cuanschutz.edu/police/divisions/emergencymanagement/stop-the-bleed/>).

RAD Training

The Rape Aggression Defense System for Women is a program of realistic, self-defense tactics and techniques. The Department recognizes that for some people, personal empowerment and self-advocacy involves learning any number of personal protection strategies. There's no experience needed to take a R.A.D. class, because the progressive building block format gives everyone the opportunity to learn the skills they want to learn — from how to be aware of your surroundings and who's around you, to what to do if they're attacked from behind to using proper form. R.A.D. is not a martial arts program. Please visit this site (<https://www.cuanschutz.edu/police/training/rad-training/>) for additional information.

Support Services

Bicycle Registration

Protect your investment. Learn more about how to register your bike through this site (<https://www.cuanschutz.edu/police/services/bicycle-registration/>). Report suspicious activity near bike racks.

Door Openings

The University Police Department is able to assist when people have locked themselves out of an office. If this happens, please contact our Communications Center at 303-724-4444. You will need to provide your name, location and office number. Once your campus affiliation has been verified, a member of the Police Department will be dispatched to your location to assist with opening the door.

Fingerprinting

The state selected two vendors to provide sites, including mobile locations, across Colorado where applicants can obtain their electronic fingerprints. The fingerprints will be submitted directly to the Colorado Bureau of Investigation (CBI) for processing. Please visit the University Police website (<https://www.cuanschutz.edu/police/services/fingerprinting/>) for current vendor information.

Lost and Found

If you have lost an item "of value", please contact the University Police Department at 303-724-4444. If you have found an item "of value", please contact the University Police Department. You may turn the item in directly to the University Police Department located at 13309 E. 17th Place, or an officer can meet you to pick up the item. If your Access Control Badge has been lost or stolen, contact the Security Badging Office at 303-724-0399 as soon as possible. After hours, call 303-724-4444.

Items considered to be of little monetary value (clothing, personal keys, eyeglasses, etc.) are turned into the Facilities Management. You should contact Facilities Management Dispatch at 303-724-1777.

Additional information is available here (<https://www.cuanschutz.edu/police/services/lost-and-found/>).

Motorist Assistance

University Police personnel can assist with jump starting your vehicle.

This service is free and is available 24 hours a day at the CU Anschutz Medical Campus. Because of the anti-theft features on most new cars, side air-bags and the potential for a large amount of damage, we do not provide a vehicle unlocking service. We also do not assist with tire changes or other mechanical problems. However, we are happy to phone someone to assist you.

University Police Department: 303-724-4444

Property/Evidence Release

All property held by the University of Colorado Anschutz Police Department is released by appointment only. To schedule an appointment, please call 303-724-0261.

Please note items of evidentiary importance may not be available for release until authorized by either the District Attorney, City Prosecutor's office or Court hearing the case. Property can only be released to a person identified as the owner in the police report, or someone providing proof of ownership. A signed, notarized letter from the owner designating a specific person to receive the property will also be accepted. A government issued identification card is required for property releases.

Request a Copy of a Police Report

The University Police Department complies with the Colorado Open Records Act (CORA) CRS 24-72-201 to 206, and the Colorado Criminal Justice Records Act (CCJRA) CRS 24-72-301 to 309, when releasing

records. Inspection or release of certain records may be denied per CRS 24-72-305.

By submitting a request online, you affirm the criminal justice records obtained from the University Police Department will not be used for the direct solicitation of business for pecuniary gain.

CRS 24-72-305.5 (1)

Records of official actions and criminal justice records and the names, addresses, telephone numbers, and other information in such records shall not be used by any person for the purpose of soliciting business for pecuniary gain. The official custodian shall deny any person access to records of official actions and criminal justice records unless such person signs a statement which affirms that such records shall not be used for the direct solicitation of business for pecuniary gain.

To obtain a copy of a police report, you may submit the form below online, or request the report in person at:

Police Records
13309 E. 17th Place, Building P34
Mail Stop F409
Aurora, CO 80045

Additional information, including applicable fees, is available here (<https://www.cuanschutz.edu/police/services/request-a-copy-of-a-police-report/>).

Security Escort/Safe Ride Shuttle Service

University Police will gladly provide escorts within our campus jurisdiction during hours of darkness. To request a safety escort, please call the University Police Department. This service is provided for your safety and security and is free of charge.

University Police Department: 303-724-4444

Badging Office/Electronic Security

All CU Students, faculty, staff, affiliates, long-term and contractors are required to display their Access Control Badge while on the campus. The Security Badging Office is located in the Fitzsimons Building. The Access Control Badge is programmed to allow admittance to secured areas to which you have been authorized. All access is recorded by name for accountability. Do not share your access privileges with others. Please contact the Electronic Security Division for more information.

The Electronic Security Division is responsible for equipping all exterior doors to all buildings with access control devices and/or door position monitoring; all buildings have, by default, at least one card-controlled door in its secure perimeter. The Division also installs intrusion alarms, panic devices, CCTV monitoring and research equipment monitoring (i.e. freezers, incubators) for research laboratories and other restricted zones adjacent to public areas within the same building.

Please observe the following electronic security rules:

- Doors may not be propped open
- All electronic locking hardware should not be manipulated in a way to circumvent security
- Children and unescorted visitors must not be admitted entrance to secure and/or restricted lab areas

The University's electronic security system is an important element in providing a safe and secure environment for education, research and

patient care. Failure to comply with alarm or access requirements, or any attempt to circumvent the electronic security system or to violate the access control policy will not be tolerated. The Electronic Security Division has tracking software that records access to doors. When the cause of the alarm can be attributed to an intentional act designed to circumvent the intent of the security system, the Chief of Police will be notified. In the event mitigating factors are not provided that justify, in the opinion of the Chief of Police, the security compromise, a fee can be levied against the appropriate school for each violation. These fees are to offset the cost of dispatching the alarm, initial police response and investigation, monitoring and resetting of the intentional security violation, follow up by the Chief of Police and the need to track the violation.

In the event the security system has sustained damage from such an act, the cost of repair also will be charged to the school/college or program.

Immediately report a lost or stolen access control badge to the Security Badging Office (SBO) Monday – Thursday 8:00am – 4:00pm and on Fridays 8:00am – 12:30pm, or contact University Police Dispatch outside of SBO hours at 303-724-4444, so that the lost/stolen access control badge is deactivated.

Electronic Security Division: (303) 724-0014

Security Badging Office: (303) 724-0399

Accreditations and Memberships

Accreditation

The University of Colorado Anschutz Medical Campus (CU Anschutz) and the University of Colorado Denver (CU Denver) is a two-campus consolidated entity accredited by the Higher Learning Commission (<https://www.hlcommission.org/component/directory/?Action=ShowBasic&Itemid=&instid=1040>) (HLC) and is known by its authorized name, the University of Colorado Denver (the “University”), and by its working name, the University of Colorado Denver | Anschutz Medical Campus. The university's accreditation status was reaffirmed in 2021; the next comprehensive evaluation will occur in 2031.

Higher Learning Commission

230 South LaSalle Street
Suite 7-500
Chicago, IL 60604
info@hlcommission.org
Phone: 800-621-7440/312.263.0456
Web: <https://www.hlcommission.org/component/directory/?Action=ShowBasic&Itemid=&instid=1040>
(<https://www.hlcommission.org/component/directory/?Action=ShowBasic&Itemid=&instid=1040>)

History of University Consolidation & HLC Accreditation

In 2004 the University of Colorado Board of Regents approved a consolidation of the University of Colorado Health Sciences Center (abbreviated as UCHSC) and the University of Colorado at Denver (abbreviated as UCD). This single entity became known as the University of Colorado at Denver and Health Sciences Center (abbreviated as UCDHSC). The schools and college previously referred to as UCHSC now comprise the Anschutz Medical Campus.

Prior to their consolidation, UCHSC and UCD were accredited as independent institutions by the HLC. Prior to 1980 the University of Colorado Health Sciences Center was accredited as part of the University of Colorado system. The Health Sciences Center underwent comprehensive reviews by the HLC in 1980, in 1988, and in 1998. In December 2004, the consolidated university submitted a report to the HLC requesting that the Commission consider UCDHSC as one accredited institution. The HLC team that conducted a focused visit in January 2005, recommended approval of this change and the HLC subsequently approved this change.

In October 2007 the consolidated institution became known as the University of Colorado Denver. This was the authorized name not only with the HLC but with other entities also. We currently also use University of Colorado Denver | Anschutz Medical Campus as a working name for the university.

In April 2011, the University of Colorado Denver submitted a self-study encompassing both the Denver and Anschutz campuses and subsequently underwent a single and successful comprehensive visit to both campuses. Its accreditation was continued for a further ten years.

In 2021, the HLC reaffirmed the accreditation of the University of Colorado Denver for another ten-year period. The next comprehensive evaluation is scheduled for 2030-31. To verify our accreditation status, visit <https://www.ucdenver.edu/university-accreditation/>.

For complete information on University of Colorado Denver accreditation, see the Statement of Accreditation Status (<https://www.hlcommission.org/component/directory/?Action=ShowBasic&Itemid=&instid=1040>) on HLC's website.

Anesthesiologist Assistant Accreditation

The University of Colorado Anesthesiologist Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (<https://caahep.org/>) upon the recommendation of the Accreditation Review Committee for the Anesthesiologist Assistant (ARC-AA).

Commission on Accreditation of Allied Health Education Programs

9355 113th Street N. #7709
Seminole, FL 33775
Phone: 727-210-2350
www.caahep.org (<https://www.caahep.org/>)

CHA/PA Physician Assistant Program Accreditation

The Accreditation Review Commission on Education for the Physician Assistant (<http://www.arc-pa.org/accreditation-history-university-of-colorado/>)(ARC-PA) has granted Accreditation-Continued status to the Physician Assistant Program sponsored by the University of Colorado. Accreditation-Continued is an accreditation status granted when a currently accredited program is in compliance with the ARC-PA Standards.

Accreditation remains in effect until the program closes or withdraws from the accreditation process or until accreditation is withdrawn for failure to comply with the Standards. The approximate date for the next validation review of the program by the ARC-PA will be in 2026.

The review date is contingent upon continued compliance with the Accreditation Standards and ARC-PA policy.

College of Nursing Accreditation

The Bachelor of Science in Nursing degree program, Master of Science in Nursing degree program, Doctor of Nursing Practice program, and post-graduate APRN Certificate program at the University of Colorado College of Nursing are accredited by the Commission on Collegiate Nursing Education. The programs were most recently evaluated in 2019 and granted accreditation for a 10-year term, extending to December 31, 2029.

Commission on Collegiate Nursing Education

655 K Street, NW, Suite 750
Washington, DC 20001
202-463-6930
<http://www.ccnaccreditation.org>

The Midwifery programs offered by the College of Nursing, completed as part of the Master of Science in Nursing degree program, Doctor of Nursing Practice program, or post-graduate APRN Certificate program, are accredited by the Accreditation Commission on Midwifery Education. The programs were most recently evaluated in 2019 and are accredited through July 2029.

Accreditation Commission for Midwifery Education

2000 Duke Street, Suite 300
Alexandria, VA 22314
(703) 835-4565
<https://www.acme.org/> (<https://www.midwife.org/acme/>)

The College of Nursing maintains the following memberships:

- American Academy of Nursing
- American Association of Colleges of Nursing
- National Student Nurses Association
- Colorado Nurses Association
- National League for Nursing
- Sigma Theta Tau International

Colorado School of Public Health Accreditation

The Colorado School of Public Health is the first and only accredited school of public health in the Rocky Mountain West. Accredited by the Council on Education for Public Health (CEPH), the Colorado School of Public Health strives to train and support the public health workforce in Colorado and regionally.

In fulfillment of our mission and vision, our accreditation documentation lays out the goals and measures by which we and the accreditation entity measure our success in providing public health education and research throughout Colorado and the greater Rocky Mountain West.

Opened as a collaborative school in 2008, CEPH first granted school-wide accreditation in October 2010. It was re-accredited in 2024; this accreditation term extends until December 31, 2031. Requests for additional documentation or questions concerning documentation should be submitted to the Colorado School of Public Health via email at Colorado.SPH@cuanschutz.edu (colorado.sph@cuanschutz.edu).

About CEPH

CEPH is an independent agency recognized by the U.S. Department of Education to accredit schools of public health and public health programs outside schools of public health. Questions and formal comments concerning the Colorado School of Public Health accreditation process should be directed to:

Council on Education for Public Health (<http://www.ceph.org/>)
800 I Street NW, Suite 4008
Washington, DC 20001
Phone: 202.789.1050

Graduate School Accreditation

The University of Colorado Anschutz Graduate School is included with the university's institutional accreditation, which is granted by the Higher Learning Commission.

HIGHER LEARNING COMMISSION

230 South LaSalle Street
Suite 7-500
Chicago, IL 60604
info@hlcommission.org
Phone: 800-621-7440/312.263.0456
Web: <https://www.hlcommission.org/component/directory/?Action=ShowBasic&Itemid=&instid=1040>
(<https://www.hlcommission.org/component/directory/?Action=ShowBasic&Itemid=&instid=1040>)

Physical Therapy Program Accreditation

The Physical Therapy Program at University of Colorado is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Ave., Suite 100, Alexandria, Virginia 22305-3085; 800-999-2782; accreditation@apta.org; <http://www.capteonline.org> (<http://www.capteonline.org/>).

The program was most recently reviewed in November 2020 and the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association (APTA) reaffirmed the accreditation status based upon compliance with all of the evaluative criteria. The accreditation status remains in effect until December 2031.

The University of Colorado Physical Therapy Program is a member of the American Council of Academic Physical Therapy (ACAPT) which supports academic institutions to strive for excellence in physical therapist education. We encourage faculty, clinical educators, academic administrators and students interested in pursuing teaching to check out acapt.org (<http://acapt.org/>).

School of Dental Medicine Accreditation

The programs offered by the University of Colorado School of Dental Medicine are accredited by the Commission on Dental Accreditation (CODA). The programs were last reviewed in 2023; the next accreditation review will occur in 2030.

Commission on Dental Accreditation

211 East Chicago Avenue
Chicago, Illinois 60611
800.232.6108
coda.ada.org/en (<https://coda.ada.org/en/>)

School of Medicine Accreditation

The University of Colorado School of Medicine's medical education (MD) program is accredited by the Liaison Committee on Medical Education (LCME). The program was last reviewed in March 2025.

LCME: <https://lcme.org/directory/accredited-u-s-programs/>

LCME accreditation is a voluntary, peer-reviewed process of quality assurance that determines whether the medical education program meets established standards. This process also fosters institutional and programmatic improvement. To achieve and maintain accreditation, a medical education program leading to the MD degree in the United States and Canada must meet the LCME accreditation standards contained in the LCME document Functions and Structure of a Medical School (<https://lcme.org/publications/#Standards>). Programs are required to demonstrate that their graduates exhibit general professional competencies that are appropriate for entry to the next stage of their training and that serve as the foundation for lifelong learning and proficient medical care. While recognizing the existence and appropriateness of diverse institutional missions and educational objectives, the LCME subscribes to the proposition that local circumstances do not justify accreditation of a substandard program of medical education leading to the MD degree.

For medical education programs located in the United States, accreditation by the LCME establishes eligibility for selected federal grants and programs, including Title VII funding administered by the U.S. Public Health Service. Most state boards of licensure require that U.S. medical schools granting the MD degree be accredited by the LCME as a condition for licensure of their graduates. Eligibility of U.S. students in MD-granting schools to take the United States Medical Licensing Examination (USMLE (<http://www.usmle.org/>)) requires LCME accreditation of their school. Graduates of LCME-accredited schools are eligible for residency programs accredited by the Accreditation Council for Graduate Medical Education (ACGME (<http://www.acgme.org/>)).

The University of Colorado School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. ACCME accreditation seeks to assure both physicians and the public that continuing medical education activities provided by the University of Colorado School of Medicine meet the high standards of the Essential Areas, Elements and Policies for Accreditation as specified by the ACCME.

Skaggs School of Pharmacy & Pharmaceutical Sciences Accreditation

The Doctor of Pharmacy program of the Skaggs School of Pharmacy and Pharmaceutical Sciences is accredited by the Accreditation Council for Pharmacy Education (ACPE), the national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education. The program was reviewed last reviewed in 2023.

What is Accreditation?

Accreditation is a voluntary, non-governmental process of external quality review used by higher education to inspect colleges, universities and higher education programs for quality assurance and improvement.

Aside from the promise of overall quality educational opportunities, an institution's accreditation status provides students with the ability to qualify for federal funding and financial aid and to transfer credits to other programs that are also accredited. Accreditation can be required for professional licensure and is extremely appealing to employers.

Like all schools of pharmacy in the U.S., the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences is accredited by the Accreditation Council for Pharmacy Education (ACPE), a national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education. ACPE was established in 1932 for the accreditation of pre-service education, and in 1975 its scope of activity was broadened to include accreditation of providers of continuing pharmacy education. Once accredited, a school or college undergoes periodic renewal reviews.

Obtaining Accreditation

The process of accreditation is quite involved requiring the school to complete several steps in the accreditation process including:

- Preparation and self-examination
- Written self-study report of accomplishments
- Site visit by a team comprised of peer reviewers, and a representative from the accrediting body
- Judgment by the accrediting body
- Continuous review

By accepting accreditation status, a school agrees to uphold the quality standards set by the accreditation organization and agrees to periodically submit to accreditation renewal review.

More about ACPE

ACPE is an autonomous and independent agency whose board of directors is derived through the American Association of Colleges of Pharmacy, the American Pharmacists Association, the National Association of Boards of Pharmacy (three appointments each), and the American Council on Education (one appointment).

To learn more about our school's accreditation status or about the accreditation process, contact ACPE (<https://www.acpe-accredit.org/>).

Accreditation Council for Pharmacy Education: <https://www.acpe-accredit.org/faq-item/University-of-Colorado-Anschutz-Medical-Campus-Skaggs-School-of-Pharmacy-and-Pharmaceutical-Sciences-PharmD/>

University Leadership

CU Anschutz Medical Campus

Chancellor

Donald (Don) M. Elliman, Jr.

Chancellor, University of Colorado Anschutz Medical Campus

Read Bio (<https://www.cuanschutz.edu/about/leadership/chancellor/#ac-chancellor-ellimans-biography-0>)

University Leadership

Terri C. Carrothers

Executive Vice Chancellor for Administration & Finance and Chief Financial Officer

Roderick Nairn

Executive Vice Chancellor for Academic and Student Affairs

Scott Arthur

Vice Chancellor of Advancement

Thomas Flaig

Vice Chancellor for Research
CU Denver | Anschutz

Kathy Green

Vice Chancellor of Marketing and Communications

Kim Muller

Vice Chancellor for Innovation and Biotechnology

Regina Richards

Vice Chancellor of Access and Engagement

John H. Sampson

Vice Chancellor of Health Affairs

Steve Zweck-Bronner

Vice Chancellor & Senior Managing Associate University Counsel
CU System

CU Anschutz Medical Campus Deans

Ralph Altieri

Dean of the Skaggs School of Pharmacy and Pharmaceutical Sciences

Cathy Bradley

Dean of the Colorado School of Public Health

Denise Kassebaum

Dean of the School of Dental Medicine

Elias Provencio-Vasquez

Dean of the College of Nursing

Jennifer Richer

Dean of the Graduate School

John H. Sampson

Dean of the School of Medicine

To learn more about the University Leadership, please visit their website (<https://www.cuanschutz.edu/about/leadership/>).

University of Colorado System

The University of Colorado plays a profound role in the lives of individuals, businesses and communities throughout Colorado, across the country and around the world. More than a half million alumni are leaders in business, science, the arts, health care and their communities, and they're joined by some 15,000 more each year. In Aurora, Boulder, Colorado Springs and Denver, all four campuses are all for Colorado.

University Leadership

President

Todd Saliman

President, CU System

Read Bio (<https://president.cu.edu/bio/>)

Chancellors

Justin Schwartz

Chancellor, CU Boulder

Jennifer Sobanet

Chancellor, UCCS

Kenneth T. Christensen

Chancellor, CU Denver

Donald M. Elliman, Jr.

Chancellor, CU Anschutz Medical Campus

President's Executive Team

Annie Baccary

Vice President for Advancement Administration

Judi Diaz Bonacquisti, EdD

Vice President for Collaboration

Leonard Dinegar

Senior Vice President for Internal Operations and Chief of Staff

Jack Finlaw

President and Chief Executive Officer of Colorado Foundation

Michael Lightner

Vice President for Academic Affairs

Chad Maurturano

Vice President and Chief Financial Officer

Felicity O'Herron

Vice President and Chief Human Resources Officer

Danielle Radovich Piper

Senior Vice President for External Relations and Strategy

Heather Retzko

Vice President for State Relations

Tony Salazar

Vice President for Outreach and Engagement

Valerie Simons

Chief Compliance Officer and System Title IX Coordinator

Kerry C. Tipper

Vice President of University Counsel

To learn more about the Office of the President and University Leadership, please visit their website (<https://president.cu.edu/>).

University of Colorado Board of Regents

Callie Rennison

Chair, 2nd Congressional District
Current Term 2021-27

Ken Montera

Vice Chair, 5th Congressional District
Current Term 2025-31

Nolbert Chavez

7th Congressional District
Current Term 2021-27

Elliot Hood

At Large
Current Term 2025-31

Wanda James

1st Congressional District
Current Term 2023-29

Frank McNulty

4th Congressional District
Current Term 2023-29

Ray Scott

3rd Congressional District
Current Term 2025-31

Ilana Dubin Spiegel

6th Congressional District
Current Term 2021-27

Mark VanDriel

8th Congressional District
Current Term 2023-29

To learn more about the Board of Regents, please visit their website (<https://regents.cu.edu/>).

Campus Resources

Strauss Health Sciences Library

Location & Hours

Physical Location

(Immediately north of historic Fitzsimons Bldg):

Strauss Health Sciences Library
12950 East Montview Boulevard
Aurora, CO 80045
Phone: (303) 724-2152
Website: <https://library.cuanschutz.edu/>

Mailing Address

Strauss Health Sciences Library
Mail Stop A003
12950 E. Montview Boulevard
Aurora, CO 80045

Hours of Operation

(Please visit the library website (<https://library.cuanschutz.edu/about/strauss-library/hours/>) for the most current information.)

Library Perks & Amenities

The Strauss Health Sciences Library strives to provide our patronage with perks and amenities in the library to make your time here as comfortable as possible. Below you will find a list of perks and amenities available.

Study Zone (SZ) - The Study Zone is located on the second floor quiet area of the library and whisper quiet is the expectation in this area of the library. Users must have an Anschutz campus ID badge to enter and use the Study Zone.

Nap Pods (NP) - Nap Pods are available in the nap pod room in The Study Zone located on the second floor of the library. They are on a first come, first served basis. The nap pod room is a silent space for napping.

The Lounge (SL) - The Lounge at the Strauss Library is located just outside the front entrance of the library. There are two badge controlled entrances, users must have an Anschutz campus ID badge to enter and use the space. The Lounge is accessible 24/7 and provides a space for students, faculty, and staff to study, lounge, or grab a coffee and snack. A large fridge, along with two microwaves, a Keurig coffee machine, and a variety of vending machines with coffee and snacks are available.

Kitchens (K) - There are 3 kitchens located throughout the library. Kitchens are located on the first floor in the Lounge, on the second floor in the Study Zone, and on the north end of the third floor. They provide students, staff, and faculty with fridges, Keurig coffee machines, microwaves, and sinks.

Lactation Space (LS) - Strauss Library has a lactation space available for those who may need it. This space is located on the third floor in the Administration office.

Quiet Zones (QZ) - The library has three zones of differing levels of quiet available on the second floor. For more information about these quiet zones, please see the 2nd Floor Quiet Policy & Zones.

Record Now Studio (RN) - The Record Now: DIY Video Studio is a self-service one-button production studio that provides space for presentation recording. The studio has the capability for green or blue screen recording, touch screen display, PowerPoint presentations and more.

Wellness Workstations - The library has wellness workstations consisting of Bicycle Desks (BW), Treadmill Desks (TM), and Standing Desks. These workstations are located throughout the library on all three floors.

Charging Station (CS) - The library has a device charging station available in the South Commons on the first floor.

Map of Library

Please visit the library website (<https://library.cuanschutz.edu/about/perks-amenities/>) for the most current information.

Partners in the Library

Inworks

HOURS

By appointment only, email: inworks@cuanschutz.edu to make an appointment

Website: <https://engineering.ucdenver.edu/inworks> (<https://engineering.ucdenver.edu/inworks/>)

Phone: 303-724-4120

Location: 2nd floor of the library, room 2100

Office of Disability, Access, and Inclusion (ODAI) HOURS

8am-5pm, Monday-Friday

Phone: 303-724-5640

Website: <https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion> (<https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion/>)

Location: North Section of 1st floor - Room 1409A1 (View the Library's Floor Plan (<https://library.cuanschutz.edu/about/visit/first-floor/>))

Email: disabilityaccess@cuanschutz.edu

PASCAL

PASCAL, the Preservation and Access Service Center for Colorado Academic Libraries, is the state-of-the-art high density remote library storage facility located on the CU Anschutz Medical Campus.

Check the PASCAL website for PASCAL location & hours (<https://library.cuanschutz.edu/about/strauss-library/pascal/>).

Phone: 303-724-1114

Writing Center HOURS

By appointment only. Click here to make an appointment with the Writing Center.

Website: <https://clas.ucdenver.edu/writing-center/>

Phone: 303-724-4143 (voicemail only)

Location: 1st floor of the library, Room 1204

Note: CU Anschutz students also have access to the Writing Center at our Denver campus and via our online platforms.

CU Anschutz Health and Wellness Center

Situated at the Northwest corner of the CU Anschutz Medical Campus, the CU Anschutz Health and Wellness Center offers a holistic approach to well-being. Thanks to the visionary investment of the Anschutz Foundation and the University of Colorado, this state-of-the-art facility stands as campus hub for wellness information and programs. Offering an array of services ranging from a full-size fitness center, massage, and acupuncture to cooking classes, nutrition services, and the CU Medicine Weight Management and Wellness Clinic, the center caters to diverse physical, mental, and nutritional health needs. Moreover, it serves as a dynamic research hub, conducting groundbreaking studies in weight loss, physical activity, nutrition, women's health, and specialized programs for clinical populations. Through collaboration between top researchers, clinicians, and community interventionists, the center extends its impact beyond its walls, empowering individuals to embrace healthier lifestyles and thrive in their overall wellness journey. Explore more at anschutzwellness.com (<https://medschool.cuanschutz.edu/health-and-wellness/>).

Facility Hours

Fitness Center

Monday-Thursday: 5 a.m.-10 p.m.

Friday: 5 a.m.-9 p.m.

Saturday-Sunday: 7 a.m.-5 p.m.

Fitness Center Phone Number: 303-724-WELL (9355)

CU Medicine Weight Management and Wellness Clinic

Monday-Friday: 8 a.m.-5 p.m.

Clinic Phone Number: 303-724-9030

Clinic Fax Number: 303-724-9213

Location & Directions

12348 E Montview Blvd., Aurora, CO 80045

- At the corner of Montview and Racine on the CU Anschutz Medical Campus
- Driving directions (<https://www.google.com/maps/?ll=39.750067,-104.842645&z=14&t=m&h...>)

Parking Information:

The closest parking options for off-campus visitors are at the Monte Vista parking lot directly south of the building and the new Snowmass parking lot directly to the east of the building.

On-Campus Recreation

Intramurals

The Office of Student Engagement offers certain intramurals on campus as one day tournaments or weekly leagues. If you are interested please email Katelyn.Martin@cuanschutz.edu. Our current offerings include:

Indoor

- Ping Pong
- Cornhole
- Spike ball
- Volleyball
- Badminton

Equipment Check-Out

The Office of Student Affairs offers certain recreational equipment that can be checked out for use on or off campus. You may also reserve equipment for class or student organization events. Our current equipment offerings include:

- Frisbees
- Soccer Balls
- Badminton
- Spikeball
- Picnic Blankets
- Volleyballs and Nets
- Footballs
- Movie night set up
- Speaker with mic
- 100 Cup dispensers

Outdoor Events on Campus

Students may hold events on campus that are related to CU Anschutz campus student organizations or class activities. Check with your program student affairs administrator for more information.

General's Park

Close Enough to be On Campus is General's Park (actually part of Aurora Park and Recreation). General's Park is located on the northeast corner of Colfax and Peoria.

Students can reserve shelters / picnic areas in the Park for class get togethers/BBQs and other events for a fee. Start the reservation process

by going to the City of Aurora website (https://www.auroragov.org/things_to_do/parks__open_space__trails/shelter_rentals/).

Lola and Rob Salazar Student Wellness Center

CU Anschutz Students also have available to them discounted membership to the brand new Lola and Rob Salazar Student Wellness Center (<https://www.ucdenver.edu/wellness/>) at the Auraria campus. The first 30 days are \$30 and each month thereafter is \$39 for students of the Anschutz campus. See their website for hours and a full list of amenities (<https://www.ucdenver.edu/wellness/facilities/>).

Parking & Transportation Services

Parking and Transportation strives to provide high quality, customer-oriented services to the university community by:

- Equitably assigning parking privileges based on need
- Maintaining aesthetically pleasing and safe parking facilities
- Constructing additional parking facilities as needed
- Providing Campus Circulator Services (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/parking-transportation/campus-circulator/>)
- Providing alternative services for transportation to and from campus

Location:

Fitzsimons Building, 1st Floor
(West side of the food court)

- Weekdays 7:30am-4:30pm
- Phone: 303-724-2555
- Fax: 303-724-0079
- After hours call: 303-724-4444

For information regarding **Transportation, Parking, and other Maps**, please visit the Facilities Management website (<https://www.cuanschutz.edu/offices/facilities-management/parking-transportation-maps/>).

Additionally, a **Virtual Tour** of the CU Anschutz Medical Campus is available through this site (<https://tour.concept3d.com/share/o1DOAicGv/stop/1/>).

Click here (<https://www.cuanschutz.edu/about/cu-anschutz-map/>) for an interactive and mobile friendly version of the campus map.

About the Catalog and Archive Information

About the Catalog and Archive Information

This catalog describes policies and programs for the Fall 2025 - Summer 2026 academic year.

This catalog does not constitute a contract with the University of Colorado Anschutz Medical Campus, either expressed or implied, and the University reserves the right at any time to change, delete, or add to any of the provisions at its sole discretion.

Furthermore, the provisions of this catalog are designed by the University to serve as guidelines rather than absolute rules, and exceptions may be made on the basis of particular circumstances.

Students will be held responsible for complying with all requirements and deadlines published in this catalog.

The catalog is published only online in an accessible format. In accordance with requirements under the Americans with Disability Act (ADA), alternate formats are available upon request.

The CU Anschutz catalog is produced by the Office of the Registrar (<https://cuanschutz.edu/registrar/>) at the University of Colorado Anschutz Medical Campus (<https://cuanschutz.edu/>). Previous archived editions of this catalog are available online through this website (<https://catalog.ucdenver.edu/archive/>) or for older versions the Office of the Registrar website (<https://cuanschutz.edu/registrar/catalog/>).

University Policies

University and Campus Policies University System Policies

Phone: 303-860-5711

Website: <https://www.cu.edu/ope> (<https://www.cu.edu/ope/>)

The University of Colorado System Office of Policy and Efficiency (<https://www.cu.edu/ope/>) - oversees the president's university-wide administrative policymaking process; facilitates the development, review, approval and maintenance of university-wide administrative policy statements (APSS); and acts as the official repository and point-of-contact regarding APSS. OPE also supports the formal review of regent laws and policies.

Policies include:

- Intercampus Enrollment and Tuition
- Adopting Standards for Intercampus Transfer of Credits
- Sexual Misconduct, Intimate Partner Violence, and Stalking
- Digital Accessibility

Campus Policies

Phone: 303-315-2102

Email: policy@ucdenver.edu

Website: <http://www.ucdenver.edu/policies> (<http://www.ucdenver.edu/policies/>)

The Campus Policy Office resides in the Provost Office. This office oversees all development, coordination, management, rescissions and archives for all CU Denver and CU Anschutz campus policies.

Policies include those listed below:

Alcoholic Beverages at Official Functions

University of Colorado Denver | Anschutz Medical Campus official functions that include the serving of alcohol require the completion of an "Event with Alcohol" form and prior approval by the designated school/college/unit officer (Dean, Associate Vice Chancellor, or higher). Purchase of alcohol for personal consumption at official functions is allowed only if the source of the University funds is (1) gifts restricted for entertainment, donor cultivation, or personnel recruitment purposes and (2) approved by the Deputy Controller.

Sales of alcohol at University events may only be made at licensed establishments. Pooling resources to purchase alcohol constitutes sale of alcohol without a license and is therefore not allowed on University property or at University events.

To ensure proper management of an activity where alcohol is provided at a pre-approved official function, the following rules include but are not limited to:

1. All persons being served alcoholic beverages must be at least 21 years of age and have proper identification for proof of age.
2. An Event Manager will be present and will monitor the alcoholic beverage service area. The Event Manager/Sponsor is a responsible and accountable individual who will be present for the entire event.
3. Food items and non-alcoholic beverages will be available. These items must be available at no cost, in the same general location, and of such a variety as to make them attractive alternatives to the alcoholic beverages being provided.
4. Persons checking ID's will have knowledge of proper identification techniques and are over 21 years of age.
5. Persons dispensing alcohol will monitor individual's consumption and not continue to dispense to persons that show signs of impairment.
6. Alcoholic beverages will not be available for individuals to pour their own. There will be no open or unattended kegs, containers, or bottles.
7. If the event lasts more than two hours, alcohol will not be served during the last hour. For events lasting less than two hours, service will discontinue at least 30 minutes prior to the scheduled end of the event.
8. The entrance/exit access area will be monitored so as not to allow persons to carry in or take alcoholic beverages from the consumption area.
9. Designated drivers or other means of alternate transportation will be available.
10. Campus Police are notified in advance for on-campus events, as applicable.

For a complete listing of University rules for managing an official function with alcohol, please see the following policies or contact the campus Deputy Controller.

Campus Administrative Policy 3050 (<https://www.ucdenver.edu/docs/librariesprovider284/default-document-library/3000-general-admission/3050---alcohol-service.pdf>)

CU System University Risk Management Page (<https://www.cu.edu/risk/>)

Alcohol and Drug Policies

Full policy language is also available here: <https://www.ucdenver.edu/docs/librariesprovider37/default-document-library/2023-final-anschutz-asr.pdf>

As an academic community, The University of Colorado Denver | Anschutz Medical Campus is committed to providing an environment in which learning and scholarship can flourish. The possession or use of illegal drugs, or the abuse of those which may otherwise be legally possessed, seriously affects the University environment, as well as the individual potential of our students and employees. The University enforces state laws and related University policies, including those prohibiting the following activities on campus:

- A. Providing alcoholic beverages to individuals under 21 or possession or consumption of alcoholic beverages by individuals under 21.
- B. Distribution, possession, or use of illegal drugs or controlled substances.
- C. Possession of firearms or other dangerous weapons.

The abuse of alcohol and other drugs by students, regardless of age and of location (on-campus or off-campus), is prohibited by the Student Code of Conduct and Ethics and Professionalism codes on the University of Colorado Denver | Anschutz Medical Campus. This includes on- or off- campus activities sponsored by the University, such as officially sanctioned field trips, student-sponsored social activities, club sports travel, as well as activities of a student organization recognized by the institution. Professional meetings attended by employees and institution-sponsored activities abroad also fall under this code of conduct. The University can, and will, impose disciplinary sanctions for violations. Students are also subject to city ordinances and state and federal laws. A separate policy addresses violations by University staff.

The University strongly encourages students and staff members to voluntarily obtain assistance for dependency or abuse problem before such behavior results in an arrest and/or disciplinary referral, which might result in their separation from the institution.

The use of, or addiction to, alcohol, marijuana, or controlled substances is not considered an excuse for violations of the Student Code of Conduct or staff expectations, and will not be a mitigating factor in the application of appropriate disciplinary sanctions for such violations.

Help is available both on campus and within the community for students and staff members who are dependent on, or who abuse the use of alcohol or other drugs. Services are available at the Student and Community Counseling Center, (303-315-7270) for CU Denver Campus Students, Student Mental Health Services (303-724-4716) for CU Anschutz students, and The Colorado State Employee Assistance Program (303-866-4314) for CU Denver | Anschutz employees. These resources as well as other professional agencies will maintain the confidentiality of persons seeking help for personal dependency and

will not report them to institutional or state authorities. The CU Denver Health Promotion and Engagement Coordinator, (303)315-4009, provides educational and awareness programming, information, and assistance for CU Denver students. The Director of Student Health Promotion at the CU Anschutz Medical Campus, (303)724-7674, provides this programming for CU Anschutz students.

Student Sanctions

Underage students confronted by the institution for the consumption of alcohol will face disciplinary sanctions including, but not limited to, a warning, bystander class, online class, face-to-face class, reflection paper, personal success plan, counseling referral, alcohol assessment, disciplinary probation, disciplinary probation with loss of good standing, suspension, and expulsion.

Students whose use of alcohol or drugs results in harm or the threat of harm to themselves or others, or to property, regardless of the location of the incident, may face disciplinary action by the university up to and including expulsion.

Testing for the presence of illegal substances may be a condition of any probationary status imposed by the university for violations of drug-related provisions of this policy.

Students on the CU Anschutz campus will be sanctioned according to their individual school or college's professionalism/ethics or disciplinary codes. Any student with a positive result, as described above, may face disciplinary action by the university up to and including expulsion. CU Anschutz students must comply with their program, school, or college and/or licensing agency's policies and protocols pertaining to drug testing.

- School of Dental Medicine
- School of Medicine
- College of Nursing (<https://nursing.cuanschutz.edu/student-life/student-handbooks/>)
- Colorado School of Public Health (https://www.ucdenver.edu/docs/librariesprovider151/default-document-library/coloradosph-honor-code.pdf?sfvrsn=5d211eb9_4)
- Skaggs School of Pharmacy & Pharmaceutical Sciences (https://pharmacy.cuanschutz.edu/docs/librariesprovider195/current-student-documents/pharmd/student-policies/student_ethics_and_conduct_code.pdf?sfvrsn=ffc808b9_4)

As members of the university community, students are also subject to city ordinances and to state and federal law. Arrest and prosecution for alleged violations of criminal law or city ordinances may result from the same incident for which the university imposes disciplinary sanctions.

Colorado Marijuana Laws

Persons must be at least 21 years of age to buy, possess or use retail marijuana. It is illegal to give or sell retail marijuana to minors. Adults 21 and older can purchase and possess up to 1 ounce of retail marijuana at a time.

Medical marijuana requires a state red card, which can only be obtained by Colorado residents with a recommendation from a doctor that a patient suffers from a debilitating medical condition that may benefit from medical marijuana. Medical marijuana patients can obtain marijuana from a licensed center, a primary caregiver or self-grow.

Retail marijuana is intended for private, personal use. Such use is only legal in certain locations not open or accessible to the public. Marijuana

may not be consumed openly or publicly. This includes but is not limited to areas accessible to the public such as transportation facilities, amusement/sporting/music schools, venues, parks, playgrounds, sidewalks and roads and outdoor and rooftop cafes. It is also illegal to smoke at indoor-but-public locations like bars, restaurants, and common areas in buildings.

It is illegal to drive under the influence of marijuana and it can result in a DUI, just like alcohol. Anyone with 5 nanograms or more of delta 9tetrahydrocannabinol (known as THC) per milliliter in whole blood (CRS 42-4-1301) while driving can be arrested for DUI. The consequences of DUI are dependent on the driver, but they can include fines, jail time and a revoked license.

Counseling and Treatment

Short-term alcohol and other drug counseling is available at Student Mental Health Services 303-7244716 for CU Anschutz students.

Campus services may refer students to other treatment programs for more intensive treatment if deemed appropriate. CU Anschutz and the State of Colorado Employee Assistance Program offer employees additional education and counseling, as well as appropriate referrals. Below is an abbreviated list of services and treatment centers. The list includes a summary of the agency name, services offered at various levels of treatment, and contact information.

Animals on Campus

The University allows individuals to bring animals on Campus property or include them as part of University-sponsored events, programs, or activities in accordance with federal and state laws and in other situations subject to the rules outlined in this Policy. At the same time, the University recognizes the health and safety risks potentially created by unrestrained animals on Campus and at University-sponsored events, programs, or activities. This Policy sets forth roles and responsibilities of employees, students, visitors, and applicants for admission or employment with the University who have the need to bring animals on Campus or include them as part of University-sponsored events, programs, or activities.

Definitions

1. Animal Definitions

- a. **Emotional Support Animal:** an animal that is not a service animal as they are not specially trained to perform a task and are not covered by the Americans with Disabilities Act, as amended ("ADA") relative to public accommodations, but they are covered by applicable law relative to housing considerations to allow a person with a disability an equal opportunity to use and enjoy a dwelling. To legally be considered an Emotional Support Animal, the animal needs to be prescribed by a licensed mental health professional to a person with a disabling mental illness.
- b. **Pet:** an animal kept for ordinary use and companionship. A Pet is not considered a Service Animal, Service Animal in Training, Emotional Support Animal, Therapy Animal, or Research Animal.
- c. **Research Animal:** any animal that is covered under a University of Colorado Animal Care and Use Committee (IACUC) approved protocol. Research Animals are not Pets, Service Animals, Therapy Animals, or Emotional Support Animals unless part of a study approved by the IACUC. Their presence on campus is controlled by

the Office of Laboratory Animal Research; the terms of this Policy do not apply to those animals.

d. **Service Animal:** a dog, and in some specific instances a miniature horse, that has been individually trained to do work or perform tasks for an individual with a disability. The task(s) performed by the animal must be directly related to the person's disability.

e. **Service Animal in Training:** an animal engaged in training to become a Service Animal. All below references to Service Animals refers also to Service Animals in Training.

f. **Therapy Animal:** a trained animal that accompanies a licensed counselor or therapist to treatment sessions in order to deliver individualized animal-assisted therapy interventions.

2. Additional Definitions

- a. **ADA Coordinator:** an employee of the University responsible for providing information to and facilitating the reasonable accommodation process, pursuant to the ADA for employees and applicants for employment.
- b. **Campus:** includes all University-owned, leased, or controlled locations.
- c. **Disability:** with respect to an individual, a physical or mental impairment that substantially limits one or more major life activities of such an individual, a record of such an impairment, or being regarded as having such an impairment. The impairment may be permanent, chronic, or progressive. An impairment that is episodic or in remission is considered a disability under the ADA if the condition would substantially limit a major life activity when active.
- d. **Disability Services Director:** an employee of the University whose purpose is to provide assistance to students with disabilities, including the provision of reasonable accommodations.
- e. **Handler:** person without a disability who is training a Service Animal.
- f. **Partner:** person with a disability using a Service Animal. For purposes of this policy, this can be either a student or an employee.
- g. **Public Facilities:** any property, including buildings, grounds, and equipment controlled by the University and open to the public.
- h. **Qualified Individual with a Disability:** an individual with a disability who possesses the requisite skills, education, experience, and training for a position, and who can perform, with or without reasonable accommodation, the essential functions required for the position the individual desires or holds.
- i. **Reasonable Accommodation:** a modification or adjustment to the job application process or the work environment enabling a qualified individual with a disability to be eligible for a position, perform the essential functions of a position, or enjoy the same benefits and privileges of employment as are enjoyed by similarly situated employees without disabilities. The University provides reasonable accommodations to qualified individuals with a disability in order for them to enjoy equal benefits and privileges of work and to enable performance of the essential functions specified in the job description.

Responsibilities and Procedures

1. Service Animal Qualifications

A Service Animal must be individually trained to do work or perform tasks for the benefit of an Individual with a Disability. The work or tasks performed must be directly related to the disability. Service Animals must

be accompanied by a Partner at all times and the Partner must maintain control of the animal at all times.

The Service Animal must be current on vaccinations.

In situations where it is not obvious that the animal is a Service Animal, the University may ask:

- a. "Is the animal a service animal required because of a disability?"; and
- b. "What work or task has the animal been trained to perform?"

2. Service Animal Care and Control Requirements

The care and supervision of a Service Animal is the responsibility of the Service Animal's Partner. Service Animals must be harnessed, leashed, or tethered, unless the device interferes with the Service Animal's work or the individual's disability prevents using these devices. In that instance, the Partner must maintain control of the animal at all times through voice, signal, or other effective controls.

As noted in the ADA, the Partner is responsible for caring for and supervising the Service Animal, which includes toileting, feeding, grooming and veterinary care. If a Service Animal is sick, that Service Animal should not be brought to Campus or University-sponsored events, programs, or activities during the duration of that sickness. The Partner is responsible for the cleanup of all animal waste; the University may designate animal waste areas.

The owner or individual with a disability who has control or custody of a Service Animal or the trainer of a Service Animal is liable for any damage to persons, premises, or facilities caused by the Service Animal or Service Animal in Training.

3. Removal of Service Animals from Campus or University-Sponsored event, program, or activity

A University official, including, but not limited to, an event coordinator and/or a member of the Animals on Campus Committee, may require the removal of a Service Animal from campus or from a University-sponsored event, program or activity if it is: (1) out of control (i.e. biting or attempting to bite), vocalizing, running around, jumping at or on other animals or people or engaging in other aggressive or disruptive behavior; or (2) the animal is not housebroken.

Circumstances leading to removal will be reviewed on a case-by-case basis. In the event the University properly excludes a Service Animal, it must provide the Handler the opportunity to participate in the service, program, or activity without having the Service Animal present. Once a particular animal has been excluded, it may not return to campus. If an excluded animal reappears on campus, the animal's Partner will be referred, as applicable, to either a student conduct official or human resources for possible disciplinary action.

4. Employees and Service Animals on Campus

Qualified employees with a disability who require a Service Animal as a Reasonable Accommodation, as defined by the ADA, in a University office or other facility not open to the general public must submit a request that they be permitted

to bring their Service Animal to their place of employment. The ADA Coordinator may review this request with the Employee's supervisor. The employee must contact the ADA Coordinator at least two weeks in advance of the Service Animal coming on campus or other University

facility or as early as is reasonably practicable. After engaging in the interactive process on a case-by-case basis with the disabled employee, the ADA Coordinator may approve the requested accommodation and will provide documentation for the employee to present to their supervisor.

Employees who do not themselves have a disability that would benefit from the use of a Service Animal but wish to train an animal to be a Service Animal for other individuals must submit a request to the relevant campus ADA Coordinator.

These requests will be considered on a case-by-case basis with supervisor input, but not analyzed under the Americans with Disabilities Act.

Employees wishing to bring Service Animals and Service Animals in Training to campus must initially provide Service Animal and Service Animal in Training health and vaccination records, including but not limited to negative fecal exam results, to the ADA Coordinator and maintain such records, updated on an annual basis, that can be shown upon demand to the ADA Coordinator or a University official enforcing this Policy.

5. Students and Service Animals on Campus

A student with a disability, who requires a Service Animal in an academic setting, is encouraged to meet with the Office of Disability Resources and Services. After registration, including verification of the disability and Service Animal, is complete, the disability staff will provide documentation for the student to present to their faculty. In addition, the disability staff are available to assist with providing access to additional accommodations, resources, information, and advocacy.

6. Visitors and Service Animals on Campus

Visitors with Service Animals may access all public facilities, with the exception of areas where this Policy specifically prohibits Service Animals.

7. Extent of and Restrictions on Service Animal Access

The University may prohibit or otherwise restrict the access of Service Animals in certain University facilities due to health or safety restrictions or concerns, where the presence of a Service Animal may put the Service Animal at risk, compromise the integrity of certain research, or otherwise fundamentally alter a program or activity. Each request for access will be evaluated on a case-by-case basis by the ADA Coordinator or Disability Services Director.

Service Animals may be restricted from the following areas:

- Food preparation areas;
- Research laboratories;
- University Animal Care Facilities
- Mechanical rooms or custodial closets such as boiler rooms, facility equipment rooms, electrical closets, elevator control rooms, and similar spaces;
- Areas where personal protective clothing or equipment are necessary;
- Areas where there is a danger to the Service Animal such as classrooms, wet laboratories or wood/metal/machine shops, where there are physical chemical or other hazards on the floor, in the air, or protruding from a surface, that could cause harm to the animal.

8. Conflicting Disabilities

Individuals with medical issues aggravated due to the presence of other's Service Animals should contact the Office of Disability Resources and Services if the Partner involved is a student or the ADA Coordinator if

the Partner involved is an employee. The Office of Disability Resources and Services or the ADA Coordinator will resolve any conflict in a timely manner and will consider the conflicting needs and/or accommodations of all individuals involved.

Service Animals in Training on Campus

A trainer of a Service Animal, or an individual with a disability accompanied by an animal that is being trained to be a Service Animal, may have the right to be accompanied by the Service Animal in Training at the University. The presence of the Service Animal in Training may not interfere with the trainer's responsibilities to the University.

Pursuant to above, Employees requesting to bring a Service Animal in Training to the workplace must speak with the ADA Coordinator prior to bringing the animal to campus.

Emotional Support Animals are not Permitted in University Facilities

Students requesting to keep an Emotional Support Animal in their University dormitory, must work with the facility to determine under what circumstances the animal is allowed.

Therapy Animals are permitted in University public facilities to the extent that they are accompanied by a trained therapist or counselor and are being used solely for the purpose of individualized or group assisted animal therapy ("AAT"). The trained therapist or counselor must request permission from the University Committee prior to bringing the animal on campus and follow all campus requirements regarding third party use of facilities as well as certain minimum requirements relating to vaccination and insurance as determined by the Committee. The rules outlined above regarding Service Animals apply to Therapy Animals. Therapy Animals must:

1. Have completed a training program, acceptable to the University, prior to engaging in any therapy services.
2. Be seen by a veterinarian, the cost of which is paid by the animal's owner, once per year and provide to the University evidence of current vaccinations and a negative fecal exam.
3. Be secured in an appropriate crate or enclosed space/office at all times that the animal cannot be physically present with the Handler.

The Therapist or Counselor must:

1. Accept complete financial responsibility for the animal.
2. Obtain informed consent from each patient who will be seen by the Therapy Animal.
3. Maintain control of the animal at all times.
4. Develop a plan to remove the animal whenever the circumstances of the therapy session require removal.
5. Require that the patient wash their hands after coming into contact with the Therapy Animal.
6. Attend to the needs of the animal including, but not limited to, allowing the Therapy Animal regular breaks from the sessions, taking the animal outside to designated areas to eliminate, and providing water when necessary.
7. Keep the animal away from campus if it shows signs of illness until cleared by a veterinarian.

In addition to the prohibited locations in section above, the Therapy Animal may be further restricted by the clinical sites of practice.

"Puppy De-stress" type events must meet the criteria for therapy animals or otherwise be approved in writing at least two weeks prior to a scheduled event by the Committee.

Contacting the Animals on Campus Committee

Persons with concerns, about specific Service Animals they see on campus, may inform the Animals on Campus Committee at: aoc@ucdenver.edu.

Therapists and Counselors wishing to incorporate Therapy Animals into their practice and departments that wish to sponsor "Puppy De-Stress" events must inform the University by contacting the Animals on Campus Committee at aoc@ucdenver.edu. The request will then be forwarded to the Animals on Campus Committee who will review and meet with the Therapist or Counselor to outline additional requirements, if any.

ADA Resources

If you are a student at the CU Denver Campus and need to make an application for accommodations or need information regarding the ADA and Service Animals Policy, contact the Office of Disability Resources and Services at Disability Services Coordinator at (303) 315-3510 or by mail to CB 118 P.O. 173364 Denver, CO 80217-3364.

If you are a student at the CU Anschutz Medical Campus and need to make an application for accommodations or need information regarding the ADA and Service Animals Policy, contact the Office of Disability Resources at (303) 724-5640 or by mail at Strauss Health Sciences Library - 1409A1, 12950 East Montview Boulevard, Aurora, CO 80045.

If you are an employee or prospective employee and need to make an application for accommodations or need information regarding the ADA and Service Animals Policy, contact the ADA Coordinator at (303) 315-2700 or mail to P.O. Box 173364, Campus Box A005/130, Denver, CO 80217-3364.

Other Applicable Policies

University students and employees who are located off of University property and not engaged in a University-sponsored program or activity must adhere to the policies and procedures regarding animals established by the third party location.

Anti-Violence Policy

The University of Colorado strives to maintain an environment free of intimidating, threatening, or violent behavior, including but not limited to, verbal and/or physical aggression, attack, threats, harassment, intimidation, or other disruptive behavior in any form or by any media, which causes or could cause a reasonable person to fear physical harm by an individual(s) or group(s) against any person(s) and/or property. This policy is not intended to regulate the content of an individual's speech but is instead meant to address the manner in which individuals behave. This policy applies to academic, administrative, research, and service departments, programs, activities and/or services wherever CU Denver Campus and CU Anschutz Medical Campus business is conducted, including extended studies and international locations.

Policy Statement

University employees, students, affiliates, and visitors who engage in prohibited behavior shall be held accountable under University policy and local, state, and federal law. Any employee or student who commits prohibited behavior may be subject to disciplinary action, up to and including, dismissal or expulsion, as well as arrest and prosecution. Any visitor or affiliate who commits or threatens to commit prohibited

behavior may be subject to exclusion from campus, arrest, prosecution, termination of their business relationship with the University, and/or any other appropriate action.

Examples of prohibited behaviors may include any of the following behaviors that have the effect of causing a reasonable person to be in fear of harm to themselves or others, but are not limited to: (1) disturbing the peace by violent, tumultuous, offensive, or obstreperous conduct; (2) engaging in intimidating, threatening, or hostile statements or actions that unreasonably disrupts the work or learning environment, causes undue emotional distress to another, or creates a reasonable fear of injury to a person; (3) making gestures that convey threats; (4) or using fighting words; (5) uttering ethnic, racial, or sexual epithets; (6) making threatening comments about, or references to, violent events and/or behaviors; (7) waving fists, pushing, stalking, bullying, hazing; (8) destroying personal property in the workplace; (9) destroying university property; (10) physically assaulting or attacking persons or property; (11) throwing objects at persons or property; (12) engaging in vandalism, arson, or sabotage.

With regard to firearms, explosives and other dangerous or illegal weapons on or within any University of Colorado campus, leased building or areas where such possession interferes with the learning and working environment of the University of Colorado, please refer to Regent Policy 14.I, Weapons Control, and the forthcoming Campus Policy on Weapons Control.

Reporting Procedures

1. Emergency or Life-Threatening Situations

In the case of an emergency or life-threatening situation, immediately call 911. A call to 911 will go to the appropriate Campus, City, or County law enforcement agency. **A call to 911 from any campus telephone automatically registers the location of the telephone on which the 911 call was placed, even if no words are spoken.**

If calling from a cell phone on the Anschutz Medical Campus, please contact University Police at (303) 724-4444 or use Safe Zone to report the emergency situation. If calling from a cell phone on the Auraria Campus, please call Auraria Campus Police at (303) 556-3271. The AHEC Text-A-Tip number can also be a reporting avenue: 720-593-TIPS (8477).

2. Non-Emergency Situations

In all other situations, notify the Faculty and Staff Threat Assessment (FaST) team at (303) 315-0182 or the CARE Team at (303) 724-8488 at CU Anschutz Medical Campus or (303) 315-7306 for CU Denver Campus. The FaST Team will engage other departments as appropriate, including Human Resources.

3. Responsibility to Report

Anyone witnessing or receiving a report of prohibited behavior, or unauthorized possession, display or use of any unauthorized weapon shall immediately notify the appropriate authority, as listed above. Any supervisor who fails to make such a report shall be subject to corrective/disciplinary action.

The Workplace Violence Incident Report Form will be used by Human Resources and University Police to document each alleged violation of this policy. Copies of the form are available on the Human Resources website.

4. Non-Retaliation and Confidentiality

To the extent possible, no adverse action will be taken against anyone for truthfully reporting a violation of this policy. Further, every effort will be made to protect the confidentiality of all personal identifying information provided in reports of violations of this policy.

Disposition of Allegations; FAST Team and CARE Team Role and Teams' Training

1. Disposition

All reports of threatened, potential, or actual violent behavior or unauthorized possession, display or use of any weapon will undergo inquiry and be verified, documented, and confronted.

2. CARE Team

When it is alleged that a student has violated this Policy by engaging in threatening, potential, or actual violent behavior or unauthorized possession, display or use of any weapon, the CARE Team will investigate such reports for threat assessment, if necessary. The CARE Team will then refer recommended actions to the student's school or college for potential sanctions as part of the relevant school or college's student conduct process. The following units will assign individuals to serve as representatives to the CARE Team:

- Case Management
- Campus Student Affairs Office and/or Conduct Office
- Student Affairs for one School or College on a rotating basis (CU Anschutz Medical Campus)
- University /AHEC Police
- University Counsel
- Office of Equity
- University Housing & Dining (CU Denver Campus)

3. FaST Team

HR will investigate reports regarding prohibited behavior or possession, display, or use of any unauthorized weapon, and coordinate the University's response to violent behavior. When determined to be necessary by Human Resources, or University Police if the situation involves a Human Resources employee, a report will be referred to the FaST Team for threat assessment. The following units will assign individuals to serve as representatives to the FaST Team:

- Human Resources
- University Police
- University Counsel
- Office of Equity
- Auraria Police
- A licensed psychiatrist from the Department of Psychiatry
- Faculty with scholarly and applied expertise in workplace behavioral issues

4. Training

All members of the FaST Team and the CARE Team will participate in training provided by the National Behavioral Intervention Team Association (NABITA).

The University encourages the training of all employees, students, and affiliates in this area. Please contact Human Resources for more information.

Bathroom and Locker Room Policy

The University of Colorado Anschutz Medical Campus ("university") has adopted this policy for all students, employees, and visitors to ensure equal access to restrooms and/or locker rooms regardless of their sex, gender identity, or gender expression.

Policy Statement

1. Equal Access to Restroom and/or Locker Room Facilities

- a. The university strives to create and sustain a campus environment that supports and values all members of our community. One aspect of creating a supportive and respectful environment is providing access to safe restroom and/or locker room facilities.
- b. Students, staff, faculty, and visitors shall be permitted to utilize the multi-stall or single-stall restroom or locker room that corresponds with their gender identity and/or gender expression. Students, staff, faculty, and visitors shall not be required to use the restroom and/or locker room facilities that correspond to their sex.
- c. Questioning the presence of or harassing an individual who enters a restroom or locker room because of their perceived sex, gender expression or gender identity could be a violation of the university's Nondiscrimination policy.
- d. The university has posted the list and map of available all-gender or single stall restroom facilities online (<https://map.concept3d.com/?id=95#!ce/62237?ct/0,62239?s/>). Facilities Management is responsible to provide newly identified all-gender restrooms to the Office of Equity (OE). OE will review and update the list, as necessary.

2. Whom to Contact

- a. Employees or students with questions regarding the university's policy or concerns regarding discrimination based on sex, gender identity, or gender expression, may contact the Office of Equity at 303-315-2567 or via email at equity@ucdenver.edu. To report concerns of discrimination, you can submit an incident report form: https://cm.maxient.com/reportingform.php?UnivofColoradoDenver&layout_id=2.
- b. If rooms are unclean or need to be restocked with supplies, contact Facilities Services at 303-724-1777.
- c. For general support and advocacy on the Anschutz Medical Campus, please contact the Office of Access and Engagement at oe@cuanschutz.edu.

Definitions

- **Restroom:** A facility that includes at least one toilet and sink, but no bathing fixture.
- **Locker Room:** A facility that includes at least one area where an individual could disrobe to change clothing. This facility may or may not include a bathing fixture, toilet, or sink.
- **Gender Identity:** Refers to an innate sense of one's own gender, or an internal sense of who one is. See <https://www.ucdenver.edu/offices/equity/university-policies-procedures/discrimination-and-harassment/protected-characteristics> for more information.

- **Gender Expression:** Refers to the external appearance of one's gender, usually expressed through behavior, clothing, haircut or voice, and which may or may not confirm to socially defined behavior and characteristics typically associated with being masculine or feminine. See <https://www.ucdenver.edu/offices/equity/university-policies-procedures/discrimination-and-harassment/protected-characteristics> for more information.
- **Sex:** Refers to the assigned and/or classification of an infant at birth as male, female, or intersex based on reproductive organs. See <https://www.ucdenver.edu/offices/equity/university-policies-procedures/discrimination-and-harassment/protected-characteristics> for more information.
- **All-Gender Restroom:** A Multi-stall restroom designated for use by any individual(s) regardless of their sex, gender identity, or gender expression. Allows for access for several users at one time.
- **Single-Stall Restroom:** Restroom designed to accommodate one individual at a time, typically equipped with an external lock, to prevent access while occupied.
- **Multi-Stall Restroom:** Restroom designed to accommodate multiple individuals at a time, typically not equipped with an external lock.
- **Students:** Includes, but is not limited to, all students, including part-time, full-time, degree-seeking, non-degree seeking, undergraduate, or graduate students enrolled at CU Anschutz.
- **Employee:** Includes, but is not limited to, all staff, faculty, residents, fellows, including part-time, full-time and temporary appointments.

Campus Closures/Delays

This policy establishes physical campus closure and related staffing expectations during inclement weather and other emergencies, and is applicable to all faculty, classified staff, university staff and student employees at the University of Colorado Anschutz Medical Campus ("CU Anschutz"). Circumstances which may require that CU Anschutz facilities/campus be closed include but are not limited to: inclement weather such as snow, ice, tornadoes and other weather-related conditions, flood, fire, chemical spills, air pollution advisories and other similar natural disasters; and, acts of violent crime, terrorism and other major threats to personal health or safety.

Policy Statement

1. The decision to close the physical campus is vested with the CU Anschutz Chancellor or designee(s). With guidance from weather reports and forecasts, law enforcement agencies and other emergency personnel, the decision to close a campus will be made under conditions that pose serious health and/or safety hazards to campus constituents. The primary criterion for closing the campuses will be the current or changing conditions of the campuses and the immediate environment. No individual school or department may formally announce an independent closing decision. Closing considerations may include but are not limited to:

- Ability of employees to access the parking lots and buildings by 6:00 a.m.
- If the sidewalks are clear and safe for use by 6:00 a.m.
- Status of the roads cleared and negotiable by 6:00 a.m.
- State and or local warnings in place
- The number of consecutive days the campus has been closed
- Status of functioning infrastructure and services:
 - Domestic water
 - Steam

- Chilled water
- Telephones
- Network
- Electrical
- Circulator (Anschutz Medical Campus)
- Public transportation
- Public safety first responders
- Conditions surrounding the campus or facilities
- Ability of essential personnel to arrive at work and stay for an extended period of time
- Long-term outlook or weather forecast
- Forecast for length of time the campus/facility can be kept open
- Whether affiliate entities are impacted and/or open
- Whether State and local agencies are open

CU Anschutz has the authority to make campus closure decisions independent of city and state officials and is exempt from the State Inclement Weather Policy as established by the Governor for state employees.

a. CU Anschutz Medical Campus

The CU Anschutz Chancellor or designee(s), usually the Executive Vice Chancellor for Administration and Finance, have authority over the Anschutz Medical Campus, and off-campus work locations associated primarily with this campus. This applies to the locations in the Denver Metro area. Individuals in off-site locations outside of a radius of 15 miles of Aurora will follow the closure decision by the facility in which they are practicing.

University of Colorado Hospital Authority (UCH), Children's Hospital Colorado (CHCO) and other affiliates at CU Anschutz have separate operating policies that affect their staff. However, every effort will be made to coordinate closure information with hospital partners and other affiliates, particularly to ensure appropriate medical care coverage. Individuals required to work in those clinical facilities must follow the requirements and closure status of those locations.

b. Off-Campus Activities

Closures in the case of inclement weather also include the cancellation of off-campus activities. However, independent policies and procedures for closing may be determined for off-campus activities by the college, school, location, or department supervising and directing the impacted off-campus activities.

2. Communicating Closure Decisions

The Office of Communications at CU Anschutz is designated by the Chancellor to notify the news media of closures and update campus channels. CU Anschutz Police will notify the campus community through the CU Anschutz Alerts system. Weather closures and emergency notification decisions will be made as early as possible to facilitate the most effective communication. Multiple communication avenues will be used whenever possible, to ensure broad access to information. The primary sources of closure will include:

- Local television and radio stations and their websites
- CU Anschutz campus website: <http://www.cuanschutz.edu> and social media channels
- CU Anschutz Alerts system: text message, email message, website, and social media channel (coordinated through University Police)

d. CU Anschutz emergency information number: 877-INFO-070 (877-4636070) (coordinated through University Police)

3. Staffing Management

a. Essential Employees - Certain employees, by nature of their assignments, may be designated as 'essential,' e.g., certain police personnel, safety, medical, information technology, administrative and critical facilities personnel. Appointing authorities of applicable units usually identify these employees in advance and notify them of their status in writing. Specific incidents or circumstances may, however, require the immediate determination and notification that an employee must report during a campus closure. Since such essential employees are often expected to report to work during closures, they are required to be aware of the reporting and communication plan for their work area.

Essential employees with parking privileges should park in their normal parking spaces. If unable, essential employees need to park in spaces that are accessible, without using handicap spaces. They will need to watch for special notices or communications regarding parking and other special situations as they report to work.

Essential employees who do not report to work as assigned will be required to use vacation leave or have their pay docked for that time period. Such absences will also be considered in the evaluation of the employees' performance, including possible corrective or disciplinary actions.

b. Employees not designated as Essential (Staff and 12-month Faculty)

Non-essential employees who are regularly scheduled to work must stay away from campus during closures. It is expected that they will work remotely to the greatest extent possible during physical campus closures. If unable to perform their duties remotely or need to care for children, family members, or have other commitments, they can work with their supervisor to take vacation leave to accommodate needs.

c. Given that closures only occur in cases of extreme weather or other safety concerns, the campus will not be prepared to accommodate the health and safety of non-essential employees.

d. Employees who are on pre-approved leave (vacation or sick) at the time of a closure are required to use their earned leave during the closure.

Campus Weapons Control

Board of Regents Policy 14.I recognizes that the unauthorized possession of, knives firearms, explosives, and dangerous or illegal weapons on or within any University of Colorado campus, leased building, or areas where such possession interferes with the learning and working environment of the University of Colorado is inconsistent with the academic mission of the university. Further, Board of Regents Law 14.B.3 allows the chancellors of each campus to enact rules lawfully regulating the possession of firearms, explosives, and other weapons for their respective campus.

Policy Statement

Both the Denver Campus and the Anschutz Medical Campus prohibit the unauthorized possession of "Banned Items" as defined in this policy, including firearms, knives, explosives, and dangerous or illegal weapons

on any property owned, leased, or controlled by the Denver Campus or the Anschutz Medical Campus.

The only permitted exceptions to this prohibition are:

1. The carrying of a concealed weapon in accordance with the requirements of the Colorado concealed carry laws.
2. The carrying of a firearm or other weapon by any member of the armed forces of the United States, or Colorado National Guard while acting in their official capacity and in conformance with general or specific military orders, and
3. A peace officer, as described in § 16-2.5-101, C.R.S., when carrying a weapon in conformance with the policy of their employing agency as provided in § 16-2.5-101(2).
4. A law enforcement officer, agent, or employee of the United States, when lawfully carrying a weapon in conformance with the policy of their employing agency.
5. The possession of a Banned Item by individuals who have written permission from the chief of police for those campuses which have such an officer or from the chancellor after consultation with the chief of police. Requests for exemption from this policy shall be submitted to the Chief of Police and will be considered based upon the educational or business need for possession of the otherwise prohibited weapon.

In the event that an individual found to be in possession of a Banned Item, or is found to have intentionally or recklessly used or possessed an item that does not meet the definition of a Banned Item in a way that would intimidate, harass, injure or otherwise interfere with the learning and working environment of the university, that individual may be excluded from the university campus, leased building, or other area under the control of the university. For employees or students, the result may include termination or expulsion from the University. Such a decision will be made in collaboration with Human Resources (for employees) and Student Affairs (for students). In the case of the Denver Campus, officials shall make every effort to work with the Auraria Higher Education Center officials to obtain a reciprocal ban relating to AHEC property. This section is not intended to limit the discretion of the University to institute summary suspension proceedings.

This policy is intended to clearly state expected standards of personal conduct for employees, students, and visitors.

Definitions

A "Banned Item" shall include any of the following:

1. Firearms of any size or type of construction and ammunition, which may include but are not limited to: gas or air guns, including BB, pellet, and paint ball guns; firearm silencers; machine guns; short shotguns; short rifles;
2. Any knife with a blade over 3.5 inches in length, including hunting and fishing knives;
3. Ballistic, gravity and switchblade knives, regardless of the length of the blade;
4. Bows and arrows, and cross-bows;
5. Blackjacks, bludgeons, batons, nunchaku, throwing stars, and metallic knuckles;
6. Swords, pikes, lances and spears;
7. Fireworks, bombs, grenades and torches;
8. Shields, poles, or other objects that may or are being used to strike, block, push or corral another person; and

9. A harmless instrumentality, or replica, designed to look like a firearm, explosive, or other weapon.

Email Account

Email is an official means for communication within CU Anschutz. Therefore, CU Anschutz has the right to send communications to students/staff/faculty via email and the right to expect that those communications will be received and read in a timely fashion. Students, faculty, and staff are expected to check their official email address on a frequent and consistent basis in order to stay current with university communications. Students, faculty, and staff have the responsibility to recognize that certain communications may be time critical. University e-mail is provided to support University activities and excessive personal use should be avoided.

The University of Colorado Denver | Anschutz Medical Campus ("the university") considers information technology a strategic asset that is relied upon by faculty, staff, and students to accomplish the university mission. As such, the use of electronic mail (email) and the protection of information contained within the university email system is critical to the success of the university. This policy applies to all users of the university email systems, including students, faculty, and staff. Email is one of the most powerful and commonly used communication tools within the university, but there are many risks associated with communicating via email. Email communications should not be considered to be confidential exchanges of information, as they can be viewed by anyone unless properly protected. Email messages can also be intercepted, stored, read, modified, and/or forwarded to other recipients. In addition to these security concerns, casual comments in email may be misinterpreted and lead to contractual or other legal issues for staff and faculty.

Email Policy

1. **Purpose:** University email services are provided to support the academic, business and research missions of the university. All emails processed by the university information technology systems and networks are considered to be the property of the university.
2. **Responsibility:** Email users are responsible for avoiding practices that could compromise information security. This includes (but is not be limited to) preventing unauthorized access to email accounts by properly protecting login credentials, not storing passwords on public-access systems and proper use of encryption services for sending private data.
3. **Email as Official Communication:** Email is an official means of communication within the university. Therefore, the university has the right to send communications to students, faculty and staff via email, and the right to expect that those communications will be received and read in a timely fashion.
4. **Expectations:** Students, faculty, and staff are expected to check their official email address on a frequent and consistent basis in order to stay current with university communications. Students, faculty, and staff have the responsibility to recognize that certain communications may be time critical. University e-mail is provided to support University activities and excessive personal use should be avoided.
5. **Encryption:** Data that is classified as Private (as defined in the CU System Policy Glossary, see references, below) must be encrypted when being sent to recipients outside of the university and its affiliates' networks (i.e. when sent across the Internet or other public networks.). Such emails must be encrypted through an IT Services-managed encryption system.

6. **Out of Office Messages:** Do not unnecessarily disclose potentially sensitive information in "out of office" or "automated reply" messages (reference Email Security Guidelines, below).
7. **Privacy:** IT Services reserves the right to scan email traffic for malicious software, spam and unencrypted private or restricted information. While the university encourages the use of electronic mail and respects the privacy of users, all emails traversing university computing systems and networks are subject to automated scanning and monitoring. Emails may also be quarantined and/or reviewed by authorized university employees.
8. **Interception/Modification:** Except when specifically authorized by university management or where necessary for IT system administration purposes, employees must not intercept, divert, modify, or destroy another person's email communications or messages.
9. **Personal Use of University Email Accounts:** University email services may be used for incidental personal purposes provided that such use does not: (i) directly or indirectly interfere with the operation of computing facilities or electronic mail services# (ii) burden the university email system with noticeable incremental cost# or (iii) interfere with the email user's employment or other obligations to the university. Email messages arising from such personal use are also considered to be the property of the university with no expectation of privacy. Email users should assess the implications of this presumption in their decision to use university electronic mail services for personal purposes.
10. **Personal Email Accounts:** Use appropriate discretion when using Gmail, Hotmail, Yahoo or any similar external/third-party email services for university business or academic purposes. Do not forward or auto-forward university email that may contain private or restricted data (e.g. PHI, SSNs, or FERPA-protected data) to external/ third party email systems or store such email data on insecure mobile devices.
11. **Distribution lists and Listservs:** Exchange/Outlook email distribution lists should ONLY be used for email communications being sent to less than 150 recipients. Larger volumes of messages should be processed through IT Services managed listservs or other IT Services-approved email tools. IT Services provides free listserv services for faculty & staff.
12. **Campus-wide Distribution:** Only the Chancellor, the President, or their designee may send email communications to the entirety of the university. This includes faculty and/or staff and/or student populations.
13. **Restrictions: Do NOT use email:**
 - a. To create, send, forward or store emails with messages or attachments that are illegal or violate any other campus or University policy.
 - b. To commit the university to a third party, for example through purchase or sales contracts, job offers or price quotations, unless you are explicitly authorized by management to do so (principally applies to staff within the Procurement Service Center and Human Resources).
 - c. In ways that could be interpreted as representing or being statements on behalf of the university, unless you are a spokesperson explicitly authorized by university management to make such statements.
 - d. To send a message from anyone else's email account or in their name (including the use of false or spoofed 'From' addresses). If authorized by their manager, administrative assistant or other office personnel may send email on the manager's behalf but

should sign such email in their own name per procurement ("for and on behalf of") the manager.

Campus Administrative Policy 5011: Email (<https://www.ucdenver.edu/docs/librariesprovider284/default-document-library/5000-information-technology/5011---email.pdf>)

FERPA

The Family Education Rights and Privacy Act of 1974 (FERPA) deals specifically with the education records of students, affording them certain rights with respect to those records. For purposes of definition, education records are those records which are:

1. Directly related to a student and
2. Maintained by an institution or a party acting for the institution.

FERPA gives students who reach the age of 18 or who enroll in a post secondary institution the right to inspect and review their own education records. Furthermore, the right to request amendment of records and to have some control over the disclosure of personally identifiable information from these records, shift from the parent to the students at this time.

FERPA applies to the education records of persons who are or have been in attendance in post secondary institutions, including students in cooperative and correspondence study programs, video conference, satellite, internet or other electronic forms. FERPA does not apply to records of applicants for admission who are denied acceptance or, if accepted, do not attend an institution. CU Anschutz considers "enrollment" to begin on the first day of classes of the semester in which a student initially enrolls. FERPA rights end at death, but records may be released at the university's discretion.

Notice of Student Rights

Students at the University of Colorado Anschutz Medical Campus (CU Anschutz) have certain rights concerning their education records under the Family Educational Rights and Privacy Act (FERPA). These rights include:

1. The right to inspect and review the student's education records within 45 days of the day that the university receives a request for access. Students should submit to the registrar, dean, head of the academic department or other appropriate official, written requests that identify the record(s) they wish to inspect. The university official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the university official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education records that the student believes are inaccurate or misleading. Students may ask the university to amend a record that they believe is inaccurate or misleading. They should write the university official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the university decides not to amend the record as requested by the student, the university will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. The right to consent to disclosure of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the university in an administrative, supervisory, academic or research or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the university has contracted (such as an attorney, auditor or collection agent); a person serving on the Board of Regents; or a student serving on an official committee, or assisting another school official in interest if the official needs to review an education record in order to fulfill his or her professional responsibility. Upon request, the university discloses education records without consent to officials of another school, in which a student seeks or intends to enroll.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University of Colorado Denver to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-5920

FERPA generally requires the University to obtain student consent prior to disclosing their education records or personally identifiable information contained therein. One exception, which permits disclosure without student consent, is information about the student that the University has designated as "directory information." The following items are designated "directory information" and may be released at the discretion of the University of Colorado unless a student files a request to prevent their disclosure:

- name
- address, telephone number, and e-mail address
- dates of attendance
- registration status
- class (i.e. freshman, sophomore, junior, senior)
- major
- awards
- honors
- degrees conferred
- photos

Although these items are designated by CU Anschutz as directory information, only a limited amount of this information is routinely disclosed by CU Anschutz officials, and the University retains the discretion to refuse to disclose directory information if it believes such disclosure would be an infringement of student privacy rights.

Forms to prevent disclosure of directory information can be obtained at the Registrar's Office in Education II North, or visit the Registrar's website (<https://www.cuanschutz.edu/registrar/home/>). Questions regarding your rights under FERPA should be directed to the Registrar's Office:

CU Anschutz Medical Campus
Campus Box A054
Phone: 303-724-8000
Fax: 303.724.8060

Email: Registrar@cuanschutz.edu

Definition - Education Record

Those records directly related to a student and maintained by the institution or by a party acting for the institution are considered education records. The term "education records" does not include the following:

- Records of instructional, supervisory, administrative, and certain educational information that is in the sole possession of the maker thereof, and are not accessible or revealed to any other individual except a substitute who performs on a temporary basis (as defined in the institutional personnel policy) the duties of the individual who made the records.
- Records maintained by a law enforcement unit of the educational agency or institution that were created by that law enforcement unit for the purpose of law enforcement.
- Records relating to individuals who are employed by the institution, which are made and maintained in the normal course of business, relate exclusively to individuals in their capacity as employees, and are not available for use for any other purpose. Records of individuals who are employed as a result of their status as students (for example, work study students) are education records.
- Records relating to a student which are:
 - Created or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional, acting in his/her professional capacity or assisting in a paraprofessional capacity. Used solely in connection with the provision of treatment to the student.
 - Not disclosed to anyone other than individuals providing such treatment.

Definition - Legitimate Educational Interest

This means the demonstrated need to know by those officials of an institution who act in the student's educational interest, including faculty, administration, student employees, clerical and professional employees, and other persons who manage student records information.

Any school official who needs information about a student in the course of performing instructional, supervisory, advisory, or administrative duties for the University of Colorado Anschutz Medical Campus has a legitimate educational interest.

This includes contractors, consultants, volunteers and other outside providers used by the University of Colorado Anschutz Medical Campus, such as the University of Colorado Foundation and the National Student Clearinghouse.

Directory Information

FERPA directory information is information contained in a student's education record that generally would not be considered harmful or an invasion of privacy if disclosed. Under current CU Anschutz policy, the following information is designated as directory information:

Student name. If provided, a preferred name will be used when there is not a documented business or legal reason to provide a student's primary name. Students may also select a diploma name for graduation and commencement materials.

- Hometown (city, state)
- Campus email address*
- Dates of attendance

- Previous educational institutions attended
- School/college or division of enrollment
- Majors, minors and field of study
- Classification level (e.g., freshman, sophomore, graduate student)
- University-recognized honors and awards
- Degree status (e.g. expected graduation date and/or conferral dates/terms)
- Enrollment status
- Employment related to student status (e.g. teaching assistant, resident assistant or work-study) and dates for positions held
- Participation in officially recognized activities/sports, including height and weight of athletes
- Photos and videos taken or maintained by the university

**Campus email addresses are only disclosed to requestors who agree not to use them for solicitation.*

Although these items are designated by CU Anschutz as directory information, only a limited amount of this information is routinely disclosed by CU Anschutz university officials. The university retains the discretion to refuse disclosure of directory information if it believes such disclosure would be an infringement on student privacy rights.

Nondisclosure of Directory Information

Students may ask the University not to publicly disclose directory information. Students should be advised, however, if they are seeking employment, the Registrar's Office cannot release their enrollment, degree status or major to anyone unless the student comes to the Registrar's Office with a photo ID.

Forms to prevent disclosure of directory information can be obtained at the Registrar's Office in Education II North, or by visiting the CU Anschutz Registrar's website (<https://www.cuanschutz.edu/registrar/>). Questions regarding student rights under FERPA should be directed to the Registrar's Office:

CU Anschutz Medical Campus
Campus Box A054
Phone: 303-724-8000
Fax: 303.724.8060
Email: Registrar@cuanschutz.edu

Exceptions to Student Consent for Release of Educational Records

FERPA allows the institution the right to disclose student records or identifiable information without the student's consent under the following circumstances:

- To authorized representatives for audit of Federal or State supported programs.
- To university employees who are in the process of carrying out their specifically assigned educational or administrative responsibilities acting in the student's educational interest, including contractors, consultants, volunteers and other outside providers used by the University of Colorado Anschutz Medical Campus, including the University of Colorado Foundation and the National Student Clearinghouse.
- Veteran's Administration official.
- Officials of other institutions in which a student seeks or intends to enroll, after transfer enrollment or admission, disability and other health records may be released in the event of an emergency in the

need to protect the health and safety of a student or other persons under FERPA.

- Persons or organizations providing financial aid to students.
- Organizations conducting studies for, or on behalf of, educational agencies or institutions to develop, validate, and administer predictive tests, to administer student aid programs or to improve instruction, provided that individual identity of students is not made.
- Accrediting organizations carrying out their accrediting functions.
- Parents of a student who have established that student's status as a dependent according to Internal Revenue Code of 1954, Section 152; in connection with a health and safety emergency in connection with § 99.36; or the student is under 21 and has violated a federal, state or local law or a policy of the university related to the use or possession of alcohol or a controlled substance.
- Persons in compliance with a judicial order or a lawfully issued subpoena, provided that the institution makes a reasonable attempt to notify the student in advance of compliance. NOTE: The institution is not required to notify the student if a federal grand jury subpoena, or any other subpoena issued for a law enforcement purpose, orders the institution not to disclose the existence or contents of the subpoena.
- Persons in an emergency, if the knowledge of information, in fact, is necessary to protect the health or safety of students or other persons.
- An alleged victim of any crime of violence of the results of any institutional disciplinary proceeding against the alleged perpetrator. The information may only be given in respect to the crime committed.
- Schools may disclose personally identifiable information from education records to an outside contractor without prior written student consent if the outside contractor is a "party acting for" the institution and is performing a service which the institution would otherwise have to perform for itself (as in the case of the National Student Loan Clearinghouse for loan verification).
- Representatives of the Department of Homeland Security or Immigration and Customs Enforcement, for purposes of the coordinated inter-agency partnership regulating the Student and Exchange Visitor Information System (SEVIS).
- FERPA has been amended to permit educational agencies and institutions to disclose personally identifiable information from the student's records to the Attorney General of the United States or to his designee in response to an ex parte order in connection with the investigation or prosecution of terrorism crimes, under the US Patriot Act.
- Allows the return of an educational record, or information from an education record, to the party identified as the provider or creator of the record.
- Information regarding a registered sex offender's enrollment or employment status, or any changes of such.
- If the school determines that there is an articulable and significant threat to the health and safety to a student or other individuals, it may disclose information from educational records to appropriate parties.

Release of Disciplinary Information

Provisions of the Family Educational Rights and Privacy Act of 1974, as amended by the Higher Education Amendments of 1998, govern access to a student's disciplinary file. The student and/or those university officials who demonstrate a legitimate educational need for disciplinary information may have access to the student's disciplinary file.

The Campus Security Act permits higher education institutions to disclose to alleged victims of any crime of violence (murder, robbery, aggravated assault, burglary, motor vehicle theft) the results of the conduct proceedings conducted by the institution against an alleged perpetrator with respect to such crime. The Campus Security Act also requires that both accused and the accuser be informed of campus conduct proceedings involving a sexual assault.

Additionally, the Higher Education Amendments of 1998 permit disclosure of the final results of disciplinary cases in which a student has been found responsible for a violation involving violence or for a sex offense.

Concerns for Student Behavior, Health, and Safety

Across campuses nationwide, there has been a great deal of discussion related to the privacy of student records in relation to tragedies on college campuses. Most CU Anschutz Campus faculty and staff are aware that FERPA protects student rights to view their educational record, access and amend records, and control what disclosures can be made from these educational records. However, many University employees do not realize that FERPA does allow them to disclose information about students who they perceive to be behaving out of character, perceive the student to have a disturbing change in their normal behavior, or generate concerns about the safety of the student or others. It is important for faculty and staff to understand that FERPA does not prohibit the disclosure of personal observations of students.

FERPA allows university staff and faculty the discretion to release this information under specified circumstances, and through proper channels, to appropriate personnel on campus.

What are the “specified circumstances”?

FERPA allows the disclosure of information from the educational record, without the written consent of the student, under the following: “Persons in an emergency, if the knowledge of information, in fact, is necessary to protect the health or safety of the student or other persons”. The Department of Education interprets FERPA to permit institutions to disclose information from education records to parents if a health or safety emergency involves their son or daughter. For clarification purposes, the Department of Education recently proposed to amend the language of a “strictly construed” interpretation, and replace it with language that states the institutions have far “greater flexibility and deference” to “bring appropriate resources to bear on a circumstance that threatens the health or safety of individuals”.

Some concerns have been expressed by faculty and staff on campus that they are reluctant to share any information with the appropriate personnel on campus if the student advised them, verbally or in writing, that they were seeing a mental health or other medical professional. Note that anything expressed verbally by a student is not part of the “educational record”, and can be shared. If the student has advised a staff or faculty member of this in writing, it can still be shared with someone with “an educational need to know” as described by FERPA regulations, which would include those listed as the “appropriate personnel on campus” below.

To summarize: FERPA does not prohibit disclosure of personal observations to appropriate campus personnel about students of concern. Observers of such behaviors do not have to determine if this is an emergency that will be considered a threat of health or safety. They can consult with other appropriate personnel on campus for additional perspective, suggestions, resources, referral or assistance.

Who are the “appropriate personnel on campus”?

There are a variety of offices and personnel on campus who can be of assistance when you are faced with a student of concern. Some of these resources are listed below:

- Department Chair/Associate Dean/Director – in many cases these individuals are excellent resources and can help you to support the student and/or find additional support and resources on campus.
- Student and Resident Mental Health Services – located in the Anschutz Health Sciences Building (1890 N. Revere Ct, Suite 5040, Aurora, CO 80045), and available by phone at 303.724.4716. Appointments can be made by phone, or by emailing SMHservice@ucdenver.edu (smhservice@ucdenver.edu).
- The Campus Assessment Response & Evaluation Team (CARE) – is a multidisciplinary team that reviews and evaluates student behavioral concerns and intervenes as appropriate. Contact the CARE Team to submit a concern online 24 hours a day on their website (<https://www.cuanschutz.edu/student/support/care-team/>) and learn much more about recognizing and responding to students in crisis. Also available by phone at 303.724.8488.
- CU Anschutz Student Outreach and Support Office (SOS) – located in Education II North, with additional information available via their website (<https://www.cuanschutz.edu/student/support/case-management/>). This office collaborates with all of the schools and colleges to ensure students have access to resources that help them navigate challenging experiences. This office also manages the Medical Leave of Absence/Fit to Return process, and convenes the CARE Team when applicable. Staff are available to consult regarding disruptive behavior and concerns.

These offices are available for phone consultation to meet individually, or with a group of staff or faculty members to problem-solve about a particularly complex student situation. Other appropriate resources may also be referenced.

Finally, in an urgent situation, never hesitate to call University Police at 303.724.4444, or for emergency calls, 911.

For more information about CU student mental health resources, please visit one of the websites below:

CARE Team (<https://www.cuanschutz.edu/student/support/care-team/>)

CU Anschutz Student Outreach and Support Office (<https://www.cuanschutz.edu/student/support/case-management/>)

Student and Resident Mental Health (<https://medschool.cuanschutz.edu/psychiatry/programs/student-resident-mental-health/>)

Some faculty think they should not reveal the name of the student and keep the consultation anonymous. However, this is key information for the consulting party as that professional may already have some information about the student of concern that should be added into the information for the best way to proceed. Some of these professionals may already have had contact with the individual and you may be providing key information which the professional would need to know to be effective. Licensed mental health professionals have strict confidentiality laws to follow which restricts their ability to inform you. FERPA allows great discretion in informing the mental health professional of observed professional observations, as well as allows observers to share information about a student with a person who has an “educational need to know”.

In conclusion, it is important for all members of the CU Anschutz community to understand that FERPA does not prevent you from contacting others on the campus if you there are concerns about the behaviors of a student on campus. However, only those who are identified as the “appropriate personnel on campus” should be contacting the parents or other relatives of students. These trained individuals are most knowledgeable in human behavior, and can best determine if further concern is warranted.

Requests for Access to and Amendments of Education Records

Brief Description: Establishes procedures for making and responding to requests for access to and amendment of education records, consistent with the Family Educational Rights and Privacy Act of 1974 (FERPA).

Making and Responding to Requests for Access to Education Record

Access Request and Review Procedure

- A student should submit a request to review his or her education records in writing to the registrar, dean, chairperson of an academic department, or other official who maintains the records he or she wishes to inspect. The request should identify, to the extent possible, the specific records the student desires to review by type, topic, date or other criteria.

The university official who has custody of the records will assemble the requested records and review them to determine whether they are eligible for access.

- If an education record includes information about more than one student, the student may review only his or her own information in that record. In this situation, the record custodian must redact the record before allowing the student to review it.
- Any questions about whether a record is eligible for review or how to properly redact an education record should be addressed with the Office of the Registrar.
- Before denying a student access to an education record, record custodians must consult with the Registrar, and should document in writing the reason for the denial.
- The record custodian must respond to a request for access to education records within a reasonable period of time, but in no case more than forty-five (45) days after the request has been submitted to the appropriate custodian. If the records are not maintained by the record custodian to whom the request was submitted, the custodian should assist the student in identifying the custodian to whom the request should be addressed. For information about where certain student education records may be located, consult the Office of the Registrar.

CU Anschutz Medical Campus
Campus Box A054
Phone: 303-724-8000
Fax: 303.724.8060
Email: Registrar@cuanschutz.edu

- The record custodian will make arrangements for access and notify the student of the time and place where the records may be inspected.
- If not personally known to the record custodian, the record custodian must verify the student's identity by inspection of photo identification or other appropriate documentation.

Making and Responding to Requests for Amendment of Education Records

Procedure for Amendment of Education Records

- If a student believes information contained in his or her record(s) is inaccurate, misleading or violates privacy rights, a student may ask the university to amend the record(s). If the problem stems from a clerical or other error in processing, the student should contact the record custodian and follow the established process to effect the necessary corrections. Similarly, a student should pursue the grievance and/or appeal process if he or she has a concern about the appropriateness of a grade awarded or other academic determination. This procedure does not apply to students who desire to challenge a grade. Students who wish to challenge a grade should follow the academic grievance policy in their school or college. If the desired correction of processing errors is not accomplished through normal channels, or the requested amendment is not to correct processing errors or address substantive academic decisions, the student should follow the following procedure:
- The record custodian will review the amendment request and any related documentation submitted by the student. The record custodian may request additional information from the student if deemed necessary to make a determination.
- Within a reasonable time after receipt of the written request, the record custodian will decide whether to amend the record as requested.
- If the record custodian grants the student's request, the custodian shall amend the education record and inform the student in writing of the action taken.
- If the record custodian denies the student's request, the custodian shall inform the student in writing of the decision and of his or her right to a hearing on the matter. Additional information about the hearing procedures will be provided to the student when notified of the right to a hearing.

Right to Hearing and Related Procedures

- Within ninety (90) days of the date of the denial of his or her request by the record custodian, a student may request a hearing.
- The Registrar may serve as the hearing officer, or may appoint another individual to serve as hearing officer. The appointed hearing officer shall not have a direct interest in the outcome of the hearing. The hearing officer shall not review any matter regarding the appropriateness of official grades or other such academic determinations.
- The hearing shall be conducted according to the following procedures:
 - The hearing officer shall give notice to all concerned parties of the date, place and time of a hearing reasonably in advance. The hearing should be scheduled within a reasonable period of time following receipt of the petition.
 - The hearing officer shall give the student an opportunity to present evidence relevant to the contested part of the education record. The student may have a representative present at the hearing, but that person cannot participate in the hearing.
 - The hearing officer may receive any evidence and testimony, orally or in writing, relevant to the student's challenge to the record content. The hearing officer shall not be bound by the rules of evidence applicable in courts of law, but may permit the introduction and receipt of evidence he or she determines is relevant.
 - Within a reasonable period of time, the hearing officer shall issue a written decision based solely upon the evidence presented

at the hearing. A copy of the decision, which must include a summary of the pertinent evidence, shall be provided to the student, to the record custodian, and to the Registrar. The decision of the hearing officer shall be the university's final decision.

- If the Registrar acting as hearing officer or an individual appointed by the Registrar to act as hearing officer determines that the information is inaccurate, misleading or otherwise in violation of the student's privacy rights, the Registrar should require the record custodian to make necessary amendments. The record custodian shall inform the student in writing when the amendment has been made.
- If the hearing officer determines that the information is not inaccurate, misleading or otherwise in violation of the student's privacy rights, he or she shall inform the student in writing of the right to place a statement in the record commenting on the contested information in the record and/or stating why he or she disagrees with the decision.
- The university must maintain the statement with the contested part of the record for as long as the record is maintained, and must disclose the statement whenever it discloses the portion of the record to which the statement relates.

Contacts

- Questions about this procedure should be directed to the Office of the Registrar:

CU Anschutz Medical Campus
Campus Box A054
Phone: 303-724-8000
Fax: 303.724.8060
Email: Registrar@cuanschutz.edu

Parental Access to Children's Education Records

At the post secondary level, parents have no inherent rights to inspect a student's education records. The right to inspect is limited solely to the student. Records may be released to the parents only under the following circumstances:

- Through the written consent of the student
- In compliance with a subpoena
- By submission of evidence that the parents declare the student as a dependent on their most recent Federal Income Tax form (IRS Code of 1954, Section 152).
- May disclose education records to a parent under the alcohol and controlled substance exception or in connection with a health and safety emergency under the circumstances set forth in § 99.36 (if the students is under 21 years of age).

Posting of Grades by Faculty

The public posting of grades either by the student's name, institutional student identification number, or any portion of a social security number is a violation of FERPA, whether done via paper source or via electronic means (including the internet).

Instructors and others who post grades should use a system that ensures FERPA requirements are met. This can be done by using code words or randomly assigned numbers that only the instructor and individual students know.

Students' Rights after Ceasing Attendance or Graduation

Students who have ceased attendance or have graduated from an institution of higher education have basically the same FERPA rights as students currently attending the University of Colorado Denver, including the right to:

- Inspect their education records
- Have a hearing to amend an education record, and
- Have their education privacy protected by the institution.
- Have the institution honor the previously established opt-out request.

Once students leave the university they do not have the right to request a privacy code (non-disclosure) be placed on their records.

References for Students by Faculty

FERPA's prohibition on disclosure of personally identifiable information from an education record of a student applies to any kind of non-directory information (e.g., performance in class, grades, attitude, motivation, abilities, background) conveyed in writing, in person, or over the telephone to third-parties.

Although such information is usually conveyed by faculty members at the informal request of the student and is usually positive, the better practice would be to request a written consent form, meeting the FERPA requirements, before providing the information.

Written Consent

Students may release their academic records to their parents, a prospective employer, insurance companies, etc., by providing written consent. The notice of written consent must include the following information:

1. It must specify the records to be released (transcripts, etc.)
2. State the purpose of the disclosure
3. Identify the party or class of parties to whom disclosure may be made, and
4. Be signed and dated by the student

Disposal of Educational Records

Information about individuals should be retained according to state or University records retention schedule. Those responsible for academic information have an obligation to destroy information when conditions under which it was collected no longer prevail.

Any document containing personally identifiable information must be disposed of properly through some means of confidential disposal. If information is needed on confidential disposal, please contact the Office of the Registrar:

CU Anschutz Medical Campus
Campus Box A054
Phone: 303-724-8000
Fax: 303.724.8060
Email: Registrar@cuanschutz.edu

Policy Reference Links

- Title 24, Part 99--Family Educational Rights and Privacy (https://www.ecfr.gov/cgi-bin/text-idx/?SID=4b4094c9e8a435c5e9cf4026588c3ffe&mc=true&tpl=/ecfrbrowse/Title34/34cfr99_main_02.tpl)

- FERPA General Guidance for Students (https://studentprivacy.ed.gov/sites/default/files/resource_document/file/An%20Eligible%20Student%20Guide%20to%20FERPA_0.pdf)

Freedom of Expression and Inquiry

Academic freedom and diverse viewpoints are highly valued at the University of Colorado Anschutz Medical Campus. For students, academic freedom pertains to their course discussion, course assignments, and scholarly work. All members of the University community have the right to free expression as stated in Article 1 (<https://www.cu.edu/regents/law/1/>).E of Regent Law and further elaborated in Regent Policy 1 (<https://www.cu.edu/regents/policy/1/>).D; however this right is distinct from academic freedom.

While faculty have the right to establish classroom procedures to ensure orderly discussion and progress towards the goals of a class, students have the freedom to raise questions and express reasoned opinions on the matters being discussed. Students also have the ability to discuss matters related to their courses with faculty during office hours and take reasoned exception to the views or methods offered in any course of study. Students should be evaluated solely on academic performance, which shall be assessed according to the published requirements established by the instructor or academic unit. Academic freedom does not give either faculty or students the right to disregard the standards of conduct outlines in Regent Laws Article 7 (<https://www.cu.edu/regents/law/7/>).

If students believe their academic freedom rights have been violated, the campus will investigate complaints and remediate confirmed violations.

Also see Laws of the Regents Article 5 (<https://www.cu.edu/regents/law/5/>), Part B.

Honor Code

This campus-wide policy statement on student academic honor and conduct at the University of Colorado Denver | Anschutz Medical Campus was developed in consultation with faculty and student representatives from each health sciences school, and representatives of the campus-wide Faculty Council and Student Senate. It provides general policies for all students on campus, in accordance with the Regents' resolution of March 17, 1988, while at the same time it directs the schools to develop specific procedures to implement the policy in accordance with their unique programs and student populations. While the process for resolving honor code violations may vary from school to school, the elements listed below will remain uniform. The health professions are based on a high degree of trust by the individuals they serve. Students entering the health professions have a particular obligation, therefore, to conduct themselves at all times in a manner that reflects honesty, integrity, and respect for others.

A. Academic Honor and Conduct Code:

Education at the University of Colorado Denver | Anschutz Medical Campus is conducted under the honor system. All students who have entered health professional programs should have developed the qualities of honesty and integrity, and each student should apply these principles to his or her academic and subsequent professional career. All students are also expected to have achieved a level of maturity which is reflected by appropriate conduct at all times.

Although it is not possible to list every situation that violates the University of Colorado Denver | Anschutz Medical Campus academic

honor and conduct code, the following examples will provide a reference point.

- **Academic Honesty** - Students should adhere to the highest standards of academic honesty and integrity. Examples of behavior which violates these standards include: plagiarism (including improper use of web information), cheating illegitimate possession and/or use of examinations, and falsification of official records.
- **Professional Conduct** - As future health professionals, students should also adhere to the highest standards of professionalism. Examples of unprofessional conduct include: misrepresentation of effort, credentials or achievement in either the academic or clinical setting; any action which compromises the quality of patient care; violation of patient confidentiality; and other conduct unbefitting a health professional.
- **Alcohol and Drug Use** - Alcohol and/or drug abuse compromises the student's ability to learn and to practice as a health provider and, thus, is considered unprofessional conduct. Students who have a problem with alcohol and/or drugs should seek assistance from services available on campus. The sale of drugs or the possession of non-prescribed narcotics or other controlled substances is against the law. In order to minimize the potential for alcohol abuse at campus functions, students must work with University and/or their program administration to ensure compliance with the policies and procedures regarding functions where alcohol may be served.
- **Respect for the Rights and Property of Others** - Students should conduct themselves in a manner which recognizes the rights and property of others. Examples of inappropriate behavior include theft, damage to University facilities, harassment or physical assault, and any conduct which threatens the health or safety of others.

The primary responsibility for reporting violations of the student honor and conduct code rests with the individual student who has violated them. However, fellow students and members of the faculty also share in this responsibility.

B. Relationship of Honor and Conduct Code to Local, State, and Federal Laws

The University adheres to all appropriate local, state, and federal laws, and cooperates with law officials in all matters. Any alleged violation of local, state, or federal laws will be referred to the appropriate law enforcement agency, and such laws have precedence over the provisions of this policy.

C. Honor and Conduct Committee

Each school will have a standing Student Honor and Conduct Committee and, as appropriate, individual programs may have standing committees. The composition of the committee will include faculty and student representatives, with the exact composition of the committee to be determined by the dean in consultation with the school's faculty and student governance groups. The primary function of this committee will be to examine alleged violations of the honor and conduct code, and to make recommendations to the dean on these matters as appropriate.

D. Check individual school policies for school-specific procedures.

Student Conduct

"By enrolling as a student in the university, a person shall assume obligations of performance and behavior established by the university relevant to its lawful missions, processes, and functions. As members of the academic community, students have responsibility, equivalent to that

of the faculty, for study, learning, academic integrity, and protecting the university as a forum for the free expression of ideas."

(Laws of the Regents 7B Standards of Conduct)

International Travel Policy for Students

This policy supports education and experiences abroad by balancing the value of participation in activities internationally with the potential risks to the welfare and safety of students. This policy establishes the minimum requirements to mitigate and manage risks associated with university-affiliated international travel by students.

"International" or "abroad" is defined to include U.S. territories as well as any country outside of the United States.

"Student" is defined as any participant in a university-related activity abroad who is not employed by the university as a trip leader. "Student" may include, but is not limited to, an enrolled student, member of a student organization, member of either campus Wellness Center, medical resident, alumnus, or program guest.

"University-related activity abroad" includes, but is not limited to, any activity supported by the university by use of university funds or financial aid; any activity related to academic credit, experiential learning, or service learning; or any activity receiving support from a university employee such as organization, coordination, or supervision of activities abroad.

Policy Statement

The university facilitates student international travel and education abroad to foster interpersonal, academic, and career development, as well as cross-cultural understanding while encouraging sound health, safety, and security measures that minimize risks to the traveler and institution.

Policy 1035: Oversight of University-related International Travel outlines the oversight responsibility of the Office of International Affairs (OIA) "for all international travel taken under the auspices of the University of Colorado Denver | Anschutz Medical Campus," and designates the Office of Global Education (OGE), a unit within the Office of International Affairs, "responsible for direct oversight of all university-related student international travel." Further, it charges the International Risk Management Committee (IRMC) to assist OIA with the execution of its international risk management responsibilities.

As such, the IRMC will assess the health and safety risk profile of a given destination through the utilization of third-party risk resources, government risk rating systems, and global education best practices. This procedure will identify those destinations that do not require travel appeals for student international travel, identify destinations requiring a travel appeal, and identify destinations designated as "do not travel" for student international travel. The Office of Global Education's website will provide details.

Therefore, all students, faculty, or staff involved with individual students or groups of students traveling internationally under the auspices of the university must register with the Office of Global Education. OGE will provide specific guidance, timelines, and processes. For international destinations or programs requiring travel appeals, the process of obtaining formal review and a decision by senior leadership on permissible travel during travel suspensions or too high risk destinations can take several months. Students, and faculty leading student international travel, will be advised by OGE to plan accordingly.

This policy applies to any student traveling internationally under the auspices of the university through the use of funds, group affiliation (e.g., through student organizations registered with and recognized by the Student Life & Campus Community office, community service or service learning groups, faculty-led travel or adventure travel), to fulfill academic requirements, or for other experiences. These experiences include but are not limited to, study, service learning, research, internship, clinical rotation, practicum, capstone project, other experiential learning, or sports.

All classes of students fall under this policy, including but not limited to, non-degree, undergraduate, graduate, doctoral, medical student, and medical resident. This policy does not apply to student international travel for solely personal purposes such as vacation or non-university work-related activity that has no affiliation with the university.

Travel Approvals

The university, in its sole discretion, may deny approval for student international travel due to risk or university policy. In addition, travelers may be required to submit an appeal to travel to locations or participate in programs that pose a specific health, safety, or security concern as indicated by authorities such as the contracted travel assistance provider, the U.S. Department of State (USDOS), the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), non-U.S. government authorities (e.g., Australian or Canadian authorities, or international travel assistance provider), and the University of Colorado Denver | Anschutz Medical Campus authorities.

Revocation, Suspension or Modification of Travel Approvals

When a significant health or safety concern arises (e.g., natural disaster, political disturbance, deteriorating security environment, disease outbreak, etc.), OIA and the IRMC will review student travel currently in progress and make recommendations to senior leadership who will determine if such activity may continue considering the circumstances. The university, in its sole discretion, may withdraw approval for or insist on modifications of international travel at any time. The provost, or the provost's designee, has final decision-making authority on university-related international travel for students.

Additions or Modifications to Approved Trips or Programs

If an approved international travel experience modifies or adds a new activity or academic track that materially changes its risk profile, the applicant must provide an explanation for further review of how any perceived risks will be mitigated. The applicant should consult with the Office of Global Education to determine which parts of the application require additional review.

Program Cancellations

1. If the university cancels a program before departure or while the program is in progress for reasons beyond its control, including but not limited to, political unrest, danger to participants' health or safety, natural disasters, or changes to the risk profile, participants may personally incur financial losses in the form of lost fees and tuition, or additional travel expenses in connection with program cancellation. Students may or may not receive academic credit if a program is canceled.
2. The University of Colorado Denver | Anschutz Medical Campus does not assume responsibility for financial risks associated with participation in a university-related activity abroad, including

cancellation of a program. Students, staff, and faculty are encouraged to consider supplemental insurance options, such as trip insurance, to cover potential personal financial losses if programs or activities are canceled. Supplemental insurance is also helpful if a traveler needs to cancel participation in a program or return early due to unforeseen personal emergencies. Such insurance is not required by the university and must be purchased on an individual basis.

Unaffiliated Guests on Group Travel

The university does not support accompanying unaffiliated travelers on official university programs. The university does not permit unaffiliated travelers to accompany the group on any international programs or activities during the entire duration of the program or activity.

"Unaffiliated travelers" refers to family members, friends, and other individuals not associated with the particular program. Exceptions may be requested through a prescribed appeal process with the IRMC.

Consequences of Violating Policy/Travel in Violation of this Policy

Individual students who have not obtained travel permission (or whose travel program administrators have not obtained travel permission for group travel) will be referred to the Office of Student Conduct and Community Standards and/or other appropriate offices for potential policy violations. Consequences may include, but not be limited to, conduct sanctions; not receiving institutional funds including financial aid, grant funding, or payment of expenses for related international travel activities; repayment of any spent funds; and/or assessment of a fee.

Employees who knowingly facilitate undisclosed or unapproved or non-reviewed university-sponsored student international travel may be subject to discipline under university policies and procedures.

Students and employees who choose to travel in knowing violation of this policy are acting outside the control and responsibility of the university.

Lactation Policy

The University of Colorado Denver | Anschutz Medical Campus ("university") has adopted this policy for students and employees who wish to breastfeed and/or express breastmilk on the CU Denver campus or the CU Anschutz campus.

Policy Statement

1. Lactation on Campus for Students and Employees

- a. The university recognizes that reasonable and appropriate adjustments should be considered and offered for students or employees wishing to lactate in order to optimize performance in the classroom or workplace, as applicable. As a result, the university endeavors to provide time, space and reasonable adjustments to the university's work or educational programs in order to support students and employees who choose to breastfeed and/or express breastmilk.
- b. The university also recognizes that some pregnancy-related conditions may be protected under the Americans with Disabilities Act and amendments ("ADA"), entitling students and employees to request reasonable accommodations.
- c. Students planning to breastfeed and/or express breastmilk should reach out to the Office of Equity to discuss reasonable break times or related requests for curricular adjustments.

d. Employees planning to breastfeed and/or express breastmilk should reach out to their supervisors to discuss reasonable unpaid break time or the use of paid break time (e.g., lunch) for this purpose.

2. Lactation Breaks

- a. Pursuant to state law, the university is required to provide employees reasonable break time to express breastmilk for a child for up to 2 years after the child's birth. The university will provide lactating employees the option of three, 20 minute breaks per workday or two, 30 minute breaks per workday, which includes paid meal breaks.

3. Designated Lactation Spaces

- a. The university currently offers lactation rooms throughout the CU Denver campus and the CU Anschutz campus to assist breastfeeding or lactating parents.
- b. These rooms provide a secure and sanitary area that may be used for breastfeeding or pumping breastmilk and are equipped with an electrical outlet, chair, table for breast pump, nearby access to clean running water, lock from inside and, if a room has a window that needs to be covered in order to address privacy concerns, a window covering will be provided. For large lactation spaces intended to be shared by multiple breastfeeding parents, privacy screens may be provided. In certain spaces designated as lactation lounges, the space is designed to support social interaction by multiple users. Thus, privacy screens are not utilized in such designated lactation lounges.
- c. Individuals expressing breastmilk are expected to make their own arrangements for refrigeration, which includes, but is not limited to, the option to utilize refrigerators otherwise designated for employee or student use, or to bring their own refrigeration device to store breastmilk. Should an employee or student wish to bring their own refrigeration device to campus, they must receive approval from their supervisor or space authority, as applicable. The ability to bring such a personal refrigeration device to campus is subject to the availability of adequate space and power. Even after such approval is obtained, the university assumes no responsibility for the device or its contents. The maximum size of a personal refrigeration device is no larger than a small (20 inch by 20 inch by 20 inch) dormitory type refrigerator. The university is not responsible for the integrity or security of breastmilk stored in any refrigerator on campus and does not guarantee the safety of any storage method used. Students or employees who desire to leave their personal refrigeration devices on campus on an ongoing basis, in the lactation rooms or otherwise, may do so, but at their own risk. Employees and students must provide their own containers for storage.
- d. The university has posted the list and map of available lactation rooms on the CU Denver campus and the CU Anschutz campus online at: <https://www.cu.edu/docs/cu-denveranschutz-campus-lactation-rooms> and <https://www1.ucdenver.edu/offices/equity/support-resources/pregnancy-lactation-2>. The Office of Equity will annually review and update the list, as necessary.
- e. Access to lactation spaces

When existing locations are not accessible from a breastfeeding student's class/study area or employee's work area, or the current demand for existing spaces makes

as-needed pumping challenging, students may contact the Office of Equity to identify a new temporary space, as needed.

4. Whom to Contact

a. Employees or students with questions regarding the university's lactation resources or concerns regarding discrimination based on pregnancy or parenting may contact the university's Office of Equity.

b. If you are a student at CU Denver Campus and need to make an application for reasonable accommodations or need information regarding the ADA, contact the Office of Disability Resources and Services at (303) 315-3510 or disabilityresources@ucdenver.edu or by mail to CB 118 P.O. 173364 Denver, CO 80217-3364.

c. If you are a student at the CU Anschutz Medical Campus and need to make an application for reasonable accommodations or need information regarding the ADA, contact the Office of Disability Access and Inclusion at (303) 724-5640 or disabilityresources@cuanschutz.edu, or by mail at Building 500, Room Q20- EG 305 13001 E. 17th Place, A010 Aurora, CO 80045.

d. If you are an employee and need to make an application for reasonable accommodations or need information regarding the ADA, contact the ADA Coordinator at (303) 315-2700 or HR.ADACoordinator@ucdenver.edu or by mail to P.O. Box 173364, Campus Box A005/130, Denver, CO 80217-3364.

Definitions

1. The terms "breastfeeding person," and "lactating person" are used interchangeably and intended to include any student or employee who expresses breastmilk for the nourishment of their child.
2. The term "employees" includes, but is not limited to, staff, faculty, post-doctoral fellows, contract workers, and residents.
3. The term "students" includes, but is not limited to, all students, including part-time, full-time, degree-seeking, non-degree seeking, undergraduate, or graduate student enrolled at CU Denver or CU Anschutz.

Medical Leave of Absence and Fit to Return

A student with a mental health and/or physical health condition may apply for a voluntary Medical Leave of Absence from the University of Colorado Anschutz Medical Campus. This policy describes the circumstances under which a student may request a Medical Leave of Absence and the procedures the student must follow.

Policy Statement

Students may seek a Medical Leave of Absence only for their own personal mental health and/or physical health circumstances. Students seeking a leave of absence for other reasons should contact their program director or the Office of the Registrar.

Students participating in an international education program may not seek a Medical Leave of Absence for the term in which the student is participating in the international education program.

The Medical Leave of Absence is not intended to shield a student from unsatisfactory progress or any other academic irregularity unrelated to a mental health and/or physical health condition that causes a degree

of functional impairment that warrants a complete withdrawal from academic study for an academic term as provided in this policy.

Students who receive an approved Medical Leave of Absence are eligible for relief from their school or college's time-to-degree requirements, but remain subject to the time-to-degree requirements for any applicable accrediting body.

If a student takes courses for credit at another institution while on a Medical Leave of Absence, the student must comply with the applicable policies for receiving transfer of credit toward a degree from their school or college.

A student who has already received a Medical Leave of Absence during enrollment in an educational program and who has a mental or physical health emergency during a subsequent term may submit a request for an additional Medical Leave of Absence.

The Assistant Vice Chancellor for Student Affairs or their designee, in consultation with the applicable dean at the school or college, and the Medical Director of Student Mental Health or their respective designees, has the discretion to determine whether to grant an additional Medical Leave of Absence.

If CU Anschutz approves a Medical Leave of Absence, the Office of Case Management will notify relevant offices/departments that the student is withdrawing for medical reasons.

A student cannot withdraw a request for a Medical Leave of Absence after CU Anschutz has approved the request.

If the student is unable, due to their mental health and/or physical health condition, to complete an application for a Medical Leave of Absence, at the discretion of the Assistant Vice Chancellor for Student Affairs or their designee, CU Anschutz may accept an email from the student as notice that another individual will complete the application on behalf of the student, provided that the student has executed a FERPA release, as needed, for such individual.

Medical Leave of Absence

1. The student may submit an electronic application to the Office of Case Management for a Medical Leave of Absence for mental health and/or physical health conditions that prevent the student from functioning successfully or safely as a member of the CU Anschutz community. Students should promptly seek care from their treating physician, licensed mental health provider, or other licensed healthcare provider and should request a Medical Leave of Absence as soon as possible.

In exceptional circumstances, students may submit an application for a Medical Leave of Absence after the last day of the term. If submitting an application after the last day of the term, students may be required to complete additional procedures and provide additional documentation at the request of the student's progression body.

2. Along with the application, the student must submit adequate medical documentation from the student's treating physician, licensed mental health provider, or other licensed healthcare provider specifying a mental health and/or physical health condition that causes a degree of functional impairment that warrants a complete withdrawal from all academic activities including, but not limited to, academic study and/or clinical rotations for an academic term. The student and the provider should have a shared understanding of the information being submitted to CU Anschutz on the student's behalf.

CU Anschutz will request documentation from the provider that must include the following:

- Any safety concerns for the student or for others in the CU Anschutz community

- a. The treating physician, licensed mental health provider, or other licensed healthcare provider's professional qualifications and licensure
 - b. Date the student first consulted the provider
 - c. Number of visits with the provider
 - d. Professional opinion regarding the approximate date on which the symptoms first began
 - e. Diagnosis of the mental health and/or physical health condition or statement of symptoms and plan for diagnostic workup
 - f. Impact of the condition on the student's academic activities (including attending classes and completing coursework)
 - g. Identification of the degree of functional impairment(s) that warrants withdrawal from all courses for the term
 - h. Treatment recommendations and estimated length of treatment plan
3. Submission of an application for a Medical Leave of Absence does not guarantee that the requested Medical Leave of Absence will be approved.

Reentry from a Medical Leave of Absence

The student must complete the following steps for the reentry process:

1. Submit a Return from a Medical Leave of Absence application and an academic and transition success plan to the Office of Case Management.
2. Submit medical documentation from the student's treating physician, licensed mental health provider, or other licensed healthcare provider. The student and the provider should have a shared understanding of the information being submitted to CU Anschutz on the student's behalf. CU Anschutz will request documentation from the provider and must include the following:

a. The treating physician, licensed mental health provider, or other licensed healthcare provider's professional qualification and licensure

b. Professional opinion regarding the student's ability to successfully perform academically with a full-time and/or half-time course load at CU Anschutz with or without continued treatment

c. A treatment summary with the following specificity:

- Time span and type of treatment provided to the student during the student's time away from CU Anschutz
- Whether the treatment was concluded (with or without the healthcare provider's approval) or is on-going
- Specific intensive treatment, if any, while on the Medical Leave of Absence
- Demonstrated understanding of the diagnoses and functional impairment that resulted in a Medical Leave of Absence, and clear evidence that the healthcare provider completing the medical documentation for reentry addressed these
- specific issues in the treatment of the student during the Medical Leave of Absence
- If treatment is ongoing, recommended treatment plan during student's return to full-time study
- Any continuing care needs or concerns for the student

The submitted medical documentation will be reviewed by the Medical Director of Student Mental Health or other non-treating clinician. The non-treating clinician may indicate agreement or disagreement with the treating provider's recommendation or request additional follow-up or documentation.

The Assistant Vice Chancellor for Student Affairs or their designee, in consultation with the applicable dean at the school or college, and the Medical Director of Student Mental Health or their designee, has the discretion to determine whether the student has submitted sufficient documentation to support the Return from a Medical Leave of Absence application and approve or deny reentry.

CU Anschutz may establish conditions for the student in the first term after reentry based on the information provided in connection with the Return from a Medical Leave of Absence application. If the student's Return from a Medical Leave of Absence application is approved with conditions, the student must also submit updated medical documentation consistent with the conditions or as otherwise provided in the approval of the Return from a Medical Leave of Absence application.

The student must submit medical documentation and any other information required by the Return from a Medical Leave of Absence application with sufficient time to allow for processing and registration. The student must also comply with all other applicable procedures for returning to CU Anschutz.

If a student seeks to extend their Medical Leave of Absence beyond one year, the student should contact the staff in their specific School/College or Office of Case Management to discuss applicable procedures.

Students may appeal a decision denying a Medical Leave of Absence and/or Reentry to the Assistant Vice Chancellor for Student Affairs or their designee. An appeal will only be considered when the student submits a completed appeal form, available from the Office of Case Management, to the Office of Case Management within five (5) business days of the date on the denial letter. The grounds for appeal are limited to the following:

- The existence of procedural errors so substantial that such errors greatly impacted the decision
- New medical documentation that was not reasonably available at the time of the initial decision.

Students who have concerns regarding a possible violation of CU Anschutz's anti-discrimination policies should contact the Office of Equity.

Protected Class Nondiscrimination Policy

I. INTRODUCTION AND POLICY STATEMENT

At the University of Colorado ("university"), our vision pursuant to regent policy 10.A ("Diversity, Equity, and Inclusion") (<https://www.cu.edu/regents/policy/10/>) is to be a premier, accessible, and transformative public research university that has diverse and inclusive working and learning environments woven into the fabric of our entire organization. Such environments are crucial to promoting academic excellence, most notably outstanding teaching, learning, research, creative work, meaningful community engagement, and culturally responsive healthcare.

This Protected Class Nondiscrimination Policy ("Policy") prohibits discrimination and harassment on the basis of race, color, national origin, sex, age, disability, creed, religion, veteran status, marital status, political affiliation, political philosophy, pregnancy or related conditions, sexual orientation, gender identity and gender expression consistent with Regent Law Article 8.A: Nondiscrimination (<https://www.cu.edu/regents/law/8/>). This Policy is intended to ensure equal access to the academic and professional experiences at the university, defines prohibited conduct and reporting obligations, and provides information regarding campus support services for involved parties.

The university must have an office at each campus with specialized expertise to address allegations of prohibited conduct under this Policy in a manner that safeguards the dignity and rights for all involved. The Equity Offices at each campus implement this Policy and administer related campus procedures.

Reporting options and accommodation information (related to disability, pregnancy, and religion) at The University of Anschutz Medical Campus are located within the Office of Equity (<https://www.ucdenver.edu/offices/equity/resolution-options/>).

Anyone who encounters an issue or seeks guidance related to this Policy should consult with the campus Equity Office. University employees who are Responsible Employees (mandatory reporters) must promptly report allegations of prohibited conduct, as further outlined in the Policy. It is also critical that anyone who may have been the target of, or who has experienced, prohibited conduct in the context of university education programs, activities, or employment, feel free to report their concerns without fear of retaliation.

All members of the university community enjoy freedom of speech as guaranteed by the United States Constitution, Colorado Constitution, and Regent Law, Article 1.E: Freedom of Expression (<https://www.cu.edu/regents/law/1/>). This Policy is intended to protect members of the campus community from prohibited conduct, not to regulate protected speech. While the university may not discipline speakers for protected speech, the university retains an obligation to take other steps as necessary to ensure that no hostile environment based on any protected class persists. The university also recognizes academic freedom, as defined in regent law, articles 5.B (<https://www.cu.edu/regents/law/5/>) and 7.C (<https://www.cu.edu/regents/law/7/>), and this Policy will not be interpreted to prohibit conduct that is legitimately related to course content, teaching methods, research, or scholarship, or the expression of political and academic views of students and faculty.

II. Prohibited Conduct

Discrimination and harassment

This Policy prohibits discrimination and harassment based on protected class (for definitions of protected classes see section II.B). To report information or make a complaint about conduct that may violate this Policy, individuals may contact the Office of Equity (<https://www.ucdenver.edu/offices/equity/resolution-options/>).

Each of the following categories are prohibited and could be charged as potential violations of this Policy in a formal adjudication:

1. Discrimination on the basis of protected class:

- When an individual suffers an adverse consequence on the basis of a protected class. Examples include, but are not limited to, failure to be hired or promoted; denial of admission to an academic program; or failure to provide or implement legally required accommodations (e.g., accommodations approved

by the campus ADA Coordinator, Disability Services Office or other designated office) as related to an individual's disability, pregnancy/pregnancy-related conditions or religion.

2. Harassment on the basis of protected class:

- Unwelcome verbal, written, or physical conduct based on one's protected class that unreasonably interferes with an individual's work or academic performance or creates an intimidating or hostile work or educational environment.
- Hostile environment is a form of harassment. Whether a hostile environment exists is determined by evaluating whether or not an individual experienced unwelcome conduct and whether or not the unwelcome conduct was, from the perspective of a reasonable person in the alleged individual's position, sufficiently severe, persistent, or pervasive that it unreasonably interferes with, limits, or deprives an individual from participating in or benefiting from the campus's education or employment programs and/or activities. Although repeated incidents increase the likelihood that harassment has created a hostile environment, a single or isolated incident of conduct based on protected class may be sufficient.

Discrimination and Harassment – Definitions of Protected Classes

Protected class under this Policy refers to actual or perceived unless otherwise noted below:

1. **Age:** The length of time a person has lived. An employee must be at least 40 years old to fall within the protected category. Students are protected from age discrimination in academic situations like admissions decisions and residence hall assignments, regardless of their age.
2. **Color*:** The pigmentation of one's skin. An individual can make an allegation of color discrimination or color harassment against someone of the same race or color.
3. **Creed*:** All aspects of religious beliefs, observances or practices, as well as sincerely-held moral and ethical beliefs as to what is right and wrong, and/or addresses ultimate ideas or questions regarding the meaning of existence, as well as the beliefs or teachings of a particular religion, church, denomination or sect. A creed does not include political beliefs, association with political beliefs or political interests, or membership in a political party.
4. **Disability:** Physical or mental impairment that substantially limits one or more major life activities of an individual.
5. **Gender:** Sex, gender identity, and gender expression including a person's gender-related self-image, appearance, behavior, expression, or other gender-related characteristic, regardless of the sex assigned to that person at birth.
6. **Gender Expression:** How a person represents or expresses their gender to others through external appearance, characteristics, or behaviors.
7. **Gender Identity:** The internal deeply-held sense of one's gender which may be the same as or different from one's sex assigned at birth.
8. **Marital Status:** A relationship or a spousal status of an individual including, but not limited to, being single, cohabitating, engaged, widowed, married, in a civil union, or legally separated; or a relationship or a spousal status of an individual who has had or is in the process of having a marriage or civil union dissolved or declared invalid.
9. **National Origin or Shared Ancestry*:** A person's (or a person's ancestors') place of origin or the physical, cultural, or linguistic characteristics of an ethnic group.

10. **Political Affiliation:** A person's membership or association with others in commonality of political purpose and support.
11. **Political Philosophy:** A person's belief or endorsement of any system of thought pertaining to public policy or the administration of governmental functions.
12. **Pregnancy or related conditions:** (1) Pregnancy, childbirth, termination of pregnancy or lactation; (2) medical conditions related to pregnancy, childbirth, termination of pregnancy or lactation; or (3) recovery from pregnancy, childbirth, termination of pregnancy, lactation, or related medical conditions.
13. **Race*:** How individuals may self-identify as a certain ethnic and racial category (socio-political constructs) or as multi-racial. All racial categories are protected under this Policy. Race also includes hair texture, hair type, or a protective hairstyle commonly or historically associated with race, such as braids, locs, twists, tight coils or curls, cornrows, Bantu knots, Afros and headwraps.
14. **Religion*:** All aspects of religious observance, belief and practice. A person does not have to be a member or follower of a particular organized religion, sect or faith tradition to have a religion.
15. **Sex:** The labels of "male," "female," and/or "intersex" typically assigned at birth and based on anatomy and biology.
16. **Sexual Orientation:** An individual's physical, romantic, and/or emotional attraction toward people. Examples include, but are not limited to: heterosexual, bisexual, gay, lesbian, pansexual, asexual, queer, demisexual, or questioning.
17. **Veteran Status:** Refers to anyone who serves or who has served in any branch of the United States armed forces, including students in the Reserve Officer Training Corps (ROTC). Volunteers for military duty must be treated the same as those who are ordered to active duty. * The university construes antisemitism, Islamophobia, and caste to be included within the university's current prohibitions on discrimination or harassment, which may be based on the protected classes of race, color, religion, creed, national origin or ancestry. All protected classes listed above encompass intersectional identities.

Related Violations

This Policy prohibits violations related to protected class discrimination and harassment. To report information or make a complaint about conduct that may violate this Policy, individuals may contact the Office of Equity (<https://www.ucdenver.edu/offices/equity/resolution-options/>).

Each of the following actions are violations related to discrimination and harassment, are prohibited, and could be charged as potential violations of this Policy in a formal adjudication:

1. **Failure to Comply with Orders or Sanctions:**
 - Not complying with orders of the Equity Office or other appropriate university officials related to this Policy including, but not limited to, No-Contact Orders, Exclusion Orders, and Orders for Interim Suspension. Members of the university community must abide by and complete sanctions related to prohibited conduct.
2. **Failure to Report:**
 - When (1) the Responsible Employee received information that a member of the university community was subjected to or committed an act of alleged prohibited conduct, and (2) the Responsible Employee intentionally, knowingly, or recklessly disregarded the obligation to report, thus resulting in harm to a member of the university community. A Responsible Employee is defined below in section III.C.2. This provision will be applied in a manner that promotes the reporting of prohibited conduct and avoids disciplinary actions when Responsible Employees conscientiously discharge their reporting obligations.
3. **Interference with Reporting:**
 - Prohibiting or interfering with a Responsible Employee or any other person's reporting to the Equity Office. A Responsible Employee is defined below in section III.C.2.
4. **Providing False or Misleading Information:**
 - When a person knowingly or recklessly provides false or misleading information to an Equity Office in the course of a resolution process. Making a report or providing information in good faith, even if the information reported is not later substantiated, will not constitute a violation of this Policy.
5. **Retaliation:**
 - Adverse educational or employment actions, including direct or indirect intimidation, threats, and harassment, taken against an individual because of their involvement in a complaint of prohibited conduct. An adverse educational or employment action is any conduct that would dissuade a reasonable person from reporting an allegation of, or participating in, an investigation of prohibited conduct.

III. Resources and Reporting

A. Options for Assistance and Reporting Following an Alleged Incident of Prohibited Conduct

When the university receives a report of prohibited conduct against an individual, whether the conduct occurred on or off campus, the campus shall provide the individual with notification of the following, as applicable:

1. Reporting rights and options, including:
 - a. to whom and how to report an alleged offense, including campus authorities and local law enforcement authorities;
 - b. to be assisted by campus authorities in making a report; and
 - c. to decline to notify such authorities.
2. The importance of preserving evidence that may assist in proving a criminal offense occurred or may be helpful in obtaining a protective order;
3. The method by which a person can seek No-Contact Orders, orders of protection, restraining orders, or similar lawful orders issued by a court or other competent authority;
4. Counseling, health, mental health, victim advocacy, legal assistance, visa and immigration assistance, and other services available on campus or in the community; and
5. Options for, and available assistance in, changing transportation and working situations, in addition to any available academic and residential accommodations. This notification shall be made, and accommodations afforded if they are reasonably available, regardless of whether the person who reported experiencing prohibited conduct chooses to participate in any campus investigation or disciplinary proceeding or to report the crime, if any, to law enforcement.

B. Confidential Resources and Privacy

1. **Confidential Employees/Independent Notification Obligations:**
 - The university supports the use of confidential resources for all parties. Employees who are confidential resources are not Responsible Employees who are required to report allegations of prohibited conduct under this Policy. A confidential employee must explain to an individual alleging prohibited conduct (1) their status as a confidential employee for purposes of this Policy and

that they are not responsible employees who report to the Equity Office; (2) how an individual may contact the Equity Office and make a complaint under this Policy; and (3) that the Equity Office may be able to offer and coordinate supportive measures, as well as initiate an informal or formal resolution process. A person who is a confidential resource under this Policy may have an independent obligation to report some forms of criminal conduct to law enforcement officials.

2. Confidential Resources:

- This link provides information on how to contact the university's confidential employees: CU Denver | Anschutz (<https://www.ucdenver.edu/offices/equity/support-resources/>).
- Communications of prohibited conduct to a Responsible Employee are not confidential, and these employees must report prohibited conduct to the Equity Office when it is disclosed to them.

3. Privacy and Information Disclosure:

- The university will not disclose the identity of any individual involved in a complaint of prohibited conduct (parties or witnesses for example) except as may be permitted by prior written consent, required by law, or to carry out an informal or formal resolution or judicial proceeding related to this Policy. This may require sharing information, including identification information, between internal university offices.

4. Requests Not to Proceed and Overriding Factors:

- If an individual has allegedly been subjected to prohibited conduct, but wishes to maintain privacy or requests that no resolution process be pursued nor disciplinary action taken, the Equity Office will explain that the university prohibits retaliation and explain the steps the campus will take to prevent retaliation if the individual participates in a resolution process, and that the campus will take responsive action if it occurs.
- If, having been informed of the campus's prohibition of retaliation and its obligations to prevent and respond to retaliation, the individual allegedly subjected to prohibited conduct would still like to maintain privacy or requests that no investigation be conducted nor disciplinary action taken, the Equity Office will weigh that request against the university's obligation to provide a safe, non-discriminatory environment for all students, faculty, and staff. In making that determination, the Equity Office will consider a range of potentially overriding factors that would cause the campus to commence an investigation or take disciplinary action after an investigation of prohibited conduct occurred.

5. Findings of a Policy Violation:

- The university recognizes that third parties (either employers and/or institutions receiving transferring students) may have a legitimate interest in knowing whether a university employee or student has been found responsible for engaging in prohibited conduct. In the event that, after a grievance process and any rights of appeal have been completed, an employee or student has been found responsible for engaging in prohibited conduct, the university may confirm upon inquiry from a potential employer, or licensing or credentialing agency or institution, that the employee or student has been found responsible for violation of this Policy subject to applicable state and federal laws (e.g., Family Educational Rights and Privacy Act) regarding such disclosures. The university may also confirm upon inquiry that an investigation under this Policy is pending against an employee or student or that an employee or student resigned employment or

withdrew while an investigation under this Policy was pending, again subject to applicable state and federal laws.

C. Reporting Allegations of Prohibited Conduct

1. Purpose of Reporting:

- The university provides mechanisms for members of the university community to report allegations of prohibited conduct. Reporting allows the university to pursue resolution processes when appropriate, and to inform those who have been involved of support services and to facilitate access to those services. Reporting also allows the university to identify institutional risks, increase the effectiveness of its training programs, and identify the need for additional services that will protect the university community from harm. Reporting allegations of prohibited conduct is fundamental to the university's ability to provide campus environments that allows equal access to educational and employment opportunities.

2. Responsible Employees Must Report Prohibited Conduct to the Equity Office:

- Responsible Employees are defined as any employee who: (1) has the authority to hire, promote, discipline, evaluate, grade, formally advise or direct faculty, staff, or students; (2) has the authority to take action to redress prohibited conduct; and/or (3) has been given the duty of reporting incidents of prohibited conduct by the Equity Office. The Equity Office may designate in campus procedures that certain individuals who might otherwise not be considered Responsible Employees are subject to mandatory reporting requirements. Responsible Employees must promptly report allegations of prohibited conduct as defined by the Policy to the Equity Office. A "Failure to Report" as defined by section II.C.2 is considered Prohibited Conduct.
 - Any Responsible Employee who witnesses or receives a written or oral report alleging that a member of the university community has been subjected to or has committed an act of prohibited conduct must promptly report the allegations to the Equity Office. Members of the university community include students, faculty, staff, contractors, patients, visitors to campus, volunteers, regents and employees of affiliated entities. Because the university may have the ability to address or prevent future prohibited conduct, the obligation to report exists independently of whether the individual who was subjected to or accused of prohibited conduct is currently enrolled or employed at the university.
 - The Responsible Employee is required to promptly report to the Equity Office, all known details about the alleged prohibited conduct including:
 - Name(s) of the person allegedly subjected to prohibited conduct;
 - Name(s) of the person allegedly accused of prohibited conduct;
 - Name(s) of any alleged witnesses; and
 - Any other relevant facts, including the date, time, and specific location(s) of the alleged incident.

If the Responsible Employee is unable to provide this information at the time of making an initial report, but later becomes aware of additional information, the Responsible Employee must supplement the prior report.

Responsible Employees employed by university law enforcement are required to report pursuant to this section unless the information is otherwise excluded by state or federal law (e.g., information related to juveniles).

c. In many instances, it may not be immediately apparent whether a person is a member of the university community, whether the alleged prohibited conduct occurred on university property, or whether the alleged prohibited conduct occurred in the course of an education program or activity of the university. Rather than conduct their own inquiries to determine whether these conditions exist, Responsible Employees should report potential prohibited conduct to the Equity Office to allow a preliminary inquiry to occur.

d. Responsible Employees are not required to report information disclosed during an individual's participation as a subject in an Institutional Review Board-approved human subjects research protocol. Institutional Review Boards (IRB) may, in appropriate cases, require researchers to provide reporting information to all subjects of IRB Research.

e. Responsible Employees who receive information related to prohibited conduct in the course of serving in the capacity as ombuds, as designated by the university, are not required to report to the Equity Office. Otherwise, as a confidential employee, in the capacity as an ombuds, an employee must explain to an individual alleging prohibited conduct: (1) their status as a confidential employee for purposes of this Policy and that they are not Responsible Employees who report to the Equity Office; (2) how an individual may contact the Equity Office and make a complaint under this Policy; and (3) that the Equity Office may be able to offer and coordinate supportive measures, as well as initiate an informal or formal resolution process. These Responsible Employees must report alleged prohibited conduct disclosed to them when they are not serving in their capacity as ombuds.

f. Responsible Employees who receive information related to an allegation of prohibited conduct in the course of providing professional services within a privileged relationship, such as healthcare providers or counselors, are not required to report to the Equity Office. As confidential employees, these employees must explain to an individual alleging prohibited conduct (1) their status as a confidential employee for purposes of this Policy and that they are not Responsible Employees who report to the Equity Office; (2) how an individual may contact the Equity Office and make a complaint under this Policy; and (3) that the Equity Office may be able to offer and coordinate supportive measures, as well as initiate an informal or formal resolution process. These Responsible Employees must report allegations of prohibited conduct disclosed to them when they are not providing professional services within a privileged relationship. These Responsible Employees may also have independent professional obligations to report some forms of criminal conduct to law enforcement officials.

g. A Responsible Employee does not satisfy the reporting obligation by reporting allegations of prohibited conduct to a supervisor or university personnel other than the Equity Office.

h. Responsible Employees are not required to report allegations of prohibited conduct to which they have been personally subjected to the Equity Office but are nonetheless encouraged to report.

- All employees who are not confidential employees (see section III.B.1) or Responsible Employees (see section III.C.2) must provide the following information to any person who discloses to them information about prohibited conduct: (1) the contact information of the Equity Office; and (2) information about how to make a complaint of prohibited conduct. When a person discloses a pregnancy or related condition to an employee, that employee must provide that person with the Title IX Coordinator's contact information and inform the person that the Title IX Coordinator can coordinate specific actions to ensure that person's equal access to the university's education programs or activities.
- Contact information for the Title IX Coordinator/Equity Offices and how to make a complaint is listed here: CU Denver | Anschutz (<https://www.ucdenver.edu/offices/equity/resolution-options/>)

4. Employees who are designated Campus Security Authorities (CSAs):

- Employees who have additional obligations under the Clery Act to report certain criminal offenses under the law that occur on university property for statistical purposes. See this link for Clery resources and information: CU Denver | Anschutz (<https://www.cuanschutz.edu/police/clery-act/>)

IV. EQUITY OFFICE AND JURISDICTION

A. Designation and Responsibilities of the Equity Office

The Equity Office is responsible for overseeing complaints of prohibited conduct pursuant to this Policy and for identifying and addressing any patterns or systemic problems that arise during review of those complaints.

For all matters within the scope of this Policy, at a minimum, the Equity Office shall be specifically responsible and have delegated authority from the chancellor or president for implementing this Policy. Subject to the Equity Office's ultimate responsibility and authority, the Equity Office may further delegate responsibility and authority for the following functions:

1. Providing notice of resolution procedures to parties and ensuring that complaints of prohibited conduct are handled appropriately and in a timely manner;
2. Initiating and overseeing adequate, reliable, and impartial resolutions of complaints of prohibited conduct as appropriate and requested by the parties as applicable and ensuring that parties are treated equitably;
3. Evaluating any request for privacy by a person allegedly subjected to prohibited conduct pursuant to section III.B.4 (override provision);
4. Evaluating whether a complaint should be dismissed on jurisdictional bases pursuant to section IV.B;
5. Referring matters for further action or discipline for inappropriate or unprofessional conduct under other applicable policies or procedures even if a prohibited conduct violation is not found. No provision of this Policy shall be construed as a limitation upon the authority of the disciplinary authority, under applicable policies and procedures, to initiate disciplinary action;
6. Offering and coordinating supportive measures for all parties either before or during the resolution process as applicable;
7. Ensuring broad publication of the campus complaint process and procedures, including posting the process and procedures on an appropriate campus website;
8. Creating an annual report documenting: (1) the number of reports or complaints of alleged violations of this Policy; (2) the categories

3. Other Employees:

(e.g., students, faculty, and staff) of parties involved; (3) the number of Policy violations found; (4) the number of appeals taken and the outcomes of those appeals; and (5) examples of sanctions imposed for Policy violations;

9. Reviewing and confirming that the relevant policy statements of the campus Annual Security Report pursuant to the Clery Act are consistent with this Policy and campus complaint process and procedures; 1
10. Ensuring there is ongoing training and education regarding reporting and preventing prohibited conduct for all students, faculty, and staff;
11. Coordinating actions to prevent discrimination and ensure equal access for pregnant students, faculty and staff.
12. Ensuring that investigators and all decision-makers are thoroughly trained;
13. Maintaining records and related documentation of compliance with this Policy including, but not limited to, retaining copies of any training documentation, tracking student and employee training participation, documenting each step of the campus complaint process and procedures, including supportive measures and resolutions; and
14. Ensuring broad dissemination of the statement that the university shall not discriminate on the basis of sex in employment or in its education programs and activities.

B. Equity Office's Jurisdiction to Conduct Preliminary Inquiry and Further Action

1. This Policy applies to all members of the university community, including students, faculty, staff, contractors, patients, volunteers, affiliated entities, regents, and other third parties. Subject to any rights of appeal, any person found responsible for engaging in prohibited conduct as defined in this Policy may be subject to disciplinary action, up to and including expulsion or termination of employment. The university will consider what potential actions should be taken, including contract termination or property exclusion, regarding thirdparty conduct alleged to have violated this Policy, but those options may be limited depending on the circumstances of the affiliation.
2. This Policy applies to conduct that occurs on campus. This Policy also applies to off-campus conduct, including online or electronic conduct, in the following circumstances:
 - a. If the person accused of prohibited conduct is affiliated with the university;
 - b. If the conduct occurred in the context of an employment or education program or activity of the university; or
 - c. In all other cases not falling under (a) or (b), the Equity Office will consider the degree of the university's control over the persons(s) accused of prohibited conduct, the relationship between the parties, the affiliation of the person allegedly subjected to prohibited conduct, and assess the surrounding circumstances of the alleged conduct for the presence of the following factors:
 - i. Targets or causes harm to an individual connected with the university;
 - ii. Threatens violence against the person(s) allegedly subjected to prohibited conduct or others and there is reasonable fear that such further conduct could target or cause harm to someone connected with the university;
 - iii. Is of a violent nature or was frequent or severe;
 - iv. Prior or current similar complaints about the person(s) accused of prohibited conduct or the person(s) has a known

history or record from a prior school indicating a history of violence;

- v. Use of, or threat to use, a weapon, access to or attempts to access weapons, or a history of bringing weapons to the university;
- vi. Multiple persons allegedly subjected to prohibited conduct or persons accused of prohibited conduct.
- vii. The person allegedly subjected to prohibited conduct is a minor;
- viii. Whether the alleged prohibited conduct reveals a pattern of perpetration at a given location or by a particular group; and/or
- ix. Any other signs of predatory behavior.

If the Equity Office determines that at least one of the above factors is present, then the Equity Office may exercise jurisdiction for off-campus conduct that does not fall under (a) or (b) above.

The Equity Office is solely authorized to determine whether this Policy applies to alleged prohibited conduct and whether the university has jurisdiction to take any action pursuant to this Policy.

V. GRIEVANCE PROCESS AND PROCEDURES

Each campus shall establish written grievance procedures providing for prompt and equitable resolution of any allegations of prohibited conduct as follows: CU Denver | Anschutz (<https://www.ucdenver.edu/offices/equity/university-policies-procedures/>)

When an alleged violation of this Policy involves more than one University of Colorado campus, the campus with primary disciplinary authority over the person accused of prohibited conduct shall investigate the complaint pursuant to its applicable complaint process and procedures. The campus responsible for the investigation may request the involvement or cooperation of any other affected campus and should advise appropriate officials of the affected campus of the progress and results of the investigation.

VI. RECORDKEEPING

The university maintains the following records for at least seven years:

- A. For each complaint of prohibited conduct, records documenting the informal or formal resolution process.
- B. For each notification the Equity Office receives of information about conduct that reasonably may constitute prohibited conduct, records documenting the actions the university took to respond promptly and effectively.

See full policy here (Protected Class Nondiscrimination, APS Number 5065 (<https://www.cu.edu/sites/default/files/aps/345143-aps-5065-protected-class-nondiscrimination/aps/5065.pdf>)) or contact the Office of Equity:

The Office of Equity
 Location: Education II North, Room 5221
 Email: Equity@ucdenver.edu
 Phone: 303-315-2567
 Address: 13120 E. 19th Avenue, Room 5221, Campus Box 187, Aurora CO 80045

Sexual Misconduct, Intimate Partner Violence, & Stalking Procedures (in accordance with Title IX)

The **Sexual Misconduct, Intimate Partner Violence, and Stalking** (*Sexual Misconduct Policy*) is designed to ensure equal access to the academic and professional experiences at the University of Colorado. This policy defines prohibited conduct and reporting obligations, as well as campus support services for involved parties.

It is critical to this commitment that anyone who may have been the target of or has experienced sexual misconduct feel free to report their concerns without fear of retaliation.

To foster a climate that encourages prevention and reporting of sexual misconduct, the university will engage in prevention efforts, educate the community, respond to all reports promptly, provide supportive measures when necessary to maintain the safety of the university environment, and recognize the inherent dignity of all individuals involved. The university shall provide fair and equitable processes to investigate and address complaints of sexual misconduct that provide fundamental due process.

Anyone who encounters an issue or seeks guidance related to this policy should consult with the Office of Equity. University employees who are mandatory reporters (**responsible employees**) must promptly report sexual misconduct as further outlined in the policy.

What is Sexual Misconduct?

Sexual misconduct is unwelcome behavior of a sexual nature or abuse in a sexual or dating relationship. It may include forms of sex discrimination. The university prohibits sex-based discrimination and harassment, including discrimination based on sex as defined by Title IX, discrimination based on sex that falls outside of Title IX, and other forms of sexual misconduct as defined by the Sexual Misconduct Policy. Any person who has experienced other forms of protected characteristic discrimination and harassment that does not constitute sexual misconduct should also report it to the campus Office of Equity. The university is committed to providing an environment where all individuals can study and work free from sex discrimination.

Sexual misconduct can occur in any of the following situations:

- Between individuals of the same or different genders;
- Between students, faculty, staff, and/or administrators;
- On and off campus, including, but not limited to the classroom, workplace, field work, internship sites, study abroad, professional conferences, or within any university educational program or activity; and/or
- Through social media, including, but not limited to X, Facebook, Instagram, Snapchat, Tumblr, and dating websites.

Sexual misconduct includes the following:

- Sexual Assault
- Dating Violence
- Domestic Violence
- Sexual Exploitation
- Stalking
- Sexual Harassment

For a link to the full policy on Sexual Misconduct, Intimate Partner Violence, and Stalking, please visit the Office of Equity's website (<https://www.ucdenver.edu/offices/equity/university-policies-procedures/#sexual-misconduct-intimate-partner-violence-and-stalking-policy-1>), or contact their office via the contact information below:

The Office of Equity

Location: Education II North, Room 5221

Email: Equity@ucdenver.edu

Phone: 303-315-2567

Address: 13120 E. 19th Avenue, Room 5221, Campus Box 187, Aurora CO 80045

Smoke-Free and Tobacco-Free Environment

In accordance with our mission, which commits in part to improving the health and well-being of Colorado and the world, the University of Colorado Denver and University of Colorado Anschutz Medical Campus will ensure a smoke-free and tobacco-free environment to protect the health of its faculty, staff, students and visitors at CU Anschutz and CU Denver.

Purpose

In order to promote health and wellness within the University community, it is the policy of CU Denver | CU Anschutz ("the university") that smoking or tobacco use of any kind is prohibited on any property or in any facilities at CU Anschutz and in any owned, leased, or occupied buildings on CU Denver. This policy is consistent with policies already in place for neighboring affiliates at both campuses, including University of Colorado Hospital, Children's Hospital Colorado and the Auraria Higher Education Center

All persons on CU Anschutz are prohibited from smoking products including, but not limited to, cigars, cigarettes, pipes or any device (e.g. e-cigarettes) or material which is lighted or inhaled. Smokeless tobacco products such as chewing tobacco or snuff are also prohibited. Smoking for the purpose of this policy shall include the use of e-cigarettes, electronic vaping devices, personal vaporizers, electronic nicotine delivery systems or such devices which vaporize substances to simulate smoking.

All persons on CU Denver are prohibited from smoking products including, but not limited to, cigars, cigarettes, pipes or any device (e.g. e-cigarettes) or material which is lighted or inhaled in any and all buildings owned, leased, or occupied by CU Denver, or within twenty-five (25) feet of any entrance, passageway, operable window, or ventilation system of any CU Denver owned, leased, or occupied building. Smokeless tobacco products such as chewing tobacco or snuff are also prohibited. Smoking for the purpose of this policy shall include the use of e-cigarettes, electronic vaping devices, personal vaporizers, electronic nicotine delivery systems or such devices which vaporize substances to simulate smoking.

Implementation

This policy will be distributed to the university community, made available on its website, presented during new student, faculty and staff orientation programs, and promoted using signage on the campus.

Individuals observed smoking or using tobacco products on CU Anschutz will be informed of the policy and asked to stop. Any individual observed smoking inside or within twenty-five (25) feet of any CU Denver owned, leased, or occupied building will be informed of the policy and asked to

stop. Continued violation of the policy may result in disciplinary action, according to processes specific to faculty, staff and students.

For information or assistance with smoking cessation resources or implementation of this policy, please call Human Resources at 303-315-2717.

View full policy here: Smoke-Free and Tobacco-Free Environment, Policy Number 3059 (<https://www.ucdenver.edu/docs/librariesprovider284/default-document-library/3000-general-admission/3059---smoke-free-and-tobacco-free-environment.pdf>)

Student Bill of Rights

The University of Colorado Denver | Anschutz Medical Campus subscribes to the Student Bill of Rights as defined in 23-1-125 of the Colorado Revised Statutes (<https://leg.colorado.gov/sites/default/files/images/olls/crs2023-title-23.pdf>). The General Assembly finds that students enrolled in public institutions of higher education and students who are accepted to an institution of higher education have the following rights:

1. Students should be able to complete their associate of arts and associate of science degree programs in no more than sixty credit hours or their baccalaureate programs in no more than one hundred twenty credit hours unless there are additional degree requirements recognized by the commission;
2. A student can sign a two-year or four-year graduation agreement that formalizes a plan for that student to obtain a degree in two or four years, unless there are additional degree requirements recognized by the commission;
3. Students have a right to clear and concise information concerning which courses must be completed successfully to complete their degrees;
4. Students have a right to know which courses are transferable among the state public two-year and four-year institutions of higher education;
5. Students, upon completion of core general education courses, regardless of the delivery method, should have those courses satisfy the core course requirements of all Colorado public institutions of higher education;
6. Students have a right to know if courses from one or more public higher education institutions satisfy the students' degree requirements;
7. A student's credit for the completion of the core requirements and core courses shall not expire for ten years from the date of initial enrollment and shall be transferrable.
8. Students have a right to transparency of the cost of post secondary education programs, including information on fees, associated expenses, and financial aid in the form of scholarships, grants, and loans;
9. Students have the right to seamless transfer of courses in the guaranteed transfer pathway matrix, transparency in the process for transferring credits, a timely response on applications for transferring credits, and transparency in how and why a credit is accepted or rejected by an institution and how and why a credit is or is not applied toward degree requirements;
10. Students have the right to appeal an institution's failure to accept the student's request for transfer credits; and
11. Students have the right to know what work-related experiences or prior learning opportunities are awarded postsecondary academic

credit at the institution in which the student is enrolled, pursuant to section 23-5-145.5.

Student Immunization Requirements and Compliance

This policy addresses immunization requirements for current and newly enrolled students at the University of Colorado Denver | Anschutz Medical Campus. The State of Colorado has established basic immunization requirements for students at institutions of higher education.

The Joint Commission (TJC), using standards established by the Centers for Disease Control (CDC), additionally mandates that all students in health-care professions whose training includes clinical settings and patient contact must present evidence of immunization for or immunity to an expanded list of communicable diseases. This policy describes the process for ensuring and certifying compliance with basic and expanded immunization requirements at the CU Denver and CU Anschutz campuses.

Policy Statements

1. All continuing and newly enrolled CU Denver students (except those in Extended Studies) must comply with the basic immunization requirements as described in this policy. (See #4 for exceptions for online students.)
2. Students enrolled in clinically based programs at CU Anschutz (listed in "Expanded Immunization" section below in #5) must comply with the expanded immunization certification requirements established by TJC and CDC.
3. Students who do not comply with the immunization requirements described in this policy may not be allowed to enroll in succeeding terms and/or be assigned to clinical sites until the requirements are met.
4. Students enrolled exclusively in online courses or programs must meet the immunization requirement or (at their discretion) sign the exemption clause at the bottom of the Certificate of Immunization form. (See provision below regarding quarantines and forfeiture of tuition and fees if classes are being attended on campus.)
5. Students required to meet the basic and expanded immunization requirements may be assessed a fee for immunization management services.
6. Student immunization records are protected information under the Family Educational Rights and Privacy Act (FERPA). Health information contained in some immunization records also may be protected information under the Health Insurance and Portability and Accountability Act (HIPAA). These records must, therefore, be stored and maintained in a secure manner.

Basic Immunization Requirements for Enrolled Students at CU Denver and Non-Clinical Graduate Students at CU Anschutz

1. All regular enrolled students at CU Denver are required to provide the following documentation by the posted due dates (e.g., November 1 if matriculating in summer or fall terms and March 1 if matriculating in spring term). All regular newly enrolled CU Denver students must comply with these basic immunization requirements.
 - a. Signed Meningococcal Disease Information Form

- b. Signed Tuberculosis Screening (Risk Assessment) Form and any additional tests and x-rays required by the health professional who reviews the Tuberculosis Screening form
 - c. Proof of Immunization
 - d. Immunization Form
2. Other degree, non-degree, and certificate students in non-clinical programs at the Anschutz campus may be required to meet the expanded immunization/immunity policy of their program administrators to fulfill student, programmatic, and community health care needs.
 3. **Students born after January 1, 1957** must provide documented proof that they have received **two** rubeola (measles), **two** rubella (German measles), and **two** mumps vaccinations **OR two combination** MMR vaccinations (measles, mumps, and rubella).
 4. **Students born before January 1, 1957** must provide documented proof that they have received **one** rubeola (measles), **one** rubella (German measles), and **one** mumps vaccination **OR one combination** MMR vaccination (measles, mumps, and rubella).
 5. Options for submitting the required proof of immunization or immunity may include: Certificate of Immunization signed by a physician, nurse, or school authority. Copy of medical records from a physician that outlines a student's immunization history. Proof of personal history of measles, mumps, and rubella verified through blood titer tests. Official International "Yellow" Certificate of Immunization.
 6. Hepatitis B and meningitis vaccines are strongly recommended but not required for CU Denver | CU Anschutz students subject to the basic requirements. In the future these or other forms of vaccination may be required along with MMR immunization and TB screening.
 7. Self-identified medical, religious, and personal exemptions to the requirements are allowed by law. Students who submit exemptions on the Certificate of Immunization form are subject to the prevailing state regulations governing quarantines in case of outbreaks and university policies related to forfeiture of tuition and fees.
 8. The management of immunization/immunity requirements and compliance will be carried out by campus-based immunization services or outside contracted agencies (e.g., Health Center at Auraria) in a manner best suited to campus needs and resources.
 9. CU Anschutz students enrolled in non-clinical master's and doctoral Graduate School degree programs are also required to meet the "basic" immunization requirements described above, with the exception of the Meningococcal Disease Information Form, which is recommended but not required.
- chicken pox (varicella), polio, hepatitis B, and diphtheria, tetanus, and pertussis (DTaP or Tdap) and may include emergent ones in the future. Annual tuberculin skin testing also is mandatory for all continuing students enrolled in clinical programs and who have not previously tested positive.
3. Influenza vaccines are strongly recommended annually for all those involved in clinical health care training and delivery. Individual programs may, at their option, require annual influenza vaccinations for their students. The Meningococcal Disease Information Form is recommended but not required.
 4. Options for submitting the required proof of immunization or immunity may include those listed above, but specific requirements may vary by program.
 5. Clinically-based health care professions programs administered at CU Anschutz include: Medicine; Pharmacy (traditional and non-traditional); Dental Medicine (including the international and certificate programs); Nursing; Physical Therapy; Child Health Associate- Physician Assistant; Genetic Counseling (Graduate School), and any other clinically-based programs or courses involving patient contact (e.g., certain practicum courses in Colorado School of Public Health programs).
 6. CU Anschutz school and college programs are responsible for: Updating the Immunization Certification Form when new CDC guidelines are issued; Informing new students of the immunization requirements and distributing the certification form (hard copy or electronic format) in admissions materials; Setting deadlines for submitting the completed forms—typically prior to matriculation but no later than the end of the student's first semester; Reviewing the submitted immunization forms and following up with non-compliant students; Monitoring annual TB testing if required of continuing students.
 7. The management of immunization/immunity requirements and compliance at CU Anschutz will be carried out by individual program staff or a centralized immunization services office or outside contracted reviewer(s) in a manner best suited to program guidelines and campus and program resources.
 8. Students who do not meet posted deadlines for submitting certification forms and completing any other requirements (e.g., annual TB testing) in a timely fashion will not be allowed to register in their first and/or subsequent term and/or be assigned to clinical settings and responsibilities until the required information has been submitted. A penalty fee may be assessed for processing health holds.
 9. Each school or college program with students assigned to clinical settings will determine and monitor if and when new or continuing students need other medical tests, procedures, or equipment to meet compliance requirements related to their training (e.g., annual TB tests, CPR, TB mask fit, etc.). Unless otherwise arranged, students are responsible for obtaining and paying for those medical services not covered by their insurance plans.
 10. Clinical training program students in all years of their studies are responsible for complying with immunization regulations and supplying (if requested) to affiliated health care facilities any records of their physical examinations, immunization status, and other medical tests and other forms of required documentation (related to, for instance OSHA, HIPAA, and TJC requirements).

Expanded Immunization Requirements for Graduate and Health Professions Students Enrolled in Clinically Based Programs at CU Anschutz

1. All students entering clinically-based health care training programs at CU Anschutz have been and will continue to be required to submit documented proof of TB testing and immunization for or immunity to an expanded list of infectious diseases prior to matriculation and the start of their first term. (NOTE: The TB Screening / Risk Assessment Form is not required in addition to the required testing.)
2. The diseases for which immunization or immunity must be documented are described in guidelines issued and periodically revised by the CDC and mandated prior to patient contact by TJC. Diseases covered have included measles, mumps, and rubella (MMR),

Student Right to Know and Disclosure Information

As a prospective or continuing student at the University of Colorado Denver | Anschutz Medical Campus you have a right to certain information that the university is required by law to provide. Much of that information is safety related or financial in nature, but other broad categories are included such as graduation rates and the various costs associated with attending CU Denver | Anschutz.

Current federal regulations require that institutions of higher education disclose such information and make it readily available to current and prospective students. The Higher Education Opportunity Act of 2008 requires institutions to provide a list of the information to which students are entitled with instructions on who to contact to obtain more information.

Please review your respective campus Student Right to Know webpage for more information.

Denver Campus Student Right to Know website: <https://www.ucdenver.edu/student/records/policies/right-to-know> (<https://www.ucdenver.edu/student/records/policies/right-to-know/>)

Anschutz Medical Campus Student Right to Know website: <https://www.cuanschutz.edu/student/resources/right-to-know> (<https://www.cuanschutz.edu/student/resources/right-to-know/>)

Admissions

Admissions

Our diverse array of health sciences programs foster collaboration and interdisciplinary study, graduating students with the skills needed to thrive – and lead – in their chosen field.

Whether you are beginning your journey in healthcare or continuing your medical education, you'll be mentored by the best in their fields and given access to hands-on learning opportunities beyond the classroom, on a campus powered by prolific research and innovation.

To learn more, explore your school or college of interest below.

Health Sciences Programs

The University of Colorado Anschutz Medical Campus is home to six professional schools offering 40+ degree programs:

- School of Medicine (p. 280)
- College of Nursing (p. 83)
- Skaggs School of Pharmacy and Pharmaceutical Sciences (p. 410)
- School of Dental Medicine (p. 253)
- Colorado School of Public Health (p. 123)
- Graduate School (p. 168)

Non-Degree Admission

A non-degree student is defined as any student who has not been formally admitted to an undergraduate, graduate, or professional degree program at the University. Non-degree (except those admitted to a formal certificate program) students may apply and register on the dates specified by the respective school, college, or program. In order to be considered for a seat in a class, all non-degree students must submit a Course Permission form signed by the teaching faculty.

Non-degree students at CU Anschutz may register in one of the three schools/colleges depending on the course they wish to take. It is important to follow the correct instructions and complete the appropriate application for the desired non-degree courses. **Students must apply directly through the school/college offering the desired course(s), in accordance with that school/college's application deadlines.**

- College of Nursing Non-Degree Information (<https://nursing.cuanschutz.edu/academics/nondegree-programs/>)
 - Nursing coursework only
- Colorado School of Public Health Non-Degree Information (<https://coloradosph.cuanschutz.edu/education/degrees-and-programs/non-degree-programs/>)
 - Biostatistics or Epidemiology
- Graduate School Basic Sciences Non-Degree Information (<https://graduateschool.cuanschutz.edu/admissions/non-degree-application-for-cu-anschutz/>)
 - Biomedical Basic Sciences, Toxicology, or Pharmaceutical Sciences

Enrollment Deposit

A tuition deposit may be required of each student entering a school or program at the Anschutz Medical Campus. This deposit reserves a position in the class. This deposit will be applied to tuition and fees for the first term of attendance at the Anschutz Medical Campus. The deposit amount varies by school or college as does the deposit due date. There are some programs that require non-refundable enrollment

deposits. To learn about the tuition deposit refund policy and procedures, please contact your School or College.

International Admissions

Director of International Enrollment Strategy and Admissions: Mary Margaret Moore

Physical Address:

Student Commons Building, Suite 1119
1201 Larimer Street, Denver, CO 80204

Mailing Address:

Campus Box A005
PO Box 173364
Denver, CO 80217-3364

Telephone: +1 (303) 315-2382

Email: [intl admissions@ucdenver.edu](mailto:intladmissions@ucdenver.edu)

Website: <http://internationaladmissions.ucdenver.edu> (<http://internationaladmissions.ucdenver.edu/>)

Overview

CU Denver International Admissions facilitates the evaluation of international academic credentials for international graduate applicants, as well as US citizens, permanent residents, and other applicants who have studied outside the United States before studying at CU Denver. We also manage the English language proficiency policy for international graduate applicants.

This page contains information for international applicants to graduate programs. For information about applying to an undergraduate program as an international student, please visit this page (<http://catalog.ucdenver.edu/cu-denver/undergraduate/admissions/international-admissions/>).

Application for International Graduate Students

International Credential Evaluation

Applicants to graduate degree programs and certificates on the Anschutz Medical Campus with academic background outside the United States must provide an international credential evaluation report from Educational Credential Evaluators, Inc. (ECE (<https://www.ece.org/>)) or World Education Services (WES (<https://www.wes.org/>)). Visit the International Admissions graduate application information page (<https://www.ucdenver.edu/international-admissions/apply-for-admission/graduate/>) for more details.

Health Sciences Programs

Please contact the applicable college/graduate department below for specific admission requirements and deadlines:

- School of Medicine (p. 280)
- College of Nursing (p. 83)
- Skaggs School of Pharmacy and Pharmaceutical Sciences (p. 410)
- School of Dental Medicine (p. 253)
- Colorado School of Public Health (p. 123)
- Graduate School (p. 168)

Non-degree admission

A non-degree student is defined as any student who has not been formally admitted to an undergraduate, graduate, or professional degree program at the University. Non-degree (except those admitted to a formal certificate program) students may apply and register on the dates specified below.

Graduate Basic Sciences and Public Health courses: Application is available on the web at <http://www.ucdenver.edu/admissions/apply/Pages/apply.aspx>. Once you arrive at the website, select "Non-Degree Graduate Students."

- International non-degree/certificate/CPE applicants must provide Proof of English Language Proficiency (<https://www.ucdenver.edu/international-admissions/apply-for-admission/graduate/>). If you have any questions regarding the ELP requirement, please contact International Admissions at [intladdmissions@ucdenver.edu](mailto:intladmissions@ucdenver.edu).

Immigration Process

Immigration Process

International Student & Scholar Services (ISSS) (<https://www.ucdenver.edu/services/international-student-and-scholar-services/>) handles the immigration process for international students. ISSS will issue an immigration document (Form I-20 or Form DS-2019) to applicable students who will study in an F-1 or J-1 status while enrolled at the university.

Your admitted program/department is responsible for notifying ISSS that an admitted student needs an immigration document.

The basic process will be:

1. Admitting Department/Program notifies ISSS that an admitted student needs an immigration document.
2. ISSS will email the student the steps to begin the Immigration Creation Document Request (IDCR).
3. Student completes the Immigration Creation Document Request (IDCR).

You will be asked to provide the following information and documentation:

- Proof of Financial Support
 - Scholarships/assistantships
 - Personal bank statements
 - Family or other financial support
- Location inside and/or outside the U.S.
- Current Immigration Documentation
 - Passport
 - Current VISA (if applicable)
 - I-20/DS-2019 (if applicable)
 - Other Immigration documents

4. I-20 or DS-2019 will be issued within 10 business days of submitting all required documents and forms for the Immigration Creation Document Request (IDCR).

Please visit the ISSS webpage (<https://www.ucdenver.edu/services/international-student-and-scholar-services/students/pre-arrival/>) for more

information on Pre-Arrival, Arrival at CU Denver, I-20/DS-2019 Timeline, and more.

Proof of English Language Proficiency

Proof of English Language Proficiency

International applicants to CU Anschutz must provide proof of English language proficiency (ELP) in order to be considered for full admission. Some graduate programs will consider international applicants for conditional admission if they apply without adequate proof of ELP. Contact International Admissions if you have questions about ELP or conditional admission.

You may meet the ELP requirement via any of the options listed below.

1. Citizenship Exemption

International applicants holding citizenship from the following countries do not need to prove their English language proficiency for admission to CU Denver. This list is based on the United Kingdom government's list of countries (<https://www.gov.uk/student-visa/knowledge-of-english/>) exempt from proving English ability when applying for a UK student visa.

- Antigua & Barbuda
- Australia
- The Bahamas
- Barbados
- Belize
- Canada
- Dominica
- Grenada
- Guyana
- Ireland
- Jamaica
- Malta
- New Zealand
- Saint Kitts & Nevis
- Saint Vincent & the Grenadines
- Trinidad & Tobago
- United Kingdom

2. ESL Academy

International applicants may meet the English language proficiency requirement for any program of study at CU Anschutz by successfully completing every class in level 5 at CU Denver's ESL Academy.

3. English Language Proficiency Tests

CU Anschutz accepts the following tests as proof of English language proficiency.

Test	TOEFL iBT	IELTS Academic	PTE Academic	Duolingo English Test
Overall Score	79	6.5	58	105
Subscores				
- Reading	8	5.5	42	Literacy: 85
- Listening	7	5.5	42	Conversation: 85

- Speaking	18	5.5	42	Comprehension: 85
- Writing	16	5.5	42	Production: 85

Notes:

- The scores listed above are the university minimum requirements. Some graduate programs require higher scores for admission. Please visit the website for your program of interest for more information.
- CU Denver's TOEFL code is 4875. For all other tests, please search for or choose "University of Colorado Denver."
- CU Denver accepts TOEFL MyBest scores and superscored IELTS scores.

4. Coursework Completion

International applicants who have completed the following coursework will be considered to have met the English language proficiency requirement.

- The applicant has earned a bachelor degree in the United States; or has earned a post-secondary qualification, comparable to a US bachelor degree, in one of the exempt countries listed above; or has earned such a qualification at an institution accredited by an exempt country but located in a non-exempt country, or
- The applicant has completed 12 or more semester hours of coursework in a master or doctoral degree program in the United States with an overall GPA of 3.0/4.0 or higher; or has completed a comparable amount of graduate coursework with a comparable GPA in one of the exempt countries listed above; or has completed such coursework at an institution accredited by an exempt country but located in a non-exempt country.

Financial Information

Earning a degree is one of the most important investment decisions a student can make, and understanding the cost of is an important factor in the decision process. The Bursar's Office and Financial Aid & Scholarships Office are available to help prospective and current students in understanding the financial impact of their education.

There are many tools available to help you pay for your education - from student loans with lower interest rates that get paid back, to grants and scholarships that don't, to work study and student employment to help you earn funds.

Quick Guide

Not sure of the difference between the student finance offices? Here's a quick guide to finding what you need.

Bursar

- Application Fees Payments
- College Opportunity Fund
- Departmental Deposit Transactions
- Tuition and Fee Payments
- Refunds and Direct Deposits
- Student Account Reconciliation
- Third-Party Billing
- Student Balance Outreach
- Past Due Tuition Collection
- Tax Offsets
- Perkins and Institutional Loan Servicing

Financial Aid & Scholarships

- How to apply for financial aid
- Free Application for Federal Student Aid (FAFSA) <https://studentaid.gov/>
- Work-study and student employment opportunities
- Grant and student loan information
- Special circumstances, academic progress or financial hardship appeals
- Scholarships Information

Contact Information

CU Anschutz Bursar's Office Contact Information

Bursar@ucdenver.edu (bursar@ucdenver.edu)
303-315-1800 (Main)
303-315-1805 (Fax)

Physical Location

Education II North | Suite 3120A
Office Hours: 8:00am-5:00pm

Mailing address

University of Colorado Denver | Anschutz Medical Campus
Bursar's Office
Mail Stop A098
13120 E. 19th Avenue, Room 3120A
Aurora, CO 80045

Express MAILING ADDRESS

University of Colorado Denver | Anschutz Medical Campus

Bursar's Office
Mail Center (C/O Bursar's Office A098)
1945 N. Wheeling Street
Aurora, CO 80045

Past Due accounts

bursar@ucdenver.edu
Phone: 303-315-1800

Tax Offset

collections@ucdenver.edu

Third Party Billing

thirdpartybilling@ucdenver.edu

Perkins and Institutional Loan Inquiries

collections@ucdenver.edu

CU Anschutz Financial Aid & Scholarships Office Contact Information

FinAid@CUAnschutz.edu
Phone: 303-724-8039

Advising Hours

9:00 am - 1:00 pm (Monday thru Friday)
Call or email us to schedule an appointment.

Physical Location

Education II North | Student Services Suite (3rd Floor)

Mailing Address

University of Colorado Anschutz Medical Campus
Financial Aid & Scholarships Office
Mail Stop A088, Education 2 North
13120 E. 19th Avenue
Aurora, CO 80045

Overnight Packages

CU Anschutz Medical Campus
Financial Aid & Scholarships Office
Room 3123 (Student Services Suite)
University of Colorado Anschutz Medical Campus
13120 E. 19th Avenue, Box A-088
Aurora, CO 80045

TIP: Providing a tracking number will aid in timely delivery of packages.

Student Employment

StudentEmployment@ucdenver.edu
Phone: 303-315-1842

Medical Students

Inquires regarding financial aid may be directed to the Financial Aid and Scholarships office.
FinAid@CUAnschutz.edu
Phone: 303-724-8039

Scholarship Notification

Students should notify Scholarships@CUAnschutz.edu if they are receiving a scholarship from a donor (source) from outside of the university. Scholarship checks should be made payable to The Regents of the University of Colorado. Mail scholarship checks to the Mailing Address listed above.

Tuition and Fees

Tuition and Fees

For specifics on Tuition Deposits/Enrollment Deposits, please see Enrollment Deposit under the Admissions (p. 55) section of this catalog.

Tuition and Fee Regulations

All tuition and fee rates are established by the Board of Regents, the governing body of the University of Colorado, in accordance with legislation enacted annually by the Colorado General Assembly. The Regents set tuition and fees rates at a budget retreat each spring for the coming fall, spring and summer terms, but reserve the right to change rates at any time. Rates for the current year are available online to assist prospective students in anticipating costs. Please refer to the website (<https://www.cuanschutz.edu/student-finances/tuition-fees/>) for current rates.

Tuition for Courses Taken for No Credit

Tuition for courses taken for no credit (NC) is the same as for courses taken for credit.

Fractional Credit

Any enrollment that totals less than one hour will be assessed at one credit hour for tuition and fee charges. Any total enrollment that is greater than one credit hour will be assessed based on the actual credit hours of the course. For example, enrollment in a course of .5 credit hours will be assessed at the one (1) credit hour rate. Enrollment in a course or courses that equal 2.5 credit hours will be assessed at 2.5 times the credit hour rate.

Drop/Add Tuition Adjustment

A complete adjustment of tuition and fees will be made through the Census Date of each term. No refunds for any charges will be made for withdrawing from courses after Census Date. Students who dropped a class within the term but who were still charged for that class can contact their school's Admissions/Student Affairs Office to file a formal appeal. If their respective school determines that the circumstances justify relief from the tuition charges, the school will work with the Registrar's Office. *Please note that dropping all classes for a term is considered a complete withdrawal, whether or not the student officially withdraws from the University.*

Late Registration Penalty

A late registration penalty will be charged to students who are authorized to register after their regular registration period. The late registration penalty is \$60.

Matriculation Fee

There is a one-time non-refundable matriculation fee of \$140.00 for any student new to the University of Colorado Denver | Anschutz Medical Campus. This is assessed during the first semester as a degree-seeking student in an Anschutz Medical Campus program.

COF - Undergraduate College Opportunity Fund

The College Opportunity Fund (COF), created by the Colorado Legislature, provides a stipend to eligible undergraduate students paying in-state tuition. The stipend pays a portion of your total in-state tuition for eligible undergraduate students who attend a public Colorado institution or a

participating private institution. Eligible undergraduate students must be admitted and enrolled at a participating institution to use the stipend for eligible undergraduate classes. It isn't considered financial aid and doesn't figure into any financial aid packages offered by the college or university. The stipend pays a portion of your total in-state tuition and is paid directly to your institution on a per-credit-hour basis. This means that you will not receive a check in the amount of the COF, rather, you will see a deduction on your tuition bill.

The stipend is paid to the institution on a per-credit-hour basis, and the credit-hour amount is set annually by the General Assembly. Please check the official state <https://cof.college-assist.org/> website for the current amount. For further information, go to: <https://content.cu.edu/ums/cof/faq.html>.

Tuition Classification (Residency) Residency Requirements

The requirements for establishing residency for tuition purposes are defined by Colorado law. See Colorado Revised Statutes 23-7-101 et. seq (<https://cdhe.colorado.gov/students/preparing-for-college/residency-requirements/colorado-residency-statutes/>).

The statutes require that a qualified individual must be domiciled in Colorado twelve (12) consecutive months immediately preceding the term for which resident status is claimed.

An individual is "qualified (<https://higher.ed.colorado.gov/students/preparing-for-college/residency-requirements/qualified-persons/>)" by virtue of adulthood and emancipation at age 22, marriage, or enrollment in a post-baccalaureate graduate or professional degree program. Once emancipation is established, the domicile period (12 months) may begin. An unemancipated minor is qualified through the residency of his or her parent(s) or legal guardian(s).

Initial tuition classification at the University of Colorado Anschutz Medical Campus is determined based on information provided through the Initial Verification of Colorado Residency form. This form is provided by individual school or program admissions offices. Only students who are admitted to a program at the University of Colorado Anschutz Medical Campus are eligible to complete this form.

After completing the form, students are initially classified as Resident, Nonresident, or Under Review. Students in Under Review status may receive follow-up communication from the Registrar's Office requesting further information or supporting documentation to verify domicile status. Any questions regarding the tuition classification process or residency status may be sent via email to TuitionClassification@CUAnschutz.edu.

Emancipation

A person must be legally emancipated before he or she is "qualified (<https://higher.ed.colorado.gov/students/preparing-for-college/residency-requirements/qualified-persons/>)" to establish a domicile separate from the domicile of one's parents.

Emancipation for tuition purposes takes place automatically when a person turns 22 years of age, or marries, or commences a post-baccalaureate degree-granting program. Once emancipated, the "clock" begins for demonstrating the establishment of domicile (physical presence and intent, demonstrated through legal connections) and the student must wait 12 months to become eligible for resident tuition.

A person who is unmarried and under 22 years of age at the beginning of the one year waiting period and who wishes to claim "emancipated minor" status must prove that he/she is completely self-supporting and financially independent of his/her parent(s) or legal guardian(s), as well as any other familial financial support.

The following constitutes evidence of emancipation; however, no singular criterion, taken alone, can be considered conclusive evidence of emancipation:

- Affidavit from parent(s) or legal guardian(s) stating relinquishment of any claim or right to the care, custody, and earnings of the minor, as well as of the duty to support the minor, with documentation of the fact that the minor has not been claimed as a tax deduction on income tax returns. (If a minor claims emancipation as of August 1 of a given year, and the parents have supported the minor from January 1 to August 1, the minor may be claimed for that given year, since the parents provided more than half of the support of the minor for that year.) Emancipation under these circumstances is the act of the parent and not of the child. If there is a duty to support the minor, as, for instance, a court order in a divorce decree, there is no emancipation.
- Lack of any financial support provided by the parents or other family members (including trust funds), coupled with proof that the minor can independently meet all of his or her own expenses, including the cost of education.
- Entry into military service.
- Marriage.

Unemancipated minors may qualify for resident tuition only when their parent(s) or legal guardian(s) are domiciled in Colorado. An unemancipated child of divorced or separated parents can be immediately classified as in-state if either parent has been domiciled in Colorado the requisite period of time, regardless of which parent was granted custody or duty to support the minor by court decree. The parent in this instance is always the one to complete the Petition for Resident Tuition Classification, based on the parent's domicile and connections with the state.

Establishing Domicile

An individual must have been domiciled in Colorado for a minimum of one year (12 months) before he or she can be determined to be a Colorado resident for tuition purposes. A domicile is a person's true, fixed and permanent home. Having a domicile in Colorado involves more than mere physical presence in the state. A person may have several places of residence but can have only one true domicile at any given time.

In order to establish domicile for tuition classification purposes, there must be:

1. physical presence for at least 12 months within the state of Colorado
AND
2. demonstrated intent to make Colorado one's permanent home.

Intent is demonstrated by several kinds of connections (i.e. legal connections) with the state dated one year prior to the beginning of classes. Pursuant to Colorado law, the legal ties below may be considered. Incoming nonresident students are encouraged to review information under "Preparation for Petitioning to Become a Colorado Resident."

Examples of Colorado Legal Ties:

- Payment of Colorado state individual income tax
- State of Colorado driver's license or state of Colorado ID, established for a minimum of 12 months
- State of Colorado voter registration, established for a minimum of 12 months
- Vehicle registration in Colorado, established for a minimum of 12 months
- Graduation from a Colorado high school
- Continued residence in the state of Colorado during periods when not enrolled as a student or during periods between academic sessions
- Employment in Colorado (other than that provided to students on a temporary basis by CU or other temporary employment)
- Acceptance of future permanent employment in the state of Colorado
- Ownership of residential real property in Colorado
- Any other factor particular to the individual that tends to establish the necessary intent to make Colorado a permanent home

NOTE: No single factor or combination of these factors may be considered conclusive evidence of domicile.

For School of Medicine and School of Dental Medicine applicants there is a different reference date for residency determination. It is the date of selection for admission. The date of selection is the date by which students must have established at least one year of Colorado domicile. The date of selection is applied during the same year the student intends to matriculate. The date of selection for the School of Medicine & School of Dental Medicine is July 1st. More information on unique legislation governing residency for the School of Medicine and Dental Medicine is available here (p. 63).

Preparation for Petitioning to Become a Colorado Resident

Steps to take at least 12 months in advance of the first day of the term in which a student wishes to qualify as a Colorado resident for tuition classification purposes include the items listed below. It is strongly recommended that students retain any/all copies of their efforts, including appointment confirmations with government offices or other entities, as demonstration of their timely efforts to establish Colorado domicile.

1. Retain lease and rent receipts if the home is rented. Homeowners should be prepared to provide paperwork and warranty deed. Proof of contract date and closing date are required. These documents are required with the petition to demonstrate at least 12 months of continuous physical presence.
2. Obtain a Colorado driver's license (or Colorado ID, for non-driving students) immediately upon relocation to Colorado. Waiting to do so because the license from a prior state has not expired (or other factors within a student's control) will negatively impact Colorado domicile status.
3. Register to vote in Colorado (often completed through the Department of Motor Vehicles when obtaining a license; also available via the Colorado Secretary of State website (<https://www.coloradosos.gov/voter/pages/pub/home.xhtml/>)).
4. Transfer any/all vehicle registration(s) held solely in the student's name to Colorado. Waiting until a prior (non-Colorado) registration has expired, or for a change in financial circumstance to occur (or other factors within a student's control) will negatively impact Colorado domicile status. Students are encouraged to retain appointment confirmations as evidence toward establishing a domicile timeline.

5. File Colorado Income Tax returns as a resident or part-year resident of Colorado, and retain pay advices reflecting Colorado income tax withholdings.
6. Plan to file a Petition for Resident Tuition classification in accordance with the dates/deadlines published on the Registrar's Office website (<https://www.cuanschutz.edu/registrar/residency/current-students/>).

Permanent, full-time, off-campus employment and payment of Colorado State income taxes are considered highly persuasive in the petition process. Student employment or temporary work is not considered as persuasive. It is the actual official acceptance of employment that forms the connection with the state. Income earned in another state by a resident of Colorado is taxable in Colorado.

ANY connections maintained with any other state during the 12-month period for establishing domicile is considered evidence of non-domicile in Colorado, and negative intent to make Colorado one's permanent home.

Other factors that may be helpful in the petition process include:

- Continuous physical presence in Colorado during periods when not enrolled or during periods between academic sessions
- Obtaining professional licensure or certification in the State of Colorado

It is the student's responsibility to be fully informed of the laws of Colorado that govern any of the "connections" made in establishing domicile, including vehicle ownership and operation, voter registration, payment of income tax, property ownership, etc. Noncompliance with these laws establishes a negative presumption of intent to make Colorado one's permanent home and will be weighed against any affirmative evidence of Colorado domicile.

Evidence Indicating Domicile Outside of Colorado

Indicators that the student is not a Colorado resident include (but are not limited to):

- Receipt of WICHE (PSEP, WRGP, or WUE) funding
- Failure to pay Colorado State income tax
- Filing a nonresident Colorado tax return
- Failure to comply with any law imposing a mandatory duty on a permanent resident of Colorado such as failure to register a vehicle or obtain a driver's license within the time period required by law
- Return to a former state of residence for any period of time during summer or other periods of time when not attending classes
- Maintenance of a home in another state
- Prolonged absence from Colorado, except for military or civilian government service or temporary absences required by an employer
- Voting or registering to vote in another state
- Applying for a loan or receiving college funding from another state where domicile in that state is a condition of the funding

Exceptions and Special Circumstances

ASSET/One Year Colorado High School

To qualify for resident status under this exception, students identified as U.S. citizens or permanent U.S. residents (green card holders) must:

- Attend a Colorado high school for at least one year preceding the date of graduation
- Graduate from a Colorado high school or earn a Colorado GED

- Reside in Colorado for at least 12 consecutive months prior to enrolling at the institution

A student who does not have lawful immigration status (including DACA status) must:

- Attend a Colorado high school for at least one year preceding the date of graduation
- Graduate from a Colorado high school or earn a Colorado GED
- Reside in Colorado for at least 12 consecutive months prior to enrolling at the institution
- Apply for the College Opportunity Fund (COF) and submit the supplemental COF affidavit indicating they do not have lawful immigration status, but they have applied for lawful presence or will apply as soon as they are eligible.

Four-Year Rule

Students whose parents maintain a Colorado domicile for four years and then establish domicile elsewhere, will remain eligible for in-state tuition if:

a) The parents leave Colorado after the student completes his or her junior year of high school and if the student enrolls at a Colorado public college or university within three years and six months after the parents leave Colorado. The student need not remain in Colorado when the parents leave or be emancipated from the parents.

OR

b) The student maintains continuous Colorado domicile. The student need not be emancipated. (This provision generally will be met if the student continues to reside in Colorado after the parents leave or if the student resides outside the state only temporarily [for example, to attend college or for military service] while maintaining Colorado domiciliary connections such as voter registration and income tax filing).

Members of American Indian Tribes with Historical Ties to Colorado

Under the Colorado American Indian Tribes In-State Tuition Act (effective Fall 2021), a student who would not otherwise qualify for in-state tuition and who is a registered member of one of the federally recognized American Indian tribes with historical ties to Colorado, as designated by the Colorado Commission of Indian Affairs in partnership with History Colorado, is eligible to be classified as an in-state student for tuition purposes.

A full list of eligible tribes and documentation required is available on the the Office of the Registrar's website (<https://www.cuanschutz.edu/registrar/residency/future-students/#ac-members-of-american-indian-tribes-with-historical-ties-to-colorado-2>).

Military Service

MILITARY EXCEPTION

Students should consult with Veteran and Military Student Services (VMSS) for more information regarding current legislation and necessary documentation. Current information is also available at the VMSS web resource page on residency at: <https://www.cuanschutz.edu/veterans/benefits#Residency> (<https://www.cuanschutz.edu/veterans/benefits/#Residency>).

MILITARY MEMBERS DOMICILED IN COLORADO

To retain domicile during an absence from Colorado due to military orders, military members must maintain Colorado as their state of legal residence for tax purposes, and voters must maintain voter registration.

Military members may retain legal residency in their original state, or they may establish a new legal residence in a state in which they reside due to military orders. They may not establish domicile in Colorado while residing elsewhere or while being physically present in the State only on a temporary basis.

Persons domiciled in Colorado for one year who enter active duty military service, and who return permanently to Colorado within six months of discharge, and their dependents, qualify for in-state tuition regardless of changes of domicile while on active duty.

VETERANS

Students should consult with Veteran and Military Student Services (VMSS) for more information regarding current legislation and necessary documentation. Current information is also available at the VMSS web resource page on residency at: <https://www.cuanschutz.edu/veterans/benefits#Residency> (<https://www.cuanschutz.edu/veterans/benefits/#Residency>).

CIVILIAN ABSENCES FROM THE STATE

Civilians who accept overseas employment, governmental or otherwise, or temporary employment in another state, or who are temporarily absent from Colorado for other reasons, must continue to file Colorado State income tax returns as residents for each and every year of their absence from the State. They must claim and pay taxes on all of their earnings, wherever earned, and will receive a credit for taxes withheld by or paid to another state. Failure to do so is sufficient evidence to determine that the individual has relinquished his or her Colorado domicile for tuition purposes.

Peace Corps Volunteer

Under the Colorado Tuition Classification for Peace Corps Volunteers Act (https://leg.colorado.gov/sites/default/files/2023a_096_signed.pdf) (effective Fall 2023), a student who would not otherwise qualify for in-state tuition and who was certified by the director of the Peace Corps as having served satisfactorily as a Peace Corps Volunteer, is eligible to be classified as an in-state student for tuition purposes.

DOCUMENTATION

All new, admitted students are required to complete an Initial Verification of Colorado Residency form; this form allows students to self-identify as having completed service as a Peace Corps Volunteer. Students must upload the following documentation in order to qualify for resident tuition classification status under the aforementioned legislation:

- Certification of Service for Employment Purposes (available via the Peace Corps RPCV Portal (<https://www.peacecorps.gov/returned-volunteers/support-services/certifications-service/>))

CURRENT STUDENTS

Current students who believe they qualify for resident tuition as a result of this information should email a copy of their Certification of Service for Employment Purposes to TuitionClassification@cuanschutz.edu.

If approved, the student is:

- Eligible to apply for the College Opportunity Fund (<https://www.ucdenver.edu/registrar/residency/college-opportunity-fund/>) (Nursing Undergraduate students ONLY)
- Eligible to apply for resident financial aid (<https://www.cuanschutz.edu/student-finances/financial-aid/apply/>)

Permanent Resident Aliens and Visa Holders

Nonimmigrant visa holders may qualify for in-state residency status after one year of Colorado residence, unless their legal purpose for staying in the United States is to study. Holders of the visa types listed below are **not** eligible for in-state status:

- F-1
- F-2
- H-3
- H-4 (if dependent on an H-3 visa holder)
- J-1 (student or trainee category)
- J-2 (if dependent on a J-1 student or trainee)
- M-1
- M-2

Holders of other nonimmigrant visa types (not listed above) may be considered for in-state residency status according to standard rules and procedures. Unemancipated minors with student immigration status may qualify through their parents so long as the parents do not have student visas.

WICHE Programs at CU Anschutz

The University of Colorado Anschutz Medical campus participates in three separate programs through the Western Interstate Commission on Higher Education (WICHE). Review the information below to learn more about benefits, eligibility and requirements of each program.

PROFESSIONAL STUDENT EXCHANGE PROGRAM (PSEP)

WICHE's Professional Student Exchange Program (PSEP) enables eligible students to enroll in selected out-of-state professional healthcare programs and pay reduced tuition. Student home states typically fund students to enroll through PSEP if a professional healthcare program is not available at one of their in-state public institutions.

Students enrolled through PSEP pay reduced tuition. A student's home state pays a "support fee" to the enrolling school to reduce the cost of the student's education. Most students enrolled in public programs pay resident tuition; if the support fee does not cover the difference between resident and nonresident tuition, they may pay slightly more.

Students must apply for PSEP through their home WICHE state office. For more information please consult the WICHE PSEP webpage (<https://wiche.edu/psep/>).

WESTERN REGIONAL GRADUATE PROGRAM (WRGP)

The Western Regional Graduate Program (WRGP) allows master's, graduate certificate, and doctoral students who are residents of WICHE member states to enroll in participating graduate programs at CU Anschutz Medical Campus and pay resident tuition. In order to receive WRGP at CU Anschutz, students must maintain residency in their home WICHE state and are ineligible to establish Colorado residency while receiving the WRGP tuition rate.

Eligible students who are approved for WRGP pay Colorado resident tuition.

Students must be fully admitted to a **participating WICHE WRGP academic program** at CU Anschutz before they may request the WRGP tuition rate from their program office of admissions or program administrator. For more information about participating programs and contacts please consult the WICHE WRGP webpage (<https://wiche.edu/wrgp/>). **Please note:** Specific programs may require other criteria besides residency in your WICHE home state for the WRGP tuition rate.

WESTERN UNDERGRADUATE EXCHANGE (WUE)

The Western Undergraduate Exchange (WUE) program offers Undergraduate students in the College of Nursing who are residents of WICHE member states and territories the chance to attend CU Anschutz at a discounted rate. WUE students pay 150% of the in-state tuition rate instead of the full non-resident tuition rate.

Students must be fully admitted as an undergraduate, degree-seeking student in the College of Nursing before they may request the WUE tuition rate from the program. The College of Nursing may require additional criteria besides demonstrated residency in a WICHE state to receive the WUE tuition rate. To learn more about specific criteria, please visit the College of Nursing's WICHE page (<https://nursing.cuanschutz.edu/admissions/wiche/>), or click here (<https://nursing.cuanschutz.edu/admissions/tuition-wue-faqs/>) to review WUE FAQ's.

INFORMATION FOR INTERNATIONAL WICHE APPLICANTS

Nonimmigrant visa holders who reside in a WICHE jurisdiction may qualify for the Western Undergraduate Exchange (WUE) / Western Regional Graduate Program (WRGP) tuition rate, unless their legal purpose for staying in the United States is to study. Holders of the visa types listed below are **not** eligible for WUE/WRGP status.

- F-1
- F-2
- H-3
- H-4 (if dependent on an H-3 visa holder)
- J-1 (student or trainee category)
- J-2 (if dependent on a J-1 student or trainee)
- M-1
- M-2

Holders of other nonimmigrant visa types (not listed above) who reside in a WICHE jurisdiction may be considered for WUE/WRGP status according to standard rules and procedures. Unemancipated minors with student immigration status may qualify through their parents so long as the parents do not have student visas.

Petitions and Appeals

The Petition for Resident Tuition Classification is an electronic form for the University of Colorado Anschutz Medical Campus current students and fully admitted students to request a change in their tuition classification and residency status. It can be accessed at the following web address: <https://www.cuanschutz.edu/registrar/residency/current-students> (<https://www.cuanschutz.edu/registrar/residency/current-students/>). Prior to submitting the petition, students should gather the information/documentation outlined in the Petitioner Documentation Guidelines (http://catalog.ucdenver.edu/cu-anschutz/financial-information/residency-tuition-classification-accountable-students/PetitionDocumentation_revSept2020.pdf).

Students who wish to change their tuition classification from non-resident to resident must fill out and submit a Petition for Resident Tuition Classification by the published deadlines. Students must have

established 12 months of Colorado domicile prior to the first day of the term for which they are petitioning. Further information regarding establishing Colorado domicile is available through the Colorado Department of Higher Education.

PETITION SUBMISSION DEADLINES

Fall 2025

- First day to petition - May 19, 2025
- Priority Petition Deadline - July 11, 2025
- Final Petition Deadline - August 1, 2025

Spring 2026

- First day to petition - September 29, 2025
- Priority Petition Deadline - December 5, 2025
- Final Petition Deadline - December 12, 2025

Summer 2026

- First day to petition - March 9, 2026
- Priority Petition Deadline - April 24, 2026
- Final Petition Deadline - May 15, 2026

Accountable Student Information School of Medicine & School of Dental Medicine Nonresidents and Accountable Students

Tuition and fees for nonresident students enrolled in the University of Colorado School of Medicine M.D. program and School of Dental Medicine D.D.S. program are governed by special Colorado legislation.

Accountable students at the Anschutz Medical Campus are persons who, as of the date of their selection for admission into an Anschutz Medical Campus professional health care program (currently students in the Schools of Medicine and Dental Medicine), will not be receiving funding from the State of Colorado or a cooperative state for any portion of the costs incurred in participating in designated Anschutz Medical Campus professional health care programs. Prior to matriculation, Accountable students must agree to the terms of an Accountable student contract (including payment of in-state tuition plus associated Accountable student fee) for the duration of their professional degree training.

The "Accountable Student Program for Students in Health Sciences Professions" was enacted in 2006 by the State legislature. This legislation, Colorado State Statute C.R.S. 23-20-138 is available for reference here (<https://advance.lexis.com/documentprint/?pdmfid=1000516&crd=fa57a836-71e9-4394-ad5a-246fee885026&eomp=h2vckkk&prid=7c6c010c-e60a-4750-a663-212206f15c8d>). The Health Sciences Center implemented this program for the Schools of Medicine and Dental Medicine effective with the 2006-07 academic year.

Accountable students, once designated and having signed the Accountable student contract, are bound by the terms of their contract for all years of their studies, including their agreement to pay the Accountable student fee regardless of residency status. They may, however, submit a Petition for Resident Tuition Classification in order to potentially qualify for other forms of financial assistance available exclusively to eligible Colorado residents.

Establishing Colorado domicile may also allow Accountable students the benefit of the resident tuition rate in other degree programs, should

they choose to enroll in a second degree program (e.g. Master of Public Health, or Master of Business Administration, etc.). Petitioning for in-state residency status typically occurs after residing in Colorado for a minimum of 12 months and establishing applicable legal ties to the state, and prior to the second year of studies. However, some special circumstances and exceptions may apply. Petitions for Resident Tuition Classification status are processed by the Office of the Registrar.

Additional information regarding Accountable student responsibilities is available through the Office of the Registrar's website (<https://www.cuanschutz.edu/registrar/residency/accountable-student-information/>).

Paying Your Bill

Paying your Bill

Students enrolling at the Anschutz Medical Campus are responsible for full payment of tuition and fees. Students should be prepared to pay their bills in full by the due date noted on their billing statement. Tuition and fee payment due dates vary by semester and campus. Please refer to the Billing Calendar for specific dates.

Failure to receive a tuition bill notification does not dismiss the student from their obligation to pay. Failure to pay tuition or stopping payment does not cancel classes and does not eliminate or reduce the financial obligation. Students are financially liable for all classes for which they are registered (whether through self-enrollment or block/batch enrollment at the direction of the program). Failure to attend classes does not cancel a student's registration, nor does it remove the student's financial obligation. See the Tuition and Fees Payment Disclosure Statement (https://www.ucdenver.edu/docs/librariesprovider22/billing-payments/update-bursar-tf-agreement-2-24-23-pdf-approved.pdf?sfvrsn=f17a52bb_2).

The student's bill will be comprised of tuition and fees (potentially including student health insurance) for the current term. The bill may also include any credits due for advance payments, deposits, and financial aid when applicable. Students with unpaid tuition balances of \$1,500.00 or greater will not be allowed to register for subsequent semesters. Students with past due balances who require transcripts may refer to our Registrar's Transcript (<https://www.cuanschutz.edu/registrar/student-resources/transcripts/#ac-i-need-to-order-a-transcript-but-i-owe-a-past-due-balance-7>) page.

Students may pay tuition and fees through the UCDAccess portal, or with cash, personal checks, or by credit card at the Bursar's Office. Any payment transaction that is returned by the bank will be assessed an additional returned payment charge.

The University of Colorado Denver is committed to providing students and their families a range of options for paying their educational expenses. The credit card (including debit card) payment method has become prohibitively expensive due to the fees charged by credit card companies to CU Denver for credit card transaction processing. This expense has been covered by University tuition revenues, and reduces the tuition dollars available for academic programs and services for all students. Therefore, a service fee of 2.85% of the payment amount will be assessed for all credit and debit card transactions.

Late and Service Charges

A once-per-term late charge of \$5 - \$50 based on outstanding balance and a monthly service charge of 1.00% will be added to a student account

if the account is not paid in full. The late charge will be assessed once per term, while the service charge will be assessed each month a student has a past due balance.

Enforcement

Past due student accounts are referred to Student Debt Management. An overdue student account may also be referred to a third party collection agency and reported to one or more credit bureau reporting services. The student explicitly authorizes University of Colorado Denver | Anschutz Medical Campus to release personal and financial information under those circumstances.

To the extent permitted by applicable law, the student agrees to reimburse University of Colorado Denver | Anschutz Medical Campus the fees of any collection agency, which may be based on a percentage at a maximum of 40% of the debt, and all costs and expenses, including reasonable attorney's fees incurred in such collection efforts.

In addition, while the student maintains a past due balance with the University, a hold will be placed on the student record stopping any future registration and the release of official transcripts and diploma.

Pursuant to C.R.S. 23-5-15, in the event of a default on an amount owed to University of Colorado Denver | Anschutz Medical Campus, the University of Colorado Denver | Anschutz Medical Campus may certify to the Colorado Department of Revenue information regarding persons with past due accounts. The Colorado Department of Revenue may then disburse funds to University of Colorado Denver | Anschutz Medical Campus in satisfaction of that debt from tax refund amounts owed to the individual, if any.

Personal Checks

There is a \$30.00 returned check fee on all items returned by a financial institution.

Refunds and Complete Withdrawal Charges

No withdrawal is valid without the written consent of the dean or the dean's designee of the school, college, or program in which the student is registered. If a student withdraws from the University after Census Date, no refund of tuition and fees will be granted.

The deans or their designees of the schools, colleges, and programs at University of Colorado Denver | Anschutz Medical Campus may, under extenuating circumstances, waive all or a portion of tuition and fee charges upon a student's complete withdrawal or dismissal from school. Students requesting tuition relief due to a withdrawal for unforeseen circumstances should contact their school's Admissions/ Student Affairs Office to file a formal appeal. If their respective school determines that the circumstances justify relief from the tuition charges, the school or college will work with the Registrar's and Bursar's Offices to enter the appropriate drop or withdrawal coding on the student's account.

The University must follow specific Federal guidelines regarding aid adjustments for students who withdraw from all classes. For more information, please reference the Financial Aid section of this catalog under "Return to Title IV." The policy states students may withdraw their enrollment in a program until the published Census Date of the semester and receive a full refund of tuition and fees. Withdrawals occurring after the published Census Date will not be eligible for any refunds.

Census Dates are published to indicate when students can drop or withdraw from courses or a program without incurring a financial obligation for tuition and fees to the University..

Tuition Assistance Benefit (TAB)

The University of Colorado offers a Tuition Assistance Benefit to employees. This benefit is administered through Employee Services at the CU System level. For more information, please visit the Employee Services <https://www.cu.edu/employee-services/benefits-wellness/current-employee/tuition-assistance/>

Financial Aid

Financial Aid

The CU Anschutz Medical Campus Financial Aid & Scholarships Office (FASO) is committed to providing prospective and continuing students with information and resources to financially support their educational goals. We strive to provide service in a timely, equitable and caring manner, in full support of the community, university and governing agencies. Please visit our website at www.cuanschutz.edu/student-finances/financial-aid (<https://www.cuanschutz.edu/student-finances/financial-aid/>) for more information.

Applying for Financial Aid

You must complete the Free Application for Federal Student Aid (FAFSA) at StudentAid.gov (<https://studentaid.gov/>) for the school year you wish to attend. Gift aid is awarded on a first-come, first-served basis so you are encouraged to submit all required or requested documents as soon as possible. Please check your "To Do List" in the Student Center of your student portal to see if any additional documents have been requested. For additional information on Applying for Financial Aid, please visit www.cuanschutz.edu/student-finances/financial-aid/apply (<https://www.cuanschutz.edu/student-finances/financial-aid/apply/>).

Eligibility for Financial Aid

All applicants for aid must be degree candidates or enrolled in an acceptable certificate program. If you are enrolling in a certificate program, contact our office to make sure you are in an eligible program. Foreign students who are in the United States on immigrant or permanent visas may be eligible for financial aid and should contact the Financial Aid & Scholarships Office.

Title IV funds include, but are not limited to the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), Federal Direct Subsidized Loan, Federal Direct Unsubsidized Loan, Federal Direct Parent PLUS Loans, Federal Direct Graduate PLUS Loan, and Federal Work-Study.

All students who wish to receive most types of financial aid:

- demonstrate financial need
- must be a U.S. citizen or eligible non-citizen
- must be admitted to or enrolled in an eligible degree or certificate program, as determined by the Anschutz Medical Campus
- must maintain Satisfactory Academic Progress (SAP) standards
- must not be in default on a student loan
- must not have drug-related offenses (contact our office for more information)

Click here (<https://studentaid.gov/understand-aid/eligibility/requirements/>) to learn more about eligibility requirements for federal student aid.

Types of Financial Aid

Financial aid funding for students at the Anschutz Medical Campus is available from federal, state and institutional sources. To receive federal, state and many institutional sources of funding, you must apply and qualify for financial aid. Most financial aid is awarded on the basis of financial need and availability of funds. Other sources, local, private, and institutional are awarded on the basis of these criteria, such as academic achievement.

The following types of financial aid are available for students at the Anschutz Medical Campus:

- Scholarships - "gift money" that is awarded on the basis of academic achievement (merit-based scholarships) or a combination of academic performance and financial need. These funds do not have to be repaid.
- Grants - "gift money" from federal, state, and University funds that are awarded based on financial need. These funds do not have to be repaid.
- Work-Study - The work-study program provides part-time employment opportunities for students with financial need and allows them to earn money to help pay education expenses. Jobs may be on campus, off-campus, or in a community service agency. Student seeking work-study funds must complete the Work-Study Request Form at www.ucdenver.edu/AnschutzFinAid/Forms. To find a work-study job, please visit the Student Employment website.
- Loans - These are funds you can borrow from institutional loan programs, federal loan programs, and private lenders. Most loans must be repaid once you graduate, withdraw from school, or drop below half-time enrollment.

Funds you receive from your department, or other source, to pay for tuition and fees, living expenses, books, and other educational expenses, are generally counted as estimated financial assistance and must be included as part of your financial aid award. This may result in a reduction of other awards on your award notification. Certain veteran education benefits are excluded. For more information about the types of aid, please visit the Types of Financial Aid section on our website.

Financial Aid Offers

Financial aid funds will be offered once we have received and processed all required and requested documents. An email reminder will be sent to your Anschutz Medical Campus email account if additional documents are requested. The "To Do List" in the Student Center of the UCDAccess portal will also list any additional documents that have been requested. An award notification will be sent to your CU Anschutz email account when awards are available to view.

Loan Requirements

Students who borrow a student loan must complete all required loan documents before the funds can be disbursed. Visit <https://www.cuanschutz.edu/student-finances/financial-aid/types/loans> (<https://www.cuanschutz.edu/student-finances/financial-aid/types/loans/>) to learn more about the different types of loans.

Please visit StudentAid.gov (<https://studentaid.gov/>) to complete the appropriate Master Promissory (<https://studentaid.gov/mpn/>) and Student Loan Entrance Counseling (<https://studentaid.gov/entrance->

counseling/) if you or your parent will be borrowing any of the following federal loans for the first time.

- Direct Stafford Loans (subsidized and unsubsidized)
- Direct Graduate PLUS Loans (requires a credit check)
- Direct Parent PLUS Loans (requires a credit check)

If you are accepting a TEACH Grant, please complete the TEACH Grant Counseling and Agreement to Serve (<https://studentaid.gov/teach-grant-program/>) at StudentAid.gov (<https://studentaid.gov/>).

You will receive an email from Heartland ECSI (<https://heartland.ecsi.net/>) (webmaster@ecsi.net) with instructions on how to complete the loan documents for the following loans.

- Federal Nursing Loan
- Nurse Faculty Loan Program
- Health Professions Student Loan
- Loan for Disadvantaged Students
- Medical Center Loan
- Medical Student Loan

Disbursing (Paying) Financial Aid

- Financial aid is disbursed (paid) into your student account approximately one week before the start of classes each semester.
- Funds remaining after tuition, fees and any other institutional charges are paid will be refunded to you by the Bursar's Office through direct deposit to your bank account. If you do not have direct deposit set up, a check will be mailed to the address you have on file in the Student Center.
- Funds remaining from a Parent PLUS Loan may be refunded to you or your parent as indicated on the PLUS Loan application.
- Some financial aid funds cannot automatically pay charges the federal government considers non-mandatory. This includes health insurance, dental insurance, bookstore charges, and late charges. If you wish for your financial aid to pay these charges, you must grant permission through the portal. If permission is not granted, you will be responsible for paying any and all of these charges out of pocket.
- Work-study funds must be earned through work and are not disbursed into your student account.

Satisfactory Academic Progress (SAP) Standards

- Students are responsible for understanding the Satisfactory Academic Progress (SAP) Standards (<https://www.cuanschutz.edu/student-finances/financial-aid/policies/>). Therefore, students are encouraged to review this policy and meet with a financial aid advisor before withdrawing from or dropping any courses.
- To be eligible for financial aid, federal, state and institutional regulations require student to meet certain SAP standards. The purpose of SAP is to ensure academic success and graduation. Students who are receiving aid, or who intend to receive aid in the future, must comply with these standards.
- SAP will be evaluated at the end of each term. Students who do not meet the SAP standards will be informed of their eligibility status via email. Students in Good Standing are not notified unless their status changes to Warning or Suspension. This is not the equivalent of being placed on academic probation or suspension by your school or college.

- Here are some commonly used terms relating to SAP.

- **Good Standing:** Students meeting financial aid SAP standards are considered in good standing and are eligible to receive financial aid.
- **Warning:** Students who have failed to meet SAP standards after being in Good Standing may be placed on Warning status. Students on Warning status are eligible to receive financial aid. Student on Warning status have one term to come back into compliance with the financial aid SAP requirements and return to Good Standing. Students who fail to meet financial aid SAP standards while on Warning status will be placed on financial aid Suspension.
- **Suspension:** Students who fail to meet financial aid SAP standards while on Warning status will be placed on financial aid Suspension and are not eligible for any aid until they meet the standards or successfully appeal.
- **Probation:** Students who successfully appeal their financial aid Suspension are placed on financial aid Probation. Students on Probation will receive aid for one term while attempting to meet SAP standards in order to return to Good Standing. Failure to meet SAP standards at the end of a Probation term results in the student returning to financial aid Suspension status.

- Students on financial aid Suspension have two ways to regain eligibility for financial aid:
 - Meet all the SAP standards while not receiving financial aid. Once SAP standards are met, students must notify the Financial Aid and Scholarships Office to have their status re-evaluated.
 - If extenuating circumstances interfered with the student's academic progress, the student may appeal his suspension by completing the Satisfactory Academic Progress (SAP) Appeal/Advising Form in our forms section (<https://www.cuanschutz.edu/student-finances/financial-aid/forms/>).

Complete Withdrawal (From All Courses) and Financial Aid

Withdrawal is defined as ceasing to be enrolled prior to the end of the standard term. To comply with Federal (Title IV) financial aid regulations, the FASO is required to apply the Return of Title IV Aid Calculation to all students who received Title IV aid at the time of withdrawal.

The official withdrawal date will be determined by the Registrar's Office based on information from the school or college, the faculty member, and the student. Either the school or the student must notify the Registrar's Office and the Financial Aid and Scholarships Office of the official withdrawal date. If the date cannot be determined, all aid for the term may be cancelled.

Documenting Attendance

Federal regulations require that Title IV aid recipients begin attendance in a class to establish eligibility for the funds. Institutions are required to document that attendance began in classes where a student drops, withdraws, or received an "F" grade. Faculty will be asked to document that attendance has begun. If attendance cannot be confirmed, all aid will be cancelled for the term.

Return of Title IV Policy

- Federal calculations will apply.
- The amount of repayment will depend on:
 - the number of days you attended class in the term
 - the type of financial aid you received
 - whether you are refunded a portion of tuition and fees. The portion of the term you did not attend represents the portion of aid that must be repaid.
- If you withdraw after completing more than 60% of the term, you will have earned 100% of the federal financial aid received for that term and no repayment is required.
- **Students withdrawing from school:** Financial aid recipients who are withdrawing from all classes from the CU Denver | Anschutz Medical Campus must complete the University Withdrawal Form at www.cuanschutz.edu/registrar/student-resources/forms (<https://www.cuanschutz.edu/registrar/student-resources/forms/>) and should contact the Financial Aid and Scholarships Office prior to withdrawing.

Leave of Absence (LOA)

Students are not eligible to receive financial aid funding while on LOA from the University. If the student begins the LOA during the semester, a Return of Title IV calculation and a withdrawal form are required.

Loan Exit Counseling

Exit counseling is required when students graduate, leave school, or drop below half-time enrollment. Exit counseling provides important information needed to prepare to repay federal student loans. Students must complete exit counseling for each type of loan borrowed, as well as the TEACH Grant, if received.

Please visit [StudentAid.gov](https://studentaid.gov/) (<https://studentaid.gov/>) to complete exit counseling for the following Federal programs:

- Direct Stafford Loans (subsidized and unsubsidized)
- Direct Graduate PLUS Loans
- Direct Parent PLUS Loans
- TEACH Grant

Please visit [Heartland ECSI](https://heartland.ecsi.net/) (<https://heartland.ecsi.net/>) to complete exit counseling for all other loans:

- Federal Nursing Loan
- Nurse Faculty Loan Program
- Health Professions Student Loan
- Loan for Disadvantaged Students
- Medical Center Loan
- Medical Student Loan

Veterans' Benefits

Veterans & Military Student Services

Location: Education 2 North, Student Services Suite
 Mailing Address: 13120 East 19th Ave., P28-3207, Aurora, CO 80045
 Phone: 303-315-7300
 Email: VMSS@ucdenver.edu
 Website: <https://www.cuanschutz.edu/veterans> (<https://www.cuanschutz.edu/veterans/>)

The University of Colorado Anschutz Medical Campus is military friendly and committed to providing service members and their families with a high-quality education, catered to their distinct needs. The Office of Veteran and Military Student Services (VMSS) supports veteran, active duty, reservist, national guard and dependent students. Representing active-duty, reservist, National Guard, veteran and dependents at CU Denver and CU Anschutz Medical Campus, the Office of Veteran and Military Student Services (VMSS) supports students as they transition from the military to the classroom and then on to the workforce.

- **One-Stop-Shop Services:** VMSS offers holistic student services in our office including, but not limited to, answering questions about your education benefits and serving as a liaison to other divisions on campus.
- **World Class Programing:** Our Boots-to-Suits professional development program (<https://www.cuanschutz.edu/veterans/academics-career/>) prepares you for your future career! Participants who complete the program will earn a beautiful new suit to jumpstart your new career!

Mission:

To strengthen the lives of all military-connected students, by delivering top-notch programming, support, and services that foster a community of past, present, and future students, raises awareness of challenges faced by this population, and helps our students in achieving academic, personal, and professional goals as they transition to, through and beyond the university.

Student Employment

Types of Employment

Work-Study is a need-based award offered by the Financial Aid & Scholarships Office, making it easier for students with financial need to find a part-time job and earn money to help pay for educational expenses. The program encourages community service work and work related to the recipient's course of study. Work-Study positions are funded solely by the work-study award through your financial aid package. To be eligible, all students must:

- Complete the Free Application for Federal Student Aid (FAFSA) at <https://studentaid.gov> (<https://studentaid.gov/>);
- Be accepted into a degree program;
- Be enrolled at least half-time each semester (at least 6 credits for undergraduate students and at least 3 credit hours for graduate students);
- Submit a Work-Study Request Form at <https://www.cuanschutz.edu/student-finances/financial-aid/forms> (<https://www.cuanschutz.edu/student-finances/financial-aid/forms/>).

Student Hourly positions are on-campus positions funded by a university department's budget. Work-study and/or financial aid is not required for this type of employment. All hourly students must be enrolled in some credit-earning capacity during the semester in which you are employed.

Regular Hourly positions are offered by businesses in the surrounding community, and are not affiliated with the university. Work-study and/or financial aid is not required for this type of employment. All students, regardless of enrollment or financial need, may apply for these positions.

Student Employment Policies

After gaining employment, it is the sole responsibility of every student employee (work-study & hourly, on or off-campus) to read and understand both the Student Employment Policy and Student Employee Information and Policy sections of the Student Handbook at https://www.ucdenver.edu/docs/librariesprovider41/student-employment/student_hourly_employment_handbook.pdf?sfvrsn=8e3963ba_6

If a student employee does not understand or has questions regarding any portion of the Handbook, please talk with a department supervisor or contact the Student Employment Office at: StudentEmployment@ucdenver.edu (studentemployment@ucdenver.edu) or (303) 315-1842.

Please visit our Student Employment website at <https://www.cuanschutz.edu/student-finances/student-employment> (<https://www.cuanschutz.edu/student-finances/student-employment/>) for additional information.

Applications are available online at <https://www.cuanschutz.edu/student/support/cu-anschutz-shares> (<https://www.cuanschutz.edu/student/support/cu-anschutz-shares/>).

CU Anschutz Shares

CU Anschutz Shares

Website: <https://www.cuanschutz.edu/student/support/cu-anschutz-shares> (<https://www.cuanschutz.edu/student/support/cu-anschutz-shares/>)

Email: cuanschutzshares@ucdenver.edu

Phone: 303-724-2866

Help for Students in Need

If you are currently experiencing a life-threatening or other emergency situation, please call 911.

This is a resource available to students facing temporary financial hardship that threatens the student's ability to successfully complete the current semester.

Eligibility Guidelines

To be eligible for consideration, a student:

- Must be experiencing an unanticipated situation (accidents, food insecurity, natural disasters, homelessness, etc.)
- Must be currently enrolled and regularly attending at least one course at the CU Anschutz Campus
- Can provide sufficient documentation of current need
- Must exhaust all other possible financial resources (student loans, Medicaid, personal financial accounts, family/friends, etc.) before applying for student emergency funds
- **Have not previously received Shares funding.**

Note: funding for the program is limited and not intended to substitute for the regular financial aid process. Receiving funds through this program may impact your financial aid package. Please schedule a consultation with a financial aid advisor (<https://www.ucdenver.edu/anschutz/studentresources/FASO/Pages/Contact-Us.aspx>) (<https://www.ucdenver.edu/anschutz/studentresources/FASO/Pages/Contact-Us.aspx>) to discuss your options.

Academic Standards and Policies

Academic Standards and Policies

Classroom Security

More than 60 rooms in Education 1 and 2, as well as larger labs in the research building, have been equipped with upgraded security features.

In the event of an imminent harmer threat, one of the panic buttons in the classroom should be pressed and occupants of the room should contact University Police at (303) 724-4444. Pressing the button will automatically lock the room and alert the University Police. Simultaneously, any room in that same building equipped with the security technology will also lock and the in-room strobe light will activate, alerting occupants to an imminent threat in the building.

In addition, each room is equipped with a severe bleeding kit. An information sign is posted with further information and instructions.

Rooms with the security upgrades are equipped with: panic buttons (on podium and accessible wall), guidance signage, severe bleeding kit for severe bleeding control, blue strobe light and reinforced caulking and protective film on door windows. When the panic button is pushed, University Police are notified immediately, blue strobe lights will activate inside of all rooms equipped with a strobe, blue strobe will activate in the hallway of the room where the button was pushed, and doors will lock on all rooms equipped with security project door locks in the building.

Occupants of the room may leave the room. However, only University Police will have access to enter the room.

Email and Network Access for Students

All enrolled CU Anschutz Medical Campus students are assigned an email account which is the primary method for receiving university information and communication. Your university username and password provide access to the UNIVERSITY domain, campus computers, class evaluations, and student portal. In addition, all students, faculty and staff need to register for multi-factor authentication (MFA) (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/cu-secure-and-multi-factor-authentication--mfa-/>) using Duo Security to access university resources including email.

University email is an official method of communication between students and university administration, and Microsoft 365 Outlook is the only university-supported email client. OIT recommends installing Outlook on your devices for ease of use and security purposes. More information about installing and using Outlook email is available on the Microsoft Outlook Email webpage. (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/for-students/microsoft-outlook-email/>) If you do not have a password or your need to update your password, visit the university password webpage (<https://passport.ucdenver.edu/passwordreset/>).

Academic Calendar

Academic Calendar

The 2025-2026 Academic Calendar contains important dates, deadlines, holidays, and exams for the CU Anschutz Medical Campus. Please note that some dates **may vary by School, College, Program, or Department**. Students are advised to work directly with their respective School, College, Program, or Department for any variance(s) to the standard dates below.

Additional program-specific academic calendars are also available through the Office of the Registrar's website (<https://www.cuanschutz.edu/registrar/academic-calendars/>).

Students may use shared computer workstations in school-operated labs or at the Strauss Health Sciences Library. All persons using shared computers should be especially careful to log off their account when completing their work. More information is available at the Strauss Health Sciences Library computer workstations webpage (<https://library.cuanschutz.edu/help/technology-help/computer-workstations/>).

Members of the university have access to internal and external resources for securely connecting to the university network. OIT supports both wi-fi and cellular coverage on campus. With your laptop, tablet, or mobile device you can access the Secure Wireless Network (labeled CU Denver or CU Anschutz) or Guest Wireless Network (CU Denver Guest or CU Anschutz Guest) while on campus or at our off-campus locations. Both networks will require a certificate acceptance however, for access to the Secure Wireless Network you must use your university credentials - username and password. Additional information is available here (<https://www.cuanschutz.edu/offices/office-of-information-technology/get-help/tech-troubleshooting/wireless-and-connectivity/>).

No Credit Courses/Audit Policy

A student may not audit courses at the Anschutz Medical Campus. Instead, a student who has been officially accepted may register in a course for No Credit. Persons enrolling for No Credit must pay the same tuition per credit hour as they would if they were taking the course(s) for credit.

Students must complete regular registration and then change from credit to no credit by obtaining a no credit form and appropriate signatures before the drop/add period ends. "Request for No Credit" forms are available on the Registrar's Office website (<https://www.cuanschutz.edu/registrar/student-resources/forms/>).

Study Abroad

The Office of Global Education / Study Abroad provides academically and professionally relevant international experiences to a diverse student population at the University of Colorado Denver | Anschutz Medical Campus. These experiences equip students with cross-cultural skills necessary to succeed in an interconnected global society. The Office of Global Education is committed to providing students with a wide range of engaging and affordable study, research, and clinical opportunities. CU Anschutz students and residents planning an international experience should contact the Office of Global Education for further information about planning and registration.

Email: study.abroad@ucdenver.edu

Phone: 303.315.2001

Website: <https://www.ucdenver.edu/students/study-abroad> (<https://www.ucdenver.edu/students/study-abroad/>)

Fall 2025

Event	Date
First day to apply for Fall Graduation	June 9, 2025
Course Enrollment Begins	July 7, 2025
Classes start	August 25, 2025
Labor Day	September 1, 2025
Add/Drop Deadline	September 5, 2025
Last day to apply for Fall Graduation	September 5, 2025
Census Day	September 8, 2025
Thanksgiving Day	November 27, 2025
Classes end	December 5, 2025
Finals week	December 8-12, 2025
Degree conferral date	December 12, 2025
End of semester	December 12, 2025
Commencement	*see note below
Grades due	December 17, 2025

**Please visit the Commencement website (<https://www.cuanschutz.edu/commencement/>) for the most up-to-date information.*

Spring 2026

Event	Date
First day to apply for Spring Graduation	September 8, 2025
Course Enrollment Begins	October 27, 2025
Martin Luther King Jr. Day	January 19, 2026
Classes start	January 20, 2026
Add/Drop Deadline	January 30, 2026
Last day to apply for Spring Graduation	January 30, 2026
Census Day	February 2, 2026
President's Day	February 16, 2026
Spring Break	March 16-20, 2026
Classes end	May 8, 2026
Finals week	May 11-15, 2026
Degree conferral date	May 15, 2026
End of semester	May 15, 2026
Grades due	May 20, 2026
Commencement	*see note below
Memorial Day	May 25, 2026

**Please visit the Commencement website (<https://www.cuanschutz.edu/commencement/>) for the most up-to-date information.*

Summer 2026

Event	Date
First day to apply for Summer Graduation	February 2, 2026
Course Enrollment Begins	March 23, 2026
Classes start	June 1, 2026
Add/Drop Deadline	June 5, 2026
Last day to apply for Summer Graduation	June 5, 2026
Census Day	June 8, 2026
Independence Day	July 4, 2026
Classes end	August 7, 2026
Finals week	August 10-14, 2026
Degree conferral date	August 14, 2026

End of semester

August 14, 2026

Grades due

August 19, 2026

Academic Credit

Credit Hour & Contact Hour Guidelines

(Effective March 2021)

These guidelines are intended to serve as a framework and resource in support of:

- Developing, delivering and innovating curriculum and courses
- Establishing CU Denver | CU Anschutz guidelines that align with state and federal guidelines
- Assisting schools and colleges in their responsibilities to assign and oversee credit and contact hours
- Meeting accreditation requirements for our campuses
- Defining minimum expectations for credit and contact hours in course components

Guideline Exception Requests

In order to provide maximum flexibility in recognition of the range of instructional activities across our two campuses and the ways in which instructional activities change and evolve, requests may be made through the relevant Dean to the Provost for exceptions to these guidelines.

School/College Oversight

Schools/Colleges and their programs have the responsibility to define, approve, implement, oversee and monitor credit and contact hours, and the minimum expectations of student and faculty in all course components. Schools and colleges ensure that syllabi and/or special processing forms are used for all courses.

Definitions

Course Component describes the course types currently programmed in the University of Colorado Student Information System (CU-SIS) and the selectable course options that schools and colleges utilize when building courses. It describes the type of class offered: the part or modules of a course that work together to define the entire course structure. The course components included in this document are those used at CU Denver and/or CU Anschutz.

Instructional Contact Time encompasses direct and indirect instruction of students by faculty. The course components utilized for instruction are described below in sections A and B.

Out-of-Class Student Work describes minimum guidelines regarding the amount of time students can expect to engage in course activities that occur outside of scheduled class times. This can include reading and studying materials presented in a lecture course, as well as activities such as experiential, research, creative or written work undertaken by a student to meet or exceed the expectations, learning objectives and rigor of the academic program.

Credit Hour includes a combination of instructional contact time and out-of-class student work.

A. Guidelines by Course Component for Lectures

The following provides general definitions and guidance on how the credit hour translates to the course components utilized by the University of Colorado Denver | Anschutz Medical Campus.

Note, the information below serves as general guidance only, and the definitions do not dictate particular amounts of classroom time versus out-of-class student work.

Lecture: Faculty member responsible for delivery and discussion of learning material and related instructional activities. Minimum instructional contact time per credit is noted below.

*Credit Awarded	Minimum Instructional Contact time/week	Minimum Instructional Contact time/15wks	Minimum Out of Class Student Work/week	Minimum Out of Class Student Work/15wks	Total Instructional contact time & out of class student work
1	50 mins.	750 mins.	100 mins.	1500 mins.	2250 mins. (37.5 hours)
2	100 mins.	1500 mins.	200 mins.	3000 mins.	4500 mins. (75 hours)
3	150 mins.	2250 mins.	300 mins.	4500 mins.	6750 mins. (112.5 hours)
4	200 mins.	3000 mins.	400 mins.	6000 mins.	9000 mins. (150 hours)

**Examples are calculated with respect to contact time and out-of-class student work.*

B. Guidelines for Course Components in Which Credit is Primarily Assigned Based on Contact Time for Faculty-led or Faculty-directed Instruction

Clinicals (CLN) Participation, including observation, in patient/client and patient/client-related services that are an integral part of student learning experiences within an academic program. Clinical instruction can occur within, or outside of, an institutional setting, and involves students observing or working with patients/clients who receive professional services from either the student and/or a clinical preceptor who may be a faculty member and/or a professional in the field. The minimum instructional contact time per credit is typically two-times that of a lecture (2:1 ratio).

Field Studies (FLD): Courses of study involving instructional activities conducted by the faculty and designed to supplement and/or extend an individual course or classroom experience. The minimum instructional contact time per credit is typically two times that of a lecture (2:1 ratio).

Laboratory (LAB): Instructional activities designed and overseen by a faculty member which require student participation, experimentation, observation, or practice. This includes clinical simulation laboratories. The minimum instructional contact time per credit is typically two-times that of a lecture (2:1 ratio).

Main Lab Section (MLB): Stand-alone labs involving instructional activities designed and overseen by a faculty member which require student participation, experimentation, observation, clinical simulation, or practice. The minimum instructional contact time per credit is typically two-times that of a lecture (2:1 ratio).

Recitation (REC): A course or section of a larger course, designed for group discussion or student recitation. The minimum instructional contact time per credit is equal to that of a lecture (1:1).

Seminar (SEM): Highly focused course that may include student presentations and discussions of reports based on literature, practice, problems, or research (e.g. capstone course). The minimum instructional contact time per credit is equal to that of a lecture (1:1).

Studio (STU): Courses with a focus on hands-on learning under the direct supervision of a faculty member wherein the student works to develop technical or creative skills respective to the area of study (e.g. architecture, music, visual arts, etc.). The minimum instructional contact time per credit is typically 1.5 times that of a lecture (1.5:1 ratio).

Workshops: Courses with a focus on experiential learning under the direct supervision of a faculty member wherein the student performs substantive work in a workshop setting to develop technical or creative skills using the facilities and equipment respective to the area of study. The minimum instructional contact time per credit is equal to that of a lecture (1:1).

C. Guidelines for Course Components Which May Involve Less Contact Time for Faculty-led or Faculty-directed Instruction and the Academic Program Defines the Number of Credits Awarded

These course components may involve less direct faculty involvement and more independent work by the student as compared to those listed in sections A and B. These courses may include a student working with a faculty member in a highly focused or specialized project. The amount of assigned credit is based on the program's determination of the effort required by a student to achieve the designated learning outcomes. In making this determination the academic unit/program should consider multiple factors including: (i) the knowledge and/or experience gained; (ii) the scope and level of the following activities; experiential and/or hands-on and/or research and/or creative and/or written work; and (iii) the hours involved to achieve learning outcomes.

Dissertation (DIS): A dissertation, an original investigation showing mature scholarship and critical judgment, demonstrating knowledge of research tools and methods, required for graduation at the Doctoral degree level.

Independent Studies (IND): Course of study where a student is formally enrolled during a period of research or independent study instruction in which the faculty interacts and directs student projects or other required activities with minimal associated direction.

Internship (INT): Course of study involving placement at an approved business, organization, industry or clinical environment that offers degree seeking students professional-level experience and responsibility. Applied and supervised field-based learning experience where students gain practical experience following a negotiated and/or directed plan of study.

Research (RSC): Student projects or other required activities with minimal faculty associated direction where a student is formally enrolled during a period of research.

Thesis (THE): A thesis which may be research or expository, critical or creative work, required for graduation with a Master's degree.

Practicum (PRA): Practical student work under the supervision of a faculty member or under supervision of a professional in the student's field and regular consultation with faculty member.

Other (OTH): Non-standard course offerings, such as Honors, Independent Research, Capstones, etc. that do not match the description of any other component type. If there is a course that meets outside of the standard contact time and outside student work requirements this must be established and documented.

Course Scheduling Notes

Courses can be offered at a shortened, accelerated pace, in which the credit hours assigned are the same as standard semester courses. These courses must meet the total amount of instructional and student work time as the examples above, even if delivered within an accelerated time frame. Variable length sessions (e.g. 5-week or 8-week) can be created as needed.

Note on Fractional Credit Hours: Courses may be created and offered in increments of half credits (e.g. 1.5 credits). Fractional credit courses are typically part of a course sequence and taught progressively in special sessions within a term. For example, two fractional courses may be offered in back-to-back sessions within a given semester. Minimum required contact hours must be prorated accordingly for fractional credit courses (e.g. 1.5 credits or 22.5 contact hours = 1,125 contact mins. + 2,250 mins. out-of-class work). For academic and administrative purposes, fractional credits are calculated and treated at their assigned value. They are not rounded in credit totals for graduation or degree requirements, tuition calculations, enrollment status and verification, participation eligibility, etc.

Note on Continuing Education Units: Continuing Education Units are measured as one tenth of an hour of instruction per hour. (1 hour of instruction = .1 CEU)

Instructional Modalities/Modes of Instruction

Course instruction can be provided in a number of various delivery modalities and still equate to the same learning outcomes and credit hour assignment provided for the course. The Department of Education offers the following definition of distance education as a guideline for electronic instructional delivery:

U.S. Department of Education, Distance Education Definition (34CFR 600.2):**

Distance education means education that uses one or more technologies listed in paragraphs (1)(i) through (1)(iv) of this definition to deliver instruction to students who are separated from the instructor or instructors, and to support regular and substantive interaction between the student and the instructor or instructors, either synchronously or asynchronously.

1. *The technologies that may be used to offer distance education include –*
 - (i) *The internet;*
 - (ii) *One-way and two-way transmissions through open broadcast, closed circuit, cable, microwave, broadband lines, fiber optics, satellite, or wireless communications devices;*
 - (iii) *Audio conferencing; or*
 - (iv) *Other media used in a course in conjunction with any of the technologies listed in paragraphs (1)(i) through (1)(iii) of this definition.*

**** U.S. Department of Education, Distance Education Definition Current proposed language, May 2019**

University of Colorado Denver | Anschutz Medical Campus Instructional Modalities

In-Person Courses: Courses offered primarily in face-to-face sessions with a pre-determined meeting pattern that contain direct interaction with a faculty member. Contact time is assessed using the guidance in Course Component Sections A and B.

Hybrid Courses: Courses offered primarily in a blended format with 1 or more on-site face-to-face class sessions and at least one or more online sessions, both containing interaction with a faculty member. Contact time is assessed using both the in-person definition (for the in-person portion) and online definition below (for the online portion).

Online Courses: Courses offered asynchronously, mostly online without any face-to-face meetings. Contact time is satisfied by several means including instruction or interaction with a faculty member, interactive tutorials, discussions and class projects that engage peers and are overseen by faculty.

Remote Courses: Courses offered primarily via Zoom or similar technology with a pre-determined meeting pattern that contains direct interaction with a faculty member. Contact time is assessed using the in-person definition.

State and Federal Governing Guidelines for Credit and Contact Hours

The Colorado Commission on Higher Education and the U.S. Department of Education have guidelines about credit hour assignments and/or definitions. Those are as follows:

Colorado Commission on Higher Education:

Colorado Commission on Higher Education Full-Time Equivalent (FTE) Reporting Guidelines and Procedures, April 2019 (<https://cdhe.colorado.gov/sites/highered/files/2020-03/v-partb-guidelines.pdf>)

To establish a statewide approach for reporting FTE student enrollment, CCHE and IHEs have established criteria for assigning credit hour values to courses, since 1985. Those values are continued as these updated guidelines reflect. This section identifies the typical relationship between base contact hours, credit hours and types of faculty involvement.

- *Base Contact Hour: The faculty Base Contact Hour represents a standard measurement of consumption of faculty resources by students. It consists of the number of scheduled minutes of instructional activity involving direct contact of faculty with students in a given term utilizing a particular method of instruction.*

The standard measurement for a faculty Base Contact Hour except for the instructional activities listed in Table II is:

- *Semester System Term: One Base Contact Hour = a minimum of 750 minutes. This translates to a minimum of fifteen 50-minute hours per semester.*
- *Quarter System Term: One Base Contact Hour = a minimum of 500 minutes. This translates to a minimum of ten 50-minute hours per quarter.*

Please note: Table II references specific instructional activities for which the institution is required to define the assigned credit hours. All are referenced in the sections below for *Credit Hour Guidelines by Type of*

Course Instruction and Credit Hour Guidelines by Type of Instructional Activity.

U.S. Department of Education, Credit Hour definition (34CFR 600.2):

... a credit hour is an amount of student work defined by an institution, as approved by the institution's accrediting agency or state approval agency, that is consistent with commonly accepted practice in postsecondary education and that—

1. *Reasonably approximates not less than—*
 - (i) *One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different period of time; or*
 - (ii) *At least an equivalent amount of work as required in paragraph (1)(i) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.; and*
2. *Permits an institution, in determining the amount of work associated with a credit hour, to take into account a variety of delivery methods, measurements of student work, academic calendars, disciplines, and degree levels.*

Term Structure at University of Colorado Denver | Anschutz Medical Campus

The University of Colorado Denver | Anschutz Medical Campus follows a semester term system with a standard-based academic calendar for the purposes of Title IV financial aid delivery. Semesters typically include 15 weeks of instruction, in addition to one finals week and one break week in the Fall and Spring semesters. Summer sessions are typically less than 15-weeks, but adhere to the policy in terms of contact hours and the amount of work required. Sessions within the semester term may also be scheduled for certain academic programs (for example, variable length sessions) that have a shorter number of weeks.

Grades

Grades are awarded directly by an individual faculty member to an individual student for work done in an individual course. Therefore, the grade will be entered directly into the student's record precisely as it is awarded by the instructor of record.

Final grades are typically available within two weeks following the end of an academic term via the student portal. Students wishing to appeal grades may only do so in accordance with existing policies established within their school, college, program, or department.

Additional information on the University of Colorado's Uniform Grading Policy is available through referencing APS 1025 (<https://www.cu.edu/ope/aps/1025/>).

Grade Point Average (GPA) Calculation

All University of Colorado coursework will factor into the cumulative GPA regardless of the campus at which the course was taken. Enrollment in a second/additional undergraduate or graduate program will not generate a new/separate GPA. The undergraduate GPA, the graduate degree GPA, and the graduate non-degree GPA are all calculated separately as academic careers. Grades received at another institution are not included in the University of Colorado GPA.

The University of Colorado GPA is computed for all courses multiplying the credit points per hour (for example, B = 3) by the number of semester hours for each course. Total the hours, total the credit points and divide the total points by the total hours. Grades of 'P', 'NC', '***', 'W', 'IP', and 'I' are not included in the GPA. 'I' grades that are not completed within one year are calculated as 'F' in the GPA.

If a course is repeated, all grades earned are used in determining the GPA.

Students should refer to their academic dean's office for individual GPA calculations as they relate to academic progress and graduation from their college or school.

Sample GPA Calculation

Grade Earned:	Credit Points per Hour:	x Credit Hours:	= Credit Points in Course
A	4.000	4.000	16.000
A-	3.700	4.000	14.800
B+	3.300	4.000	13.200
P	-	3.000	(excluded)
F	0	3.000	0

Grading System

The instructor is responsible for the grade symbol (e.g., A, B, C, D, F, I or IP, etc.) to be assigned. Special symbols (NC, W, and ***) are indications of registration or grade status and are not assigned by the instructor, but are automatically converted by the grade application system.

Standard Grades	Quality Points
A = superior/excellent	4.000
A(-) =	3.700
B(+) =	3.300
B = good/better than average	3.000
B(-) =	2.700
C(+) =	2.300
C = competent/average	2.000
C(-) =	1.700
D(+) -	1.300
D =	1.000
D(-) = minimum passing	0.700
F = failing	0

Note: Instructors may, at their discretion, use the **plus/minus** system but are not required to do so.

Grade	Explanation
***	Student is currently enrolled in the course or a final grade has not been submitted
H	Honors/Highest Achievement (Honors Department courses. Excluded from GPA)
I	Incomplete (Converted to an F if not completed within one year)
IP	In Progress (Thesis/dissertation at the graduate level or other specified courses)
NC	No Credit or Audit (Excluded from GPA and credit totals)

P	Pass (Under Pass/Fail option, grades of D- and above convert to a P. P is equivalent to D+, D or D- beginning Spring 2020. See P+ below. Specified courses may also be graded on a Pass/Fail basis. Excluded from GPA)
P+	Pass (Under Pass/Fail option, grades of C- and above converted to P+ beginning Spring 2020 to address non-standard grading during a global pandemic. Excluded from GPA)
PR	Pass with Remediation (Anschutz Medical Campus. Excluded from GPA)
S	Satisfactory (Course requirements are satisfied or expectations are met. Excluded from GPA.)
U	Unsatisfactory (Course requirements are not satisfied or expectations are not met. Excluded from GPA.)
W	Withdrew
H/HP/P	Honors, High Pass, Pass. (For specified courses at the Anschutz Medical Campus within the CU School of Medicine. Honors indicates highest achievement, Pass indicates C- or better. Excluded from GPA.)

- 'P+' and 'P' are not included in the grade point average, but credit is earned. 'F' is included in grade point average with no credit earned.
- Credit is earned for an 'S'. No credit is earned for a 'U'. Neither 'S' nor 'U' is included in grade point average calculations.

No Credit (NC)

Students may register for a course on a no-credit basis with the consent of their instructor and the dean of their school or college. No grade or credit is awarded, and tuition assessed is equivalent to the for-credit rate. The transcript reflects the name of the course taken and an N/C notation.

Incomplete Grades

An 'I' is an incomplete grade. Policies with respect to 'I' grades are available in the individual School, College, or Program offices.

An 'I' is given only when students, for reasons beyond their control, have been unable to complete course requirements. A substantial amount of work must have been satisfactorily completed before approval for such a grade is given.

The instructor who assigns an 'I' sets the conditions under which the course work can be completed and the time limit for its completion. The student is expected to complete the requirements by the established deadline and not retake the entire course.

It is the instructor's and/or the student's decision whether a course should be retaken. The student must re-register for the course and pay the appropriate tuition.

The final grade (earned by completing the course requirements or by retaking the course) does not result in deletion of the 'I' from the transcript. A second entry is posted on the transcript to show the final grade for the course, with a notation that the course was 'originally graded as incomplete.'

At the end of one year, 'I' grades for courses that are not completed or repeated are changed to an 'F'.

Course Numbering

The information below provides the general guidelines by which course numbers are assigned for the CU Anschutz Medical Campus; some variances to the structure below may exist. Please contact the Office of the Registrar with any questions about course numbering.

Courses are comprised of a 4-digit number, preceded by the alpha department/subject code.

- The first digit of a course are indicative of the academic level:
 - 0: lower level or remedial, not applicable toward graduation
 - 1: Undergraduate freshman level
 - 2: Undergraduate sophomore level
 - 3: Undergraduate junior level
 - 4: Undergraduate senior level
 - 5: 1st year professional
 - 6: Masters level or 2nd year professional
 - 7: Doctoral level or 3rd year professional
 - 8: Doctoral level or 4th year professional; must be used for doctoral level thesis
- Second and third digits:
 - 00-83: To be used for all courses with the exception of the following:
 - 84-90: Independent Study
 - 91: Practicum
 - 92: Readings
 - 93: Internships
 - 94: Master's candidate
 - 95: Master's report
 - 99: Doctoral thesis
- Fourth digit:
 - Each school, college, or department should determine its own structure for use of this numeric position.

Enrollment Status

A student's enrollment status (Full-Time, Half-Time, Less than Half-Time) at CU Anschutz is determined by the number of credits in which they are enrolled, and may vary by School, College, Program, or Department. Such statuses are defined below. For questions regarding Financial Aid eligibility, relative to enrollment status, please contact the Financial Aid & Scholarships Office (Fin.Aid@cuanschutz.edu).

NOTE: Enrollment in required Dissertation coursework renders a student as Full-Time, regardless of credits or academic term.

Anesthesiology

Anesthesiology Assistant (MS)

- Fall and Spring terms:
 - 0.001-2.999: Less than Half-Time
 - 3.000-4.999: Half-Time
 - 5.000+: Full-Time
- Summer terms:
 - 0.001-1.999: Less than Half-Time
 - 2.000-2.999: Half-Time
 - 3.000+: Full-Time

CHA/PA

Master of Physician Assistant Studies (MPAS)

- Fall and Spring terms:
 - 0.001-2.999: Less than Half-Time
 - 3.000-4.999: Half-Time
 - 5.000+: Full-Time
- Summer terms:
 - 0.001-1.999: Less than Half-Time
 - 2.000-2.999: Half-Time
 - 3.000+: Full-Time

College of Nursing

Graduate-Level College of Nursing

- Fall and Spring terms:
 - 0.001-2.999: Less than Half-Time
 - 3.000-4.999: Half-Time
 - 5.000+: Full-Time
- Summer terms:
 - 0.001-1.999: Less than Half-Time
 - 2.000-2.999: Half-Time
 - 3.000+: Full-Time

Undergraduate-Level College of Nursing

- All terms:
 - 0.001-5.999: Less than Half-Time
 - 6.000-11.999: Half-Time
 - 12.000+: Full-Time

Colorado School of Public Health

Masters of Public Health (MPH), Master of Science (MS), Doctoral Programs (DrPH and PhD), and Certificates

- Fall and Spring terms:
 - 0.001-2.999: Less than Half-Time
 - 3.000-4.999: Half-Time
 - 5.000+: Full-Time
- Summer terms:
 - 0.001-1.999: Less than Half-Time
 - 2.000-2.999: Half-Time
 - 3.000+: Full-Time

Graduate

Graduate-Level College of Nursing, Colorado School of Public Health, Graduate School, Office of Research Education, Graduate-level Pharmacy

- Fall and Spring terms:
 - 0.001-2.999: Less than Half-Time
 - 3.000-4.999: Half-Time
 - 5.000+: Full-Time
- Summer terms:
 - 0.001-1.999: Less than Half-Time
 - 2.000-2.999: Half-Time
 - 3.000+: Full-Time

Graduate Non-Degree

Graduate-Level Non-Degree Certificate, Graduate-Level Non-Degree

- Fall and Spring terms:
 - 0.001-2.999: Less than Half-Time
 - 3.000-4.999: Half-Time
 - 5.000+: Full-Time
- Summer terms:
 - 0.001-1.999: Less than Half-Time
 - 2.000-2.999: Half-Time
 - 3.000+: Full-Time

Physical Therapy

Doctor of Physical Therapy (DPT)

All terms:

- 0.001-4.999: Less than Half-Time
- 5.000-9.999: Half-Time
- 10.000+: Full-Time

School of Dental Medicine

Doctor of Dental Surgery (DDS), Advanced Standing International Student Program (ISP), Orthodontics, Periodontics

- All terms:
 - 0.001-4.999: Less than Half-Time
 - 5.000-9.999: Half-Time
 - 10.000+: Full-Time

School of Medicine

Doctor of Medicine (MD)

- Fall and Spring terms:
 - 0.100-0.999: Half-Time
 - 1.000+: Full-Time
- Summer terms:
 - 0.001-0.999: Less than Half-Time
 - 0.100-0.499: Half-Time
 - 0.500+: Full-Time

Skaggs School of Pharmacy & Pharmaceutical Sciences

Doctor of Pharmacy (PharmD)

- Fall and Spring terms:
 - 0.001-4.999: Less than Half-Time
 - 5.000-9.999: Half-Time
 - 10.000+: Full-Time
- Summer terms:
 - 0.001-4.999: Less than Half-Time
 - 5.000-5.999: Half-Time
 - 6.000+: Full-Time

North American-Trained Doctor of Pharmacy (PharmD), International-Trained Doctor of Pharmacy (PharmD)

- All terms:
 - 0.001-4.999: Less than Half-Time
 - 5.000-9.999: Half-Time
 - 10.000+: Full-Time

Registration

Information on Registration

Students who self-enroll may do so via their student portal (<https://www.ucdenver.edu/ucdaccess/>). Students who do not self-enroll are encouraged to connect directly with their school, college, program, or department. Prior to registration, students should verify their emergency contact information, and resolve any holds, including Selective Service and/or financial obligations to the University. Additional information on unique enrollment statuses and process is below.

Auditing Courses and No Credit Registration

A student may not audit courses at the Anschutz Medical Campus. Instead, a student who has been officially accepted may register in a course for no credit and pay the appropriate tuition and fees. Students must indicate no credit registration at the time of registration or during the drop/add period.

"Request for No Credit" forms are available through the Registrar's Office website (https://www1.ucdenver.edu/docs/librariesprovider266/forms/nocreditrequest.pdf?sfvrsn=49d3a5b9_2).

Canceled Classes

Courses listed in the schedule of courses are those currently offered by the schools, college and programs at Anschutz Medical Campus. The Anschutz Medical Campus reserves the right to cancel, postpone, divide, change the time of, and combine scheduled classes, and/or change professors. Students enrolled in classes which are canceled will have the opportunity to add another class.

Enrollment Status

A student's enrollment status (Full-Time, Half-Time, Less than Half-Time) at CU Anschutz is determined by the number of credits in which they are enrolled, and may vary by School, College, Program, or Department. Such statuses are defined here (p. 75). For questions regarding Financial Aid eligibility, relative to enrollment status, please contact the Financial Aid & Scholarships Office (Fin.Aid@cuanschutz.edu).

Intercampus Enrollment

A degree-seeking student may enroll for 2 courses or 6 semester hours (whichever is greater) at the CU Colorado Springs campus and the CU Boulder campus with the approval of the student's academic dean or designate. Tuition and fees will be assessed at the student's home campus rate; however, the student must be enrolled for at least one course the entire semester on the home campus.

Intercampus registration forms must be obtained from the Registrar website (https://www1.ucdenver.edu/docs/librariesprovider266/forms/intercampusenrollmentform.pdf?sfvrsn=e9d1a5b9_2). Once completed, the forms are to be taken to the Student's school/program for the appropriate approval and signature, and returned to the Registrar's Office. Students may register concurrently during the drop/add period of the host campus. Questions concerning concurrent registration may be directed to the Registrar's Office at 303-724-8000.

Non-Enrollment Policy

Current active students who do not enroll in courses for 3 consecutive academic terms may be administratively withdrawn, and may further be required to reapply for admission at the discretion of their academic school, college, or program.

Northern Colorado Exchange Agreement

The University of Colorado in conjunction with Colorado School of Mines, Colorado State University, and the University of Northern Colorado have a reciprocal agreement by which students may take courses at participating institutions which are not offered at their home institutions. For further information, please contact the Registrar's Office by email at registrar@cuanschutz.edu (Registrar@CUAnschutz.edu).

Schedule Changes

Dropping Courses

Students are permitted to drop courses during the first 10 class days of the fall and spring terms. Students are permitted to drop courses during the first 5 days of the summer term. Dropped courses will not appear on the student's transcript.

Withdrawing from Courses

After the fifth (summer) or tenth (fall, spring) day of the term, courses can no longer be dropped. A student can withdraw from individual courses by completing a course withdrawal form. Both the instructor and the appropriate school/college/program signatures are required on the form. Tuition will not be refunded, even if the withdrawal is allowed. A grade of "W" will appear on the transcript. In order to receive any type of tuition adjustment, the student will need to go through a formal appeals process with their school/college/program.

Withdrawing Completely from the Semester

Financial aid recipients who are withdrawing completely (dropping all classes) for a particular term should contact the Financial Aid and Scholarships Office (FASO) prior to withdrawing.

Adding Courses

Students normally may add courses to their original registration during the first ten (10) days of the fall and spring semesters and during the first five (5) days of the summer term, provided there is space available and subject to the rules of the school/college/program offering the course.

Students receiving VA benefits must report any change in schedule to the veteran's representative in the Financial Aid and Scholarships Office (FASO).

Tuition Assistance Benefit

Course Eligibility & Restrictions

Courses must have a "University of Colorado Anschutz Main Campus" designation to be eligible for the Tuition Assistance Benefit on University of Colorado Anschutz campus. You can find the campus designation in course details or Class Search. The following restrictions apply:

- Courses offered through Continuing Education, audited courses, extended studies, Outreach Programs, Study Abroad and/or noncredit courses do not qualify for the Tuition Assistance Benefit.
- Employees utilizing the tuition waiver cannot participate in concurrent registration.
- An employee's coursework must be taken outside scheduled working hours or with an adjusted work schedule of equivalent hours acceptable to the employing department.
- An employee cannot use the 9 credit hour waiver during an academic year (one or more semesters) in which their dependent is using the discount and vice versa.
- Employees who are classified for tuition purposes as nonresident undergraduates cannot enroll in more credit hours than the benefit they are using in any given semester.

- Employees who are enrolled full time can use the benefit during the fall or spring semesters.
- Students enrolled in courses part of the professional programs (School of Dental Medicine, Skaggs School of Pharmacy, School of Medicine) do not qualify for the Tuition Assistance Benefit.

Eligible CU Anschutz Programs/Courses:

- College of Nursing
 - Only courses held at Anschutz Medical Campus are eligible.
- Colorado School of Public Health
 - The following courses are **NOT** Eligible: PUBH 6606 MPH Practicum, BIOS 6990 MPH Capstone Preparation - BIOS, CBHS 6990 MPH Capstone Preparation - CBHS, EHOH 6990 MPH Capstone Preparation - EHOH, EPID 6990 MPH Capstone Preparation - EPID, HSMP 6990 MPH Capstone Preparation - HSMP, and PUBH 6991 MPH Capstone Integration.
- Graduate School Programs/Courses
- The following Pharmacy programs (PharmD is ineligible)
 - Pharmaceutical Sciences
 - Toxicology
 - Pharmaceutical Outcomes Research

Ineligible CU Anschutz Programs/Courses

- School of Medicine programs
- School of Dental Medicine programs
- Physical Therapy program
- Skaggs School of Pharmacy PharmD program (traditional & non-traditional)
- School of Medicine Physician Assistant Program (CHA/PA) program
- Anesthesiology program
- Additional ineligible CU Anschutz courses:
 - Courses offered through extended studies
 - All other programs not specifically listed in the above eligible section.

CU Anschutz Employees may register up to seven (7) days prior to the start of the semester or the first day of their desired class, whichever is earlier. Dependents applying for employee tuition waiver can register when enrollment opens for the semester.

Student Records

Transcripts, Enrollment/Degree Verification, and Diplomas

Transcripts

An official transcript is a comprehensive record of academic coursework and progress within the University of Colorado system that reflects earned degrees as well as credits accepted in transfer or by exam. Incompletes, failures and withdrawals are not expunged. Transcripts will not be issued if the student has overdue financial obligations, or other outstanding obligations due to the University of Colorado.

To request an official transcript, please visit our ordering system supported by Parchment (<https://www.parchment.com/u/registration/32956383/account/>). Additional information on transcripts, including pricing and delivery methods, is available through the Registrar's Office (<https://www.cuanschutz.edu/registrar/student-resources/transcripts/>).

Enrollment Verification

Need verification of your enrollment status for a lender or other provider? Current-semester enrollment verifications are typically available online starting in late September for Fall, late February for Spring, and late June for Summer.

To obtain an enrollment verification:

1. Log in to your UCDAccess student portal (<https://www.ucdenver.edu/ucdaccess/>).
2. Click using the three vertical dots at the top right of the screen, select the Registration & Records option from the drop down. Then click on the **Enrollment Verification** tile. This will take you to the student page of the National Student Clearinghouse website. You must be logged in through UCDAccess to obtain the free enrollment verification.
3. Click Obtain **Enrollment Certificate** to view and print an official verification.

The Verification of Enrollment is official and does not require a signature or seal from the University. It contains the dates of the term, student status and anticipated graduation date, and is specific to each student. This may be submitted to loan, insurance, or other requesting companies, as well as to the military as proof of enrollment.

Degree Verification

A degree verification is not a diploma; it lists a student's degree on Office of the Registrar letterhead and bears the registrar's seal and signature.

Current and former students can order a degree verification by emailing their request to Registrar@CUAnschutz.edu, which must include the student's name, student ID, date of birth, degree awarded (e.g. Doctor of Medicine, etc.), and the mailing or email address to which the verification should be sent.

Degree verification requests are processed in the order in which they are received, and take 3-5 business days to process.

Diplomas

How to Apply for Graduation:

Meet With Your Advisor

Make an appointment with your assigned advisor in your school or college's Advising Center to verify graduation requirements and to make sure you'll meet them by the end of the semester.

- College of Nursing (<https://nursing.cuanschutz.edu/>)
- Colorado School of Public Health (<https://coloradosph.cuanschutz.edu/about-us/>)
- The Graduate School (<https://graduateschool.ucdenver.edu/about-us/>)
- School of Dental Medicine (<https://www.ucdenver.edu/academics/colleges/dentalmedicine/AboutUs/Pages/ContactUs.aspx>)
- School of Medicine (<https://medschool.cuanschutz.edu/deans-office/about-us/contact-us/>)
- Skaggs School of Pharmacy and Pharmaceutical Sciences (<https://pharmacy.cuanschutz.edu/about-us/>)

Apply for Graduation

Once you have verified that you're on track to graduate, use your UCDAccess student portal to apply for graduation:

1. Once logged in, click on Academics under your Student Center.
2. Click Apply for Graduation

Want to Walk at Commencement?

If you plan to participate in commencement ceremonies, you will need to register for this separately on the Commencement website: www.cuanschutz.edu/commencement (<http://www.cuanschutz.edu/commencement/>).

Important Notes Regarding Diplomas and Graduation

- Watch for information concerning transcripts, diplomas, Commencement, etc., via email through your CU Anschutz account following the acceptance of your graduation application.
- Diplomas for degrees conferred at Anschutz Medical Campus are automatically mailed out to the diploma address in the student's record.

Transfer Credit

Minimum Transfer Standards

Student course work of comparable content and scope to that of CU Anschutz curriculum may be considered for transfer credit if it was completed at a college or university with regional accreditation, please refer to the school/college specific policy. If coursework was completed at an institution not regionally accredited, the student may specifically request that credit be considered in transfer by initiating a review process that begins with the student's academic advisor and is approved by the dean responsible for the student's curriculum.

Undergraduate Students

Generally, courses in which a grade of C or better (2.00) was earned are considered for transfer however; please check with your program for specific requirements. Courses in which a grade of Pass (P) was earned are considered for transfer only if a grade of Pass at the sending institution meets the defined letter grade requirement set by your program. Courses identified on transcripts as State of Colorado guaranteed transfer courses (gtPathways) are always accepted in transfer (with C- or better grades) and applied to degree requirements per gtPathways guidelines.

Undergraduate transfer credit older than 10 years will not be initially transferred. Credit older than 10 years will be reviewed for applicability to degree requirements by the academic department. To review the policy in full, please click here (<https://www.ucdenver.edu/policies/>) and search policy number 7006.

Graduate Students

Please review the specific requirements for minimum transfer standards in your program. For information on Prior Learning Assessment credit, please review our campus policy here (https://www.ucdenver.edu/docs/librariesprovider284/default-document-library/7000-student-affairs/7007--awarding-graduate-credit-from-prior-learning-sources.pdf?sfvrsn=7555fdb2_2).

Credit Hour Conversion

The University of Colorado Anschutz Medical Campus is on a 16-week fall and spring semester system. Summer terms, study abroad programs, and independent learning vary in length but are reported in semester hours. Students who transfer from a quarter-based institution will receive the following conversion:

1 quarter hour = 0.67 semester hours

Example: 4 quarter hours = 2.7 semester hours

School/College Specific Policy

For more information on your program's transfer credit policy, please refer to the links below. For personalized assistance with your transfer credits, we recommend reaching out to your program advisor directly.

College of Nursing

For information regarding the College of Nursing transfer credit policy please see here (<https://nursing.cuanschutz.edu/admissions/transfer-credit/>).

Colorado School of Public Health

For transfer credit requirements and to submit a transfer credit request, please see the Transfer Credit Approval Form (https://coloradosph.cuanschutz.edu/docs/librariesprovider151/default-document-library/transfer-credit-approval-form-fillable.pdf?sfvrsn=6c89f5b9_3).

Graduate School

For information regarding the Graduate School's transfer credit policy please refer to the Graduate School Handbook (<https://graduateschool.cuanschutz.edu/docs/librariesprovider138/denver-anschutz-graduate-school/resources/gs-policies-and-procedures.pdf#%5B%7B%22num%22%3A50%2C%22gen%22%3A0%7D%2C%7B%22name%22%3A%22XYZ%22%7D%2C52%2C370%2C0%5D>).

School of Dental Medicine

The School of Dental Medicine does not accept transfer credit. Please reach out to your program advisor for more information.

School of Medicine

The University of Colorado School of Medicine accepts transfer students from another LCME accredited medical school in rare circumstances. For more information please refer to the School of Medicine transfer credit policy here (https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/transferstudentpolicy20.pdf?sfvrsn=5828a9b9_2).

Anesthesiologist Assistant Program

We do not accept credits from previous courses or credit for experiential learning. All students are required to complete 100% of the MSA curriculum offered by the University of Colorado.

Doctor of Physical Therapy

The CU PT Program is unable to accept transfer credits from other DPT programs due to lack of consistency across plans of study.

Physician Assistant Program

Transfer credit is not accepted. Applicants should be aware that all courses in the program curriculum are required. There is not an option for the curriculum to be accelerated.

Skaggs School of Pharmacy

The Skaggs School of Pharmacy does not accept transfer credit. Please refer to the admission page (<https://pharmacy.cuanschutz.edu/academics/pharmd/admissions-information/>) for more information.

Courses Not Accepted for Transfer

Developmental, remedial, religious doctrinal, religious training, single religion, outdoor leadership, and student orientation courses are not

accepted in transfer. Prior learning credit through vocational/technical courses, internship, cooperative education, life experience, and work experience are not accepted in initial transfer, but exceptions may be granted by the dean responsible for the student's curriculum. Independent study, special topics, seminars, and experiential learning programs that lack catalog descriptions are not accepted in initial transfer but may be reviewed for transfer consideration by the corresponding academic department. Students wishing to appeal transfer credit decisions should contact their school or college advising office and be prepared to provide a syllabus for the course they are appealing. Except for developmental/remedial courses, academic departments make final decisions on transfer credit appeals.

Program pathways and/or courses identified in transfer agreements between the Anschutz Medical Campus and any internal/external partnerships in an academic or programmatic memorandum of understanding will be honored in both the content and program eligibility by which both parties agreed, upon a student's initial transfer. Students who transfer into other CU Anschutz programs are subject to the additional transfer policies of their receiving school or college, which may result in changes to applicability of credit.

Appeals Process

Transfer credit that was not initially accepted may be appealed through the advising office. Typically, the student will be required to provide a syllabus for the transfer course from the term the course was taken. If it is an international course, the syllabus will need to be in English and the original language. Once the student's petition is approved, the advisor will request that the course be accepted by the Office of the Registrar.

If a dispute cannot be resolved between the student and CU Anschutz, a student is at liberty to file a formal complaint with the Colorado Department of Higher Education (<https://higher.ed.colorado.gov/Academics/Complaints/FileComplaint.aspx>).

Schools, Colleges, and Programs

Schools, Colleges, Programs, & Departments

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- College of Nursing (p. 83)
 - Nursing (BS) (p. 98)
 - Nursing - Master of Science (MS) (p. 102)
 - Nursing Certificates (p. 108)
 - Nursing - Doctorate in Nursing Practice (DNP) (p. 112)
 - Nursing (PhD) (p. 120)
- Colorado School of Public Health (p. 123)
 - Public Health (MPH) (p. 125)
 - Public Health Certificates (p. 136)
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 - Dental Medicine: Dual Degree (DDS/MPH) (p. 259)
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- School of Medicine (p. 280)
 - Anesthesiology (MS) (p. 281)
 - Medicine (MD) (p. 288)
 - Office of Research Education (p. 334)
 - Physical Therapy (DPT) (p. 384)
 - Physician Assistant Studies (MPAS) (p. 394)
- Skaggs School of Pharmacy and Pharmaceutical Sciences (p. 410)
 - Online Pharmacy Programs (p. 412)
 - Pharmacy (PharmD) (p. 414)
 - Pharmacy Dual Degree Programs (p. 422)
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 - Pharmacy Master of Science (MS) Programs (p. 425)
 - Pharmacy Residencies (p. 429)
 - School of Pharmacy PhD Programs (p. 429)

Center for Interprofessional Practice and Education (CIPE)

The University of Colorado Anschutz Medical Campus was intentionally designed to facilitate interprofessional education. Education buildings are shared amongst the 8 health professions programs on campus and students regularly interact both inside and outside the classrooms. At the heart of the education is the Fulginiti Pavilion which houses the Center for Bioethics and Humanities as well as the Center for Interprofessional Practice & Education Program.

IPE Program Goal: To improve population health, quality of care, and reduce health care costs through the creation of a patient-centered, collaborative, practice ready workforce with competencies in: quality and safety, values and ethics, and teamwork and collaboration in the context of systems and systems based practice.

Our Longitudinal Goal: IPE curriculum is being integrated into preclinical and clinical training for ALL University of Colorado health profession students and will establish, teach and evaluate campus-wide student competencies in teamwork, collaborative interprofessional practice and quality and safety, with a particular focus on vulnerable and underserved populations.

- The Interprofessional Education (IPE) Program develops, administers and evaluates the longitudinal interprofessional education curriculum for all health professions students on the CU Anschutz Medical Campus.
- The curriculum brings students together to learn and practice skills during their preclinical and clinical training.
- The IPE Program consists of 3 components: classroom team based learning, simulation experiences at the Center for Assessing Professional Excellence (CAPE), and practicum experiences at clinical sites.
- AMC graduates will be competent to participate as members of a collaborative interprofessional workforce.

Discover more about each program that participates in Interprofessional Education on the CU Anschutz Medical Campus:

- Dental Medicine (p. 253)
- Medicine (p. 288)
- Nursing (p. 83)
- Pharmacy (p. 410)
- Physical Therapy (p. 384)
- Physician Assistant (p. 394)
- Public Health (p. 123)

Center for Interprofessional Practice & Education

Fulginiti Pavilion for Bioethics and Humanities
13080 E 19th Ave., Mailstop 8700
Aurora, CO 80045

Email: ipehelp@cuanschutz.edu (ipehelp@cuanschutz.edu)

Phone: 303-724-4639

Fax: 303-724-6371

IPE Orientation

IPE Orientation occurs at the first week of September in the fall term usually on the same day as the AMC Welcome Wednesday event, and is an introduction to the importance of IPE in healthcare.

Students will have the opportunity to meet and work with their IPE team for the following term. It is a half day dedicated to the orientation of the Interprofessional Education (IPE) program and what to expect with Collaborative Team Paced Learning.

Longitudinal IPE Curriculum Timeline: IPE Curriculum (IPCP & IPHE) Interprofessional Collaborative Practice (IPCP 5000)

The Interprofessional Collaborative Practice (IPCP) is a one semester course required of health professions students from the, dental, medical, nursing, pharmacy, physical therapy, and physician assistant programs on the Anschutz Medical Campus. There may also be students participating from the School of Public Health. The course takes place over 7 sessions in the spring of year 1. This course develops core competencies in teamwork and collaboration for first-year health professions students. Student will learn in interprofessional teams coached by interprofessional faculty, develop essential communication skills and process for simultaneous and sequential teams, and provide feedback on individual and team performance to improve interprofessional collaboration. Sessions are two hours in length, and involve active learning in teams using a team paced learning method to engage learners in **Teamwork & Collaboration competency domains:**

This course has 4 overarching goals: Teamwork & Collaboration

- Describe the process of team development and the roles and practices of effective teams.
- Demonstrate communication skills and processes within teams.
- Recognize components of and perform effectively on sequential and simultaneous interprofessional collaborative teams.
- Provide feedback on individual and team performance to improve effectiveness of interprofessional teamwork.

Outcomes and Learning Objectives:

- Describe the process of team development, and the roles and practices of effective teams.
- Communicate with team members to clarify each member's responsibility in providing collaborative patient care.
- Recognize components of and perform effectively on sequential and simultaneous interprofessional collaborative teams.
- Explore interprofessional communication and teamwork processes which address the goals of collaborative patient care.
- Engage health and other professionals in shared patient-centered and population focused problem-solving.
- Give timely, sensitive, instructive feedback to others about their performance on the team, respond respectfully as a team member to feedback from others.
- Describe the potential impact of interprofessional collaboration on health care outcomes.

Interprofessional Healthcare & Health Equity (IPHE 6000)

The Interprofessional Healthcare Ethics and Health Equity (IPHE) is a one semester course required of health professions students from the dental, medical, nursing, pharmacy, physical therapy, and physician assistant programs on the Anschutz Medical Campus. There may also be students participating from the School of Public Health. The course takes place over 7 sessions in the fall of year 2. This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice. This course integrates interprofessional collaboration and teamwork to teach students ethical theory and reasoning, professional ethics and its historical origins, and approaches to health care decision-making. Sessions are two hours in length, and involve active learning in teams using a team paced learning method to engage learners in **Value and Ethics competency domains**:

This course has 3 overarching goals: Values & Ethics

- Awareness: recognize when you are facing an ethical issue
- Analysis: study the ethical issue to arrive at a decision about the right thing to do
- Action: develop and practice executing your plan for how to do what's right

Outcomes and Learning Objectives:

- Identify health profession values, principles, and professional codes of ethics.
- Understand the historical context of health professions ethics.
- Identify social, structural, and systemic ethical issues and how they impact healthcare access, delivery of care, and patient outcomes.
- Apply key ethical concepts to identifying and exploring ethical dilemmas.
- Demonstrate approaches to addressing ethical dilemmas.
- Demonstrate Interprofessional collaboration when addressing ethical dilemmas.
- Compare and reflect on professional roles and responsibilities in the context of ethical dilemmas.
- Identify the importance of situational leadership when facing ethical dilemmas.

Interprofessional Clinical Transformations (IPCT)

Clinical Transformations (CT) is a single simulation experience required of each student at the Center of Advancing Professional Excellence (CAPE). The timeline for this experience varies for each program. Students are placed in ad-hoc teams to practice the skills learned in IPED.

- **4 hour video monitored simulations:** students practice role shifts required to enable effective team leadership and followership
- **Scenarios:** acute care, outpatient, home visits
- **Team reflection:** Focus on teamwork & collaboration and address ethical and patient safety issues experienced in scenarios using briefs and debriefs

Interprofessional Clinical Integrations (IPCI)

Practicum Experiences at Clinical Sites

The third component of the IPE experience at CU also occurs at different times for each student dependent on the needs of their program and their clinical placements.

This component involves:

- Students learning and caring for patients in interprofessional teams
- Multiple settings including: hospitals, clinics, dental clinics, home visits, transitions in care, palliative care, special needs, etc.

CU IPE Open Campus Program activities: Starting Fall

The CU Center for Interprofessional Practice and Education (CU CIPE) aims to foster interprofessional collaboration at CU Anschutz and graduate team-ready practitioners with the skills needed to collaborate as a member of an interprofessional team. In this effort, the CU CIPE offers faculty, staff, and students from all academic units, institutes, and programs to engage in the Interprofessional Open Campus Program (IOCP).

The IOCP connects students, faculty, and staff members from across the CU Anschutz campus, regardless of professional background, in programing meaningful for the individual and the campus community. The IOCP consists of a menu of program offerings that resonate with the campus community. Additionally, IOCP offerings aim to be inclusive of all members of the AMC community whenever possible.

College of Nursing

Contact Information

Office location: Education II North, Room 3255
 Mailing address: 13120 East 19th Avenue, 3rd Floor, Aurora, CO 80045
 Phone number: 303-724-1812
 Web Page: <https://nursing.cuanschutz.edu/>
 Email: nursing.admissions@cuanschutz.edu
 (nursing.admissions@ucdenver.edu)

College of Nursing Administration

Elias Provencio-Vasquez, PhD, RN, FAAN, FAANP - Dean and Professor,
 Interim Associate Dean of Clinical and Community Affairs

Amy J. Barton, PhD, RN, FAAN - Senior Associate Dean for Faculty and
 Professor | Daniel and Janet Mordecai Endowed Chair in Rural Health
 Nursing

Kelly D. Stamp, PhD, NP, RN, CHFN, FAHA, FAAN - Associate Dean of
 Academic Programs and Associate Professor | Loretta C. Ford Nurse
 Practitioner Endowed Professor

Teri L. Hernandez, PhD, RN - Associate Dean of Research and Scholarship
 and Professor

Anthony Airhart, BBA - Associate Dean of Finance and Administration

Tammy Spencer, DNP, RN, CNE, ACNS-BC, CCNS - Assistant Dean of
 Undergraduate Programs and Assistant Professor

Krista Estes, DNP, FNP-C - Assistant Dean of Graduate Programs and
 Associate Professor

Traci Snedden PhD, RN, CPNP, CNE, FNAP - Assistant Dean of DNP
 Programs and Associate Professor

Jacqueline Jones, PhD, RN, FAAN, FRCNA - Assistant Dean of PhD
 Program and Professor

Laura D. Rosenthal, DNP, ACNP, FAANP - Senior Assistant Dean of
 Academic Operations and Associate Professor

Programs

The College of Nursing offers the following programs:

Bachelor of Science in Nursing (p. 98)

Master of Science in Nursing (p. 102)

Nursing Certificates (p. 108)

Doctorate in Nursing Practice (p. 112)

Doctor of Philosophy (p. 120)

Faculty Directory

Visit our website to view our Faculty Directory (<https://nursing.cuanschutz.edu/about/faculty-directory/>)

Courses

NURS 3004 - Rural and Indigenous Health Perspectives (0.5 Credits)

This course provides an overview of the unique health care needs of rural and Indigenous populations. Students will engage in learning activities that foster cultural awareness and cultural humility.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 3023 - Patient-Centered Health Assessment (2.5 Credits)

Focus on knowledge, skills and attitudes needed for patient-centered assessment utilized in nursing practice. Evidence-based assessment skills acquired in the skills and simulation laboratory. Didactic content presented using case studies and multiple learning strategies.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.5.

Typically Offered: Fall, Spring, Summer.

NURS 3034 - Foundations of Nursing Practice (4 Credits)

Students investigate the relationship between theory and evidence-based practice to develop the foundations of a generalist nurse.

Critical thinking, clinical judgement, and communication strategies are emphasized.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

NURS 3080 - Nursing Research and Evidence-Based Practice (3 Credits)

This course will critically evaluate research and clinical expertise to determine optimal patient care utilizing professional writing.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

NURS 3140 - Pathophysiology for Nurses (3 Credits)

Course will focus on essential concepts underlying pathophysiology and how they pertain to specific body systems. Principles of genetics, environment, cellular biology/adaptation, and immunity will be emphasized to facilitate understanding of exemplar disease processes across major human organ systems.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

NURS 3150 - Pharmacology for Nurses (3 Credits)

Focus on essential knowledge and attitudes for beginning nursing practice using pharmaceutical agents. Emphasis on integrating knowledge from other foundational courses to learn safe medication practices using a body systems and drug families approach with evidence based foundations.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

NURS 3216 - NURS Honors Seminar I (1 Credit)

Study of topics relevant to development of the senior thesis proposal and broader discussions and readings related to ethical and leadership roles in the profession of nursing. It is the first in a series of two, junior level Honors Seminars. Prerequisites: Junior level standing in the College of Nursing; enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3226 - NURS Honors Seminar II (1 Credit)

Study of topics relevant to development of the senior thesis proposal and broader discussions and readings related to ethical and leadership roles in the profession of nursing. It is the second in a series of two junior level Honors Seminars. Prerequisites: Junior level standing in the College of Nursing; completion of Honors Seminar I; enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3267 - Health Promotion (2 Credits)

Course explores health promotion and disease prevention in individuals, families, and populations across the lifespan. Determinants of health, health disparities, and levels of prevention are introduced. Cultural awareness, models/theories to promote health, and evidence based strategies are applied.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3337 - Nursing Care of Childbearing Families (5 Credits)

Integrates family-centered care, evidence-based practice, safety, teamwork and collaboration, informatics, and quality with emphasis on application of the concepts of health promotion, development, and transitions inherent with childbearing. Prerequisite: Admission to the BS program, successful completion of all beginning level courses.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3447 - Nursing Care of Children and Families (5 Credits)

Students learn to provide nursing care to children and families by integrating the principles of family-centered care, evidence-based practice, quality and safety, teamwork and collaboration, informatics, genetics, emphasizing health promotion, child development, disability, and transition into the community.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3567 - Mental Health Nursing Practice across the Lifespan (5 Credits)

Focuses on intermediate level of application of knowledge, skills and attitudes of nursing care for patients with mental health issues. Students provide person-centered nursing care to individuals and groups with alterations in mood, cognition, and behaviors with their families across the lifespan and continuum of care. Department Consent Required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall, Spring, Summer.

NURS 3617 - Medical-Surgical Nursing Practice I (6.8 Credits)

Beginning level course focuses on applying pathophysiology, pharmacology and nursing assessment in providing care to individuals in a variety of environments. Students will learn foundational aspects of quality and safety competencies. Simulation will allow the beginning learner to apply knowledge and work on skill acquisition.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.8.

Typically Offered: Fall, Spring, Summer.

NURS 3667 - Nursing Care of the Older Adult (2 Credits)

Students build upon previous knowledge, skills, and attitudes to learn how to provide nursing care for a demographically large and diverse population of older adults. Areas examined include: polypharmacy, chronic conditions, physiologic changes, myths, stereotypes, and culturally diverse life experiences.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3727 - Clinical Progression (2 Credits)

Clinical remediation is a required review of clinical competencies and professional role behaviors following interruption in the baccalaureate nursing program. an individualized learning contract will be developed. Demonstration of current competencies for safe care is required for continued progression. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 3880 - Nursing Role and Practice (2 Credits)

Learners explore the professional nurses' role in evolving healthcare systems. Context of learning is nursing history, theory, practice standards, issues and trends. Emphasis is futuristic for projections of professional nursing practice and effective teamwork. Foundational legal matters are interwoven throughout.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 4064 - Interprofessional Collaborative Practice (1 Credit)

This course develops core competencies in teamwork and collaboration for incoming health professions students. Students will learn in interprofessional teams coached by interprofessional faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Spring.

NURS 4074 - Inter-professional Healthcare Ethics & Health Equity (1 Credit)

This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice through inter-professional collaboration and teamwork.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Fall.

NURS 4080 - Professional Nursing: Transition into the Role (4 Credits)

Learners explore the professional nurses' role. Context for learning is nursing history, theory, practice standards, ethical-legal parameters, including emerging issues and trends. Emphasis is on student preparation for transitioning into the professional role with its independent, interdependent, and collaborative functions.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

NURS 4236 - NURS Honors Seminar III (1 Credit)

Topics are relevant to the senior thesis and students' career development as leaders in nursing. Seminars provide opportunity for students to share progress and insights with peers and to engage in topical discussions.

first of two senior level Honors Seminars. Prerequisites: Senior level standing in the College of Nursing; completion of Honors Seminars I (NURS 3216) and II (NURS 3226); enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4246 - NURS Honors Seminar IV (1 Credit)

Topics are relevant to the senior thesis and students' career development as leaders in nursing. Seminars provide opportunity for students to share progress and insights with peers and to engage in topical discussions. Second of two senior level Honors Seminars. Prerequisites: Senior level standing in the College of Nursing; completion of Honors Seminars I (NURS 3216), II (NURS 3226) and III (NURS 4236); enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4617 - Nursing Care of the Adult Patient with Complex Care Needs (6.7 Credits)

Building on concepts from previous coursework, apply theory, client-centered and evidence-based principles to comprehensively care for complex adult patients in acute care settings. Prerequisite: Successful completion of beginning and intermediate courses.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4727 - Independent Study (1-3 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

NURS 4777 - Community & Population Focused Nursing (5.5 Credits)

Course focuses on community-oriented & population-focused nursing practice. Using evidence-based practice & public health concepts; students assess, plan, implement, and evaluate health interventions to individuals, families, and populations. Emphasis is on environment, social justice, advocacy, interprofessional teamwork, and cultural awareness. Prerequisite: Admission to the BS program. Successful completion of beginning and intermediate Nursing courses.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.5.

Typically Offered: Fall, Spring, Summer.

NURS 4800 - Evidenced-Based Nursing Practice & Research for the RN (4 Credits)

Course introduces research processes and application in EBP. RN students learn to critically evaluate research findings for application in safe, quality nursing practice. Nursing theories and ways of knowing are explored regarding their impact on development of nursing science.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4824 - Professional Nursing Role Development - RN (4 Credits)

This course explores the influence of historical/philosophical foundations, issues, and future trends on professional practice and role development in RN-BS nursing education. Examines ethical decision-making, critical thinking, reflective practice, and accountability within the ethical and legal parameters of nursing practice. Prerequisite: Successful completion of all courses in the student's chosen sequenced program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

NURS 4850 - Introduction to Health Care Informatics - RN (3 Credits)

Understand and apply knowledge and skills in information and communication technologies to enhance the delivery of quality patient care. Concepts of data, information, knowledge and wisdom, to inform care delivery are examined. Professional roles and responsibilities will be explored.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4860 - Quality, Safety, & Innovative Nursing Practice-RN (4 Credits)

Understand and apply QSEN knowledge, skills, and attitudes to improve and evaluate care delivery within a health care microsystem. Concepts and processes of quality improvement based on evidence are identified. Teamwork/communication/collaboration and transitions of care are explored.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4877 - Population-Based Nursing - RN (6 Credits)

Course focuses on the professional nursing role in population-focused health promotion, disease prevention, and the continuum of care.

Theories, concepts, and social determinants of health inherent in population-based nursing and transitions of care are explored through course work and practicum.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4887 - Nursing Leadership in Complex Organizations I (4 Credits)

This course provides the foundation needed to provide oversight and accountability for care delivery across a variety of settings; continuing development as a leader/innovator in improving patient care; and a solid understanding of health care policy, economics, and complex organizations.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4897 - Nursing Leadership in Complex Organizations II (5 Credits)

Explores nursing leadership roles in promoting positive patient outcomes. Uses evidence-based practice to facilitate clinical reasoning/inquiry in providing safe, quality, person-centered care. Professional development is promoted through transformational leadership & management competencies. Includes capstone quality improvement project.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4917 - Immersion in Clinical Nursing (8 Credits)

Learning emphasizes synthesis of previous coursework/knowledge for transition to professional BS graduate nurse role. Through clinical immersion experiences, development of independent nursing practice, skills for safe, cost-effective, evidence-based clinical decision making & guided application of leadership & management theory & skills occurs.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5899 - Advanced Practicum (1-6 Credits)

Clinical course that focuses on demonstrating competence in the Advanced Practice role with a selected population.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

NURS 5901 - AG CNS Advanced Practicum I (1-3 Credits)

Clinical Nurse Specialist students begin to gather and organize data to base clinical decisions upon and promote moral agency. Students begin to advocate for patient and family health outcomes. Consultation and collaboration with an interdisciplinary team is emphasized. Prerequisite: NURS 6243; Co-requisite: NURS 6222, 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5902 - AG CNS Advanced Practicum II (1-3 Credits)

Clinical Nurse Specialist students demonstrate clinical decision making, refine diagnoses, and explore the role to influence of health systems change. Advocacy and moral agency for patient and family health outcomes continues. Consultation and collaboration with an interdisciplinary team are demonstrated. Prerequisite: NURS 6243; Co-requisite: NURS 6222, NURS 6761, NURS 5901

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5903 - AG CNS Advanced Practicum III (1-3 Credits)

Clinical Nurse Specialist students adapt clinical decisions to manage ill and aging patients. Students advocate for advancing patient and family health outcomes. Advocacy and moral agency for health outcomes are incorporated into consultation and collaboration with an interdisciplinary teamwork. Prerequisite: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5902

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5904 - AG CNS Advanced Practicum IV (1-3 Credits)

Clinical Nurse Specialist students formulate clinical decisions to manage ill and aging patients and patient and family health outcomes. Students practice as moral agents and are expected to manage health systems initiatives in consultation and collaboration with an interdisciplinary team. Prerequisite: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5903

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5911 - PNP Advanced Practicum I (3 Credits)

Primary Care Pediatric Nurse Practitioner students begin to provide direct patient care, health screenings, and organize data for clinical decisions. Students work with patients and families to establish health goals. An interdisciplinary approach is emphasized in clinical and classroom settings. Pre-requisites: NURS 6243, NURS 6222, NURS 6761, co-requisite NURS 6478

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5912 - PNP Advanced Practicum II (3 Credits)

Advanced beginner Primary Care Pediatric Nurse Practitioner students provide direct patient care, health screenings, and organize data for clinical decisions. Students begin to demonstrate interdisciplinary leadership and clinical decision making while working with patients and families to cultivate health goals. Requisite: NURS 5911, NURS 6478

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5913 - PNP Practicum III (3 Credits)

Primary Care Pediatric Nurse Practitioner students provide direct patient care and integrate patient data to provide well child care and manage acute and chronic conditions. Interdisciplinary care coordination is emphasized to assist patients and families to meet health goals.

NURS 5911, NURS 5912, NURS 6478 Co-req: NURS 6488

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5914 - PNP Advanced Practicum IV (3 Credits)

Primary Care Pediatric Nurse Practitioner students become competent at making clinical decisions for well child care, acute and chronic conditions, manage primary pediatric nursing care initiatives, and lead interdisciplinary teams to partner with patients and families to meet health goals. prereq: NURS 6478, NURS 6488, NURS 5911, NURS 5912, NURS 5913 co-req: NURS 6496

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5921 - AC-PNP Practicum I (2 Credits)

Acute Care Pediatric Nurse Practitioner students begin to provide direct patient care and gather and organize data for clinical decisions. Students will work with stable patients and families in primary care oriented settings. An interdisciplinary approach is emphasized. NURS 6243, NURS 6222, NURS 6761, NURS 6450; co-requisites: NURS 6450, NURS 6490

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5922 - AC PNP Advanced Practicum II (2 Credits)

Acute Care Pediatric Nurse Practitioner students provide direct patient care and utilize patient and diagnostic assessment data to make clinical decisions. Students begin to demonstrate interdisciplinary collaboration when working with patients and families to support health outcomes.

Prerequisite: NURS 5921 Co-requisite: NURS 6456

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5923 - AC PNP Advanced Practicum III (3 Credits)

Acute Care Pediatric Nurse Practitioner students provide direct patient care and integrate patient data to manage and support health outcomes for acute, complex, and chronic pediatric patients. Interdisciplinary care coordination across the continuum is emphasized.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5924 - AC-PNP Practicum IV (3 Credits)

Acute Care Pediatric Nurse Practitioner students become competent at making clinical decisions for acute, complex, critical, and chronic conditions; use independent and collaborative decision making as members of interdisciplinary teams; and assist patients and families with navigating healthcare systems. NURS 5923; Co-requisite NURS 6510

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5925 - AC PNP Advanced Practicum V (3 Credits)

Acute Care Pediatric Nurse Practitioner students evaluate and adapt therapeutic interventions, provide direct management for stable and unstable acute, complex, critical and chronic conditions; and advocate for improved patient/family outcomes through leadership on interdisciplinary teams and/or nursing initiatives. Prerequisite: NURS 5924 Co-requisite:

NURS 6520

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5931 - FNP Practicum I (3 Credits)

Family Nurse Practitioner students begin to provide direct patient care, physical and behavioral health screenings, and work with patients and their families to establish health and wellness goals. An interdisciplinary approach is emphasized in the clinical and classroom setting. Pre-req:

NURS 6761, NURS 6222, NURS 6243

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5932 - FNP Practicum II (3 Credits)

Family Nurse Practitioner students provide direct patient care through refining differential diagnoses based on available patient data. Students begin to demonstrate interdisciplinary leadership and clinical decision making while working with patients and their families to cultivate health and wellness goals. Pre-req: NURS 5931

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5933 - FNP Practicum III (4 Credits)

Family Nurse Practitioner students provide direct patient care through integrating available physical and behavioral patient data into the management of acute and chronic conditions. Interdisciplinary care coordination is emphasized to assist patients and families to meet health and wellness goals. Pre-requisite: NURS 5931, NURS 5932

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5934 - FNP Practicum IV (4 Credits)

Family Nurse Practitioner students make clinical decisions for acute and chronic conditions, manage primary nursing care initiatives, and lead interdisciplinary teams to partner with patients and families to meet health and wellness goals. Pre-Req: NURS 5931, NURS 5932, NURS 5933

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5941 - NMW Advanced Practicum I (4 Credits)

This clinical course is designed to apply knowledge attained from didactic coursework in GYN and Care of the Childbearing Family I and develop skills and attitudes necessary to successfully manage the midwifery care of women in the outpatient setting. Prerequisite: NURS 6204, NURS 6344

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 5942 - NMW Advanced Practicum II (4 Credits)

Clinical course designed to apply knowledge attained from Care of the Childbearing Family II and Primary Care of Women and develop skills and attitudes necessary to manage the midwifery care of women and newborns in the inpatient and outpatient settings. Prerequisite: NURS 5941

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5943 - NMW Advanced Practicum III: Integration (8 Credits)

Culminating clinical experience of the 3-semester sequence of clinical courses. This experience combines all areas of the Core Competencies in full-time clinical participation. Prerequisite: NURS 5941, NURS 5942

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5961 - WHNP Advanced Practicum I (4 Credits)

This clinical course is designed to apply knowledge attained from didactic coursework and develop skills and attitudes necessary to successfully manage reproductive health in the outpatient environment. The student must meet the competency of each expected outcome by the end of 180 clinical hours.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 5962 - WHNP Advanced Practicum II (4 Credits)

This clinical course is designed to apply knowledge attained from didactic coursework and develop skills and attitudes necessary to successfully manage reproductive/ sexual health in the ambulatory care environment. Pre: NURS 5961, Co-requisite: NURS 5963

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5963 - WHNP Advanced Practicum III (6 Credits)

This clinical course combines all competency domains and synthesizes knowledge attained from didactic course work and previous clinicals skills and attitudes into the culminating clinical experience of competently managing reproductive, sexual health & primary care in the ambulatory setting. Coreq: NURS 5962

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5964 - WHNP Advanced Practicum IV (4 Credits)

Culminating clinical experiences of the Women's Health Nurse Practitioner Program, this experience combines all areas of core competencies and in consultation with the preceptor. Pre: NURS 5963

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 5971 - AGPCNP Practicum I (3 Credits)

Clinical course that refine competencies as an Advanced Practitioner with a selected client population. The student must achieve a minimum of competency demonstrated 10 outcome areas by the end of 135 cumulative hours. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5972 - AGPCNP Practicum II (3 Credits)

Clinical course that refines competencies as an Advanced Practitioner with a selected client population, 19 outcomes are assessed. A minimum competency must be demonstrated in each outcome area by the end of 135 course clinical hours and cumulatively 270 hrs. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5973 - AGPCNP Practicum III (3 Credits)

Clinical course to refine competencies as an Advanced Practitioner with a selected client population. 23 outcomes are assessed. Student achievement of "at expected level" for each outcome area demonstrated by the end of 135 clinical hours and cumulatively 405 hrs. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5974 - AGPCNP Practicum IV (3 Credits)

Clinical course to refine competencies as an Advanced Practitioner with a selected client population. 24 outcomes are assessed. Student achievement of "at expected level" for each outcome area demonstrated by the end of 135 clinical hours and cumulatively 540 hrs. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5981 - AGACNP Practicum I (3 Credits)

AGACNP learners develop clinical skills in patient care, focusing on assessment, diagnostic reasoning, and evidence-based interventions for acute and chronic conditions. Emphasis is on interdisciplinary collaboration and holistic care to manage diverse patient scenarios effectively. Prereq: NURS 6243, NURS 6222, NURS 6761, NURS 6590 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243, NURS 6222, NURS 6761, AND NURS 6590 with a B or better.

Typically Offered: Spring.

NURS 5982 - AGACNP Practicum II (3 Credits)

AGACNP learners advance competencies in patient-centered care, applying diagnostic data to evidence-based decisions. Emphasis is on clinical assessment, diagnostic reasoning, care coordination, and interdisciplinary collaboration, fostering holistic care for patients with acute and chronic conditions alongside families and healthcare teams. Prereq: NURS 6243, NURS 6222, NURS 6600, NURS 6761, and NURS 5981 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243, NURS 6222, NURS 6600, NURS 6761, and NURS 5981 with a B or better.

Typically Offered: Summer.

NURS 5983 - AGACNP Practicum III (4 Credits)

AGACNP learners enhance skills in managing acute and chronic conditions, focusing on interdisciplinary care coordination, clinical decision-making, and patient-centered outcomes. Emphasis is on adapting to dynamic needs and demonstrating proficiency in the acute care NP role. Prereq: NURS 6600, NURS 5982, and NURS 6620 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6600, NURS 5982, and NURS 6620 with a B or better.

Typically Offered: Fall.

NURS 5984 - AGACNP Practicum IV (4 Credits)

AGACNP learners enhance skills in managing acute and chronic conditions, focusing on interdisciplinary care coordination, clinical decision-making, and patient-centered outcomes. Emphasis is on adapting to dynamic needs and demonstrating proficiency in the acute care NP role. Prereq: NURS 6620, NURS 5983, and NURS 6610 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6620, NURS 5983, and NURS 6610 with a B or better.

Typically Offered: Spring.

NURS 5991 - PMHNP Advanced Practicum I (2 Credits)

For the PMHNP student, competencies for this level include a psychiatric evaluation and beginning skills in individual and group therapies across the lifespan. The student must meet the competency of each expected outcome by the end of 90 clinical hours. Requisite: NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5992 - PMHNP Advanced Practicum II (3 Credits)

For the PMHNP student, competencies for this level include developing shared decision-making of evidence-based psychopharmacology and enhanced communication skills in individual and group therapies across the lifespan. The student must meet all outcomes by the end of 135 clinical hours. Requisite: NURS 5991, NURS 6664

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5993 - PMHNP Advanced Practicum III (3 Credits)

For the PMHNP student, competencies for this level include adapting treatment planning, pharmacotherapies and non-pharmacotherapies to multiple populations based on evidence-based strategies and culturally sensitive relationship development. The student must meet all outcomes by the end of 135 clinical hours. Requisite NURS 5992, NURS 6664, NURS 6665

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5994 - PMHNP Advanced Practicum IV (6 Credits)

For the PMHNP student, competencies include the management of complex treatments plans based on evidence-based pharmacological and non-pharmacological interventions for mental disorders across the lifespan and settings. The student must meet all outcomes by the end of 270 clinical hours. Requisite: NURS 5993, NURS 6664, NURS 6665

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6009 - Theory Foundation for Advanced Nursing (3 Credits)

The course provides an introduction to nursing's philosophical, ethical, and theoretical frameworks as guides for practice. Nursing theories, grand, middle-range, and ways of knowing will be analyzed. Students will develop a beginning model for practice based on their nursing philosophy.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6015 - Women & War (3 Credits)

Roles of women during war, gender specific policies, deployment considerations including reproductive & urogenital health, military sexual trauma, and psychological effects of deployment. Appraise women's experience, roles in the family, reintegration to community, and selected issues related to war-time service.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 6017 - On the Home Front: Supporting Vet & Military Families (3 Credits)

Dynamics and attributes of military/veteran families during and after military service. Explores issues of deployment, reintegration, parenting, compassion fatigue, and living with sequelae of combat stress (family violence, suicide, homelessness, PTSD) Evaluates preparation of civilian providers and family care interventions.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6018 - Home from the Battlefield: Psychological Health Care (3 Credits)

Introduction to veteran/military culture and historical perspectives of war. Exploration of post-traumatic stress disorder, traumatic brain injury, suicidality and effects of psychological health on family and parenting. Issues related to diversity, reintegration, redeployment, health care navigation and ethics.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6019 - Wounds of War: Military & Veteran Disability Evals (3 Credits)

Detailed examination of military/veteran integrated disability evaluation system including processes, policies, clinical conditions, & complex case studies. Investigate benefits associated with service-connected disabilities, special considerations for Reserve/Guard members, & assistance in preparing for disability evaluation and appeals.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 6023 - Veteran and Military Health Care Systems (3 Credits)

Sociopolitical, economic, ethical and current national health care issues confronting the veteran and military health care delivery systems. Examination of overall structure, functions, and processes, and influence of these contextual elements on policies guiding/regulating the organization/delivery of services.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6024 - Caring for Veterans: Aging, Chronicity, & End of Life (3 Credits)

Explores aging/chronicity in veteran populations, environmental exposures in military environments, and long term effects of chemical, biological, radiological, nuclear, explosive materials. Examines specific service connected conditions for veterans of Vietnam, Gulf War, and Iraq/Afghanistan and end-of-life care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6025 - Veteran and Military Health Care Admin Internship (2 Credits)

This course enables students to integrate and apply veteran and military health care competencies in an advanced nursing practice role. The preceptored internship facilitates engagement in administrative roles and empowers students to innovate in health care delivery practices.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6070 - Policy and Politics of Health (3 Credits)

Examine influence of policy on health, healthcare and nursing at local, state, national and global levels. Analyze policies in the context of sociopolitical and health performance environments. Engage in a policy meeting or interview a policymaker.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

NURS 6107 - Research & Quality Improve Methods: Principles of Evidence (3 Credits)

This course focuses on methods of knowledge generation applicable to advanced practice nursing. Quantitative and qualitative methods are presented in the context of evidence-based practice. Students will evaluate evidence from multiple sources, including research knowledge, clinical expertise, and patient preference.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6108 - Inferent Statistics & Quality Improvement Applying Evidence (3 Credits)

This intermediate research and QI methods course covers database management, descriptive statistics, correlation, prediction and regression, hypothesis testing, and analytic methods for quality improvement projects. Material is made relevant to nursing by use of actual nursing research studies as examples.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6109 - Evidence-Based Practice: Evaluating Evidence (3 Credits)

Evidence-based Practice: Evaluating Evidence integrates beginning research and statistics knowledge to guide in the development of PICOT questions to address health priority issues. Skills in finding, appraising, and synthesizing evidence to improve quality, safety and cost-effectiveness of patient care

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6222 - Adv Pharm & Therapeutics (3 Credits)

The student will be developing essential knowledge and competencies for advanced practice nurses to evaluate and apply advanced pharmacological principles, optimize therapeutic regimens, and apply considerations for different populations and social determinants of health to ensure safe, evidence-based medication use across patient lifespans. Prereq: NURS 6243 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243 with a B or better.

Typically Offered: Spring, Summer.

NURS 6243 - Adv Pathophysiology (3 Credits)

Advanced concepts of the dynamic aspects of disease processes provide a foundation for the assessment and management of acutely or chronically ill clients. Epidemiology, etiology, genetics, immunology, lifespan and cultural concepts, diagnostic reasoning, and current research findings are integrated throughout. Prereq: Graduate standing or permission of instructor.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6274 - Semantic Representation (3 Credits)

Introduces the concept of classifying nursing phenomena to facilitate data management and retrieval. Topics include: minimum data sets, nursing language, classification systems and vocabularies, and relates each topic to nursing practice, administration, and research.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6279 - Knowledge Management (3 Credits)

The need for knowledge discovery, distribution, and management in clinical settings is examined. Knowledge Management techniques (probabilistic/ statistical models, machine learning, data mining, queuing theory, computer simulation) are examined. The specification of a knowledge management comprehensive system for healthcare is developed. Prereq: Minimum of one informatics course or permission of instructor.

Grading Basis: Letter Grade with IP

NURS 6284 - Digital Tools for Connected Health (3 Credits)

This course examines the use of digital tools to foster engagement of patients, families and consumers in their health care. This course examines the evidence and the legal, ethical, social and policy issues within the context of connected health.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6285 - HCI Design Principles (3 Credits)

Examines the relationship of interface design to effective human interaction with computers. This course examines principles, theory and models to design and evaluate optimal interfaces to promote human computer interaction in health care informatics applications. Online course skills.

Grading Basis: Letter Grade with IP

NURS 6286 - Foundations Informatics (3 Credits)

Learners critically evaluate and utilize informatics tools for evidence-based decision-making to improve the quality, safety, and efficiency of patient care, actively engage patients/consumers in their care, effectively and efficiently manage practice, and exemplify leadership behaviors in learning health systems.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6290 - Information Systems Life Cycle (3-4 Credits)

This course focuses on a structured approach to information system development and implementation in healthcare settings. The course addresses the phases of the information systems life cycle. Prereq: NURS 6286 with a B or better or permission of instructor.

Grading Basis: Letter Grade with IP

Prereq: NURS 6286 with B or better.

Typically Offered: Fall, Spring.

NURS 6293 - Database Mgmt Systems (3 Credits)

An interdisciplinary course focused on design and application challenges in database management systems. Concepts of database modeling, querying, and reporting are explored. Students apply database concepts to clinical registries and Meaningful Use queries. Prereq: NURS 6304 or permission of instructor.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6303 - Epidemiology & Health (3 Credits)

Students explore epidemiologic principles, study design, data analysis, and using evidence to inform clinical and policy decisions. Students develop competencies in risk assessment, program planning, quality improvement, and translating findings into strategies for health promotion and disease prevention. Prereq: Graduate standing or permission of instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Spring, Summer.

NURS 6344 - NMW Gynecologic Care (3 Credits)

This course facilitates development of critical thinking necessary for the application of midwifery management of women for well woman gynecologic care, including routine screening and health promotion, and problem-oriented gynecologic care, including screening, diagnosis, medication management, and collaborative management or referral of women with gynecologic abnormalities. Prerequisites: NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6374 - NMW/WHNP Adv Clinical Skills - Outpatient (1 Credit)

Clinical skills and simulation course provides training in skills necessary to provide antepartum and gynecologic care, with additional instruction in working as a member of an interprofessional team.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6375 - NMW Advanced Clinical Skills - Inpatient (1 Credit)

Clinical skills and simulation course provides training in skills necessary to provide intrapartum and newborn care, with additional instruction in working as a member of an interprofessional team. NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 6376 - Reproductive Physiology (3 Credits)

This comprehensive course on human reproduction focuses on women's health, maternal, fetal, neonatal anatomy and physiology, and physiology of human lactation, with additional focus on pharmacology in pregnancy and lactation. Prerequisites: NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 6377 - Foundations of Midwifery Care (2 Credits)

Overview of the basic components of midwifery care in the United States and globally, including midwifery-specific history, philosophy, ethics, finance, scholarship, and epidemiological aspects of care for women.

Prerequisites: NURS 6009, NURS 6859

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6378 - Care of the Childbearing Family I (3 Credits)

This course facilitates development of critical thinking necessary for the advanced practice management of women during the antepartum and postpartum periods, including screening, diagnosis, collaborative management or referral of women at risk for complications.

Prerequisites: NURS 6190, NURS 6192, NURS 6344; Co-requisite NURS 5941

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6379 - Care of the Childbearing Family II (4 Credits)

Facilitates development of critical thinking and clinical reasoning necessary for nurse-midwifery management of women during the peripartum and immediate postpartum periods and the well newborn during the first 28 days of life. Prerequisites: Prerequisite: NURS 6378; Co-requisite NURS 5942

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6380 - Primary Care of Women (3 Credits)

This course facilitates development of critical thinking for midwifery/women's health nurse practitioner management in primary care of non-pregnant persons assigned female at birth including routine screening, health promotion, diagnosis and management, collaborative management and/or referral to appropriate health care services.

Prerequisites: Advanced Pathophysiology, Advanced Pharmacology and Therapeutics, Advanced Physical Assessment, Reproductive Physiology

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6434 - FNP Care of the Pediatric Patient (3 Credits)

This course provides FNP students with evidence-based research and practice guidelines to provide acute, chronic, and behavioral health in the pediatric primary care setting. Cultural, socioeconomic, and geographic factors influencing the pediatric patient and population health outcomes will be explored. NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6450 - Advanced Pediatric Physical Assessment (1 Credit)

This course builds on previously learned physical assessment skills to prepare the pediatric nurse practitioner to conduct comprehensive and focused assessments. Critical thinking is emphasized as primary means for collecting and analyzing data obtained from the history and physical examination. Pre-requisite: NURS 6761, Co-requisite NURS 6478, NURS 5911 (PNP) or NURS 6772, NURS 5921 (PAC)

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6456 - Advance Pediatric Clinical Skills (1 Credit)

This course builds on the skills developed in the Advanced Assessment course & Advanced Pediatric Assessment Course to prepare the pediatric nurse practitioner to integrate clinical scenarios with hands-on skill performance with pediatric patients. This course is offered with a Satisfactory/Unsatisfactory grade option only. Pre: NURS 6761, Pre/Co: NURS 6450

Grading Basis: Satisfactory/Unsatisfactory
Typically Offered: Spring.

NURS 6478 - Primary Care of Children: Well Child Care (4 Credits)

The first course in the PNP curriculum focuses on well child care including advanced assessment, health promotion, disease and disability prevention, and common developmental issues. Well child care is addressed within the context of patient, family, and inter-professional teams. Pre-requisites: NURS 6222, NURS 6243, NURS 6761; Co-requisite NURS 5911

Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6488 - Pediatric Minor and Acute Illness (3 Credits)

This course focuses on evidence-based approaches to diagnosing and managing minor acute illnesses from birth through adolescence. Developmental aspects of healthcare for children presenting with common biobehavioral/biophysical symptoms are addressed within the context of the patient, family, and inter-professional teams.

Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring.

NURS 6490 - Pediatric Primary Care Essentials (3 Credits)

Students learn pediatric primary care with a focus on family centered approaches to well-child care and minor acute and chronic illness. Knowledge gained can be applied to the continuum of pediatric care across primary, urgent, specialty, and acute settings. Prerequisites: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5921

Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6496 - Pediatric Chronic Illness and Disability (3 Credits)

The third course in the PNP curriculum focuses on assessment, diagnosis and evidence-based management of children with disabilities and chronic illness. Care for children with disabilities and chronic illness is addressed within the context of patient, family, and inter-professional teams. Requisite: NURS 6761, NURS 6222, NURS 6243, NURS 6477, NURS 6487

Grading Basis: Letter Grade with IP
Typically Offered: Spring, Summer.

NURS 6500 - Acute Care Pediatric Nurse Practitioner I (3 Credits)

Content pertinent to the urgent, emergent, and critical care management of acute illness/traumatic injury and exacerbation of chronic illness in a systems approach. Topics include analgesia/sedation, fluid/electrolyte abnormalities, GI disorders/nutrition, cardiac and pulmonary conditions and infectious diseases. Post-Grad Certificate - certification as PNP or FNP. Coreq-NURS6756-08 minimum 1 credit. MS student prereqs-NURS 6010, NURS 6031, NURS 6222, NURS 6243, NURS 6761, NURS 6772, co-req-NURS 6755-C08

Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6510 - Acute Care Pediatric Nurse Practitioner 2 (3 Credits)

Content pertinent to the urgent, emergent, and critical care management of acute illness and the acute exacerbation of chronic illness presented in a systems approach. Systems include neurology, hematology/oncology, endocrine, metabolic, nephrology and genetics. Post-Grad Certificate - Completion of NURS 6500, minimum 2 credits NURS 6756-08. MS students pre-reqs - NURS 6761, NURS 6243; NURS 6222, NURS 6010, NURS 6031, NURS 6772. Co-req-NURS 6755-08.

Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6520 - Acute Care Pediatric Nurse Practitioner 3 (3 Credits)

Content on the urgent, emergent, and critical care of acute illness/trauma and exacerbation of chronic illness in a systems approach. Systems include musculoskeletal disorders, traumatic injury, toxicology, mental health, ENT and Ophthalmology. Special populations: chronic pain, palliative/end-of-life care. Post-Grad Certificate - NURS 6500, minimum 2 credits NURS 6756-08. MS students pre-req - NURS 6761, NURS 6243, NURS 6222, NURS 6010. NURS 6031 and NURS 6772. Co-requisite NURS 6755-08.

Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6528 - FNP DM Physio & Psych Health I (3 Credits)

This course applies an evidence-based, family-centered approach when managing behavioral and physical health in the primary care setting. Synthesis of differential diagnoses for acute and chronic conditions is emphasized. Strategies for the development of wellness goals and self-efficacy are provided. NURS 6640

Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6529 - FNP DM Physio & Psych Health II (3 Credits)

This course evaluates the effectiveness of an evidence-based, family-centered approach to behavioral and physical health. An emphasis is placed on the design of wellness goals and the creation of management plans. Solutions to common challenges in primary care are proposed.

Requisite: NURS 6528, NURS 6640
Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6549 - FNP Adv. Clinical Skills (1 Credit)

Students will explore the framework used to make evidence-based clinical decisions in the physical and behavioral primary care of families. Confidence is built in the ability to perform procedures as well as gather, interpret, and evaluate laboratory and diagnostic data. NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6590 - Introduction to Adult Gerontology Acute Care Nurse Practitioner (3 Credits)

AGACNP learners develop foundational advanced practice registered nurse skills necessary when caring for acute, critical, and chronically ill patients. Emphasis is on analyzation and prioritization of patient data, formulation of broad differential diagnoses, and effective communication. Prereq: NURS 6761, NURS 6222, NURS 6243

Grading Basis: Letter Grade with IP
Prereq: NURS 6761, NURS 6222, NURS 6243.
Typically Offered: Fall.

NURS 6600 - Adult Gerontology Acute Care Nurse Practitioner I (3 Credits)

Students integrate scientific knowledge with advanced health assessment and diagnostic reasoning skills to diagnose and manage acute adult and older adult conditions. Students prioritize urgent, emergent, and critical care, while demonstrating patient-centered care and applying systems-based advanced practice strategies.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6603 - Health Systems and Management (3 Credits)

This course provides students an overview of the U.S. Healthcare System, its key components and their functional relationships. Students learn about the organization, management, and financing of the U.S. Healthcare System.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6610 - Adult Gerontology Acute Care Nurse Practitioner 2 (3 Credits)

Students continue to integrate scientific knowledge with advanced health assessment and diagnostic reasoning skills to diagnose and manage acute adult and older adult conditions. Students prioritize urgent, emergent, and critical care, while demonstrating patient-centered care and applying systems-based advanced practice strategies. Prereq: NURS 6600

Grading Basis: Letter Grade with IP
Prereq: NURS 6600.

Typically Offered: Fall.

NURS 6620 - Adult Gero Acute Care NP Diagnostics & Therapeutics (2 Credits)

Students apply principles of diagnostic and therapeutic modalities for acute and critical care patients. Emphasizes the analysis of clinical data and the development of advanced technical skills essential for the role of the adult gerontology acute care nurse practitioner. Prereq: NURS 6610

Grading Basis: Letter Grade with IP

Prereq: NURS 6610.

Typically Offered: Summer.

NURS 6630 - Advanced Practice Synthesis in Adult Gerontology Acute Care (1 Credit)

This course synthesizes professional principles related to the Adult Gerontology Acute Care Nurse Practitioner (AGACNP) and transition to the role of a provider. Students will prepare to integrate professional responsibilities into practice. Prerequisites: NURS 6600, NURS 6620, NURS 6610

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6633 - Advanced Public Health Nursing (3 Credits)

Course provides the learned with: foundations of advanced public health nursing practice; advanced knowledge of population health and care coordination; essentials of program planning, implementation, and evaluation; and community practicum experiences leading to capstone development and completion. Prereq: NURS 6010, NURS 6011.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6640 - FNP Hlth Promotion, Prevention, Screening (3 Credits)

This class introduces students to primary care evidence-based research and practice guidelines important for physical and behavioral health promotion and protection. The family nurse practitioner role in family health and wellness will be emphasized.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6659 - Adv Assess, Neurobiology & Psychopharm Across Lifespan (3 Credits)

Focus on integration of neurobiological and psychopharmacological theory and research to assessment, symptomatology and treatment of psychiatric disorders across the lifespan. Prerequisite: Psychotherapy, NURS6664, NURS6243, Principles of Evidence, NURS6761, NURS6222.

If DNP additional courses, NURS6303, Evaluate Evidence, Applying Evidence

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6661 - Diagnosis and Management/Adults PMHNP (3 Credits)

Advanced knowledge of evidence-based psychiatric-mental health nursing including assessment, diagnosis, health promotion, management, and evaluation of adults with mental illnesses and addictions.

Emphasis on neurobiology, complex psychopharmacological and non-pharmacological treatments, and culturally-sensitive nursing interventions. Prereq: NURS 6660. Coreq: NURS 6756-6758, 3 cr hrs.

Grading Basis: Letter Grade with IP

NURS 6662 - Diagnosis and Management/Children and Older Adult PMHNP (3 Credits)

Advanced psychiatric nursing assessment, diagnosis, health promotion, management, and evaluation of children, adolescents, and older adults. Emphasis on complex individual, family, group, and non-pharmacologic nursing interventions, neurobiology, psychopharmacological treatments, and developmentally appropriate, culturally-sensitive nursing interventions. Variable credits: Child (2); all populations (3) Prereq: NURS 6660; approval from Option Coordinator of FPMHNP Program.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6664 - Integrated Behavioral Healthcare & Common Psychiatri (3 Credits)

Overview of behavioral health assessment of common psychiatric disorders and medical conditions with psychiatric presentations across the lifespan. Focuses on integrated care settings, interdisciplinary communication, care coordination within a trauma-informed setting. Guidelines for telepsych and social media will be discussed. Prerequisite: NURS 6243, NURS 6222 or permission of instructor

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6665 - PsyTherapy, Behavioral Change & HP Lifespan (3 Credits)

Theoretical foundational knowledge of individual, group, and family therapy, health promotion and disease prevention for the PMHNP across the lifespan. Focuses behavior change and use of Cognitive behavioral, dialectical, solution focused, play, and reminiscence therapy, motivational interviewing across the lifespan. Prerequisite: In the PMHNP option, or approval by course faculty

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6739 - Ob-Gyn Essentials for the FNP (3 Credits)

NURS 6739 will provide an overview of normal anatomy and physiology, health prevention and common acute gynecology, pregnancy and postpartum problems commonly seen in the primary care of women over the lifespan. Requisite: NURS 6222, NURS 6761, NURS 6243, NURS 6818
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

NURS 6740 - ADULT-GERONTOLOGY CNS WELLNESS TO ILLNESS (3 Credits)

Focus is on knowledge acquisition and skill development for Adult-Gerontology Clinical Nurse Specialist. The course provides learning of concepts of wellness, health maintenance, aging, palliative care as a model for health, evidence-based practice, skill development, clinical decision-making and APN role.
Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6742 - Adult-GerontologyCNS AdvancedPractice AcuteCareNursing (3 Credits)

This course builds CNS knowledge and skills managing the care of acutely ill patients across the continuum during acute illness episodes. CNS practice incorporating three spheres, healthcare systems, patients/families and nursing practice excellence are central to course content
Grading Basis: Letter Grade with IP

NURS 6746 - Adult-Gero CNS Complex patient management (3 Credits)

Focuses is on management of patients with acute and chronic illness in adults by Clinical Nurse Specialist. Integration of advanced skill development, theory, evidence-based symptom, disease management, clinical decision making, leadership, system organizational strategies, professional issues, and APN role transition.
Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6752 - Advanced Public Health Nursing Practicum I (1-6 Credits)

Course provides the learner with advanced public health nursing clinical/practicum experiences in community-based settings. Associated seminars of clinical experiences will compliment didactic course content.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 9.
Typically Offered: Fall, Spring, Summer.

NURS 6759 - Informatics Adv Practicum (3-6 Credits)

This course allows students to integrate and apply informatics competencies in an advanced nursing practice role. The preceptored practicum and project require the student to engage in informatics specialist roles within a variety of health care settings. Prereq: Completion of a minimum of three informatics specialty courses.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 20.

NURS 6761 - Advanced Assessment (3 Credits)

Learners demonstrate the advanced subjective and objective data gathering skills of communication, advanced physical examination and critical thinking to generate and document clinically reasoned assessments and plans required of advanced practice registered nurses caring for persons across the lifespan. Prereq: NURS 6243 with a B or better.
Grading Basis: Letter Grade with IP
Prereq: NURS 6243 with a B or better.
Typically Offered: Fall, Summer.

NURS 6790 - Systems and Leadership Theory (3 Credits)

This course focuses on the contemporary theories as they apply to healthcare systems and the managerial role. The course includes critical analysis of organizational, leadership, change and evidence-based practice theories. Emphasis is placed on application of theory to organizational analysis.
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

NURS 6793 - Relational Communication (3 Credits)

Study of theory, research, and praxis of relational communication with interpersonal, group, and organizational contexts. Relationship-building, effective communication and leadership competencies are emphasized for safety and quality improvement through reflection and self-awareness, shared decision-making, coaching, conflict management, and political navigation.
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6794 - Decision Support and Data Management (3 Credits)

This course focuses on decision making models and their application using diverse data sources for high quality and safe care delivery. Decision support tools used in various health settings will be explored.
Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6795 - i-LEAD Administrative Internship (3 Credits)

The internship provides students the opportunity to apply and evaluate systems and leadership theories, concepts and skills in the work setting under the supervision of a preceptor. The course is designed as a capstone experience to integrate and apply competencies
Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring, Summer.

NURS 6796 - Executive Leadership and Organizational Systems (3 Credits)

This course examines attributes and issues associated with high-level administrative roles in healthcare organizations. It explores facets of leadership and leadership development in teams and organizations and processes by which people affect change in a variety of roles and situation.
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6800 - Leadership, Financial Management and Innovation (3 Credits)

Distinguishes leadership theories and management concepts in complex systems. Analyzes self-leadership in influencing teams. Differentiates systems influencers impacting financial decision-making. Synthesizes knowledge of economics, contributing to organizational financial health culminating in business plan for innovative nursing program/practice.
Grading Basis: Letter Grade with IP
Typically Offered: Fall, Spring.

NURS 6819 - AGPCNP Primary Hlth Care I: Hlth Promotion & Prevention (3 Credits)

This course provides content on health promotion and health maintenance of adults in primary care. Evidence-based guidelines for health promotion and tools for assessment and management of the individual, family and community. Prerequisites: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5971
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

NURS 6829 - Primary Care II: Diagnosis and Management I (3 Credits)

This course covers diagnosis, management, and competent determinations of care related to acute and chronic health alterations in the adult/geriatric primary care patient. Pre-requisite: NURS 6243, NURS 6222, NURS 6761, NURS 6818. Co-requisite NURS 5972

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6836 - Special Topics (0.5-6 Credits)

This course is a special topic selected each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

NURS 6839 - Primary Care III: Diagnosis and Management II (3 Credits)

This course is a continuation of diagnosis, management, and competent determinations of care related to acute and chronic health alterations in the adult/geriatric primary care patient. Requisite: NURS 6222, NURS 6243, NURS 6761, NURS 5971, NURS 6829, NURS 6818, NURS 5971, NURS 5972, NURS 5973

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6849 - PC IV: DM III Care for Complex Older Adult (3 Credits)

This course focuses on care of the older adult through examination of complex health alterations. Health optimization of the older adult; palliative and end of life care, social and political factors affecting this age group are also examined. Pre-requisites: NURS 6222, NURS 6243, NURS 6761, NURS 6839 Co-requisite: NURS 5973

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6850 - NMW Primary Care of Women (2 Credits)

Facilitates development of critical thinking necessary for the application of midwifery management in primary care for women; routine screening and health promotion, diagnosis & management, and collaborative management or referral of acute minor illnesses and chronic disease management. Prerequisites: NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6859 - Advanced Professional Role (2 Credits)

Advance practice registered nurse learners develop competencies through analysis, appraisal and application of the professional aspects and challenges associated with transitioning to the advance practice registered nursing role.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

NURS 6882 - Foundational Clinical Skills Adv Pract NP (1 Credit)

This course applies advanced practice competencies associated with procedural skills in a hands on format.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6940 - Candidate for Degree (1 Credit)

Registration only if not enrolled in other coursework in the semester in which he/she takes MS comprehensive exams.

Grading Basis: Satisfactory/Unsatisfactory

Additional Information: Report as Full Time.

NURS 6950 - Synthesis/Integration/Transition into FNP Practice (2 Credits)

This course will synthesize and integrate learning from the FNP program and prepare the student for transition into clinical practice. Students will plan how to support the FNP role and analyze interprofessional leadership opportunities to improve health outcomes. Pre/Co-requisite: NURS 5934; Prerequisite: NURS 6529.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6973 - State of Science: Healthcare Systems (3 Credits)

Course focuses on the state of the science of evidence-based practice and environment of health-care and its effect on organizational, staff, and patient outcomes. The manager's role in creating/enhancing the environment will be emphasized based upon research. Prerequisite: NURS 6790 Systems Theory

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 7001 - Diversity of Scientific Perspectives (1 Credit)

Beginning exploration of focal emphasis areas biobehavioral science, caring science and healthcare systems in a seminar format. Students will be introduced to the three focal emphasis areas and explore applications to knowledge development in their area of substantive interest.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7101 - Metatheory in Nursing I (3 Credits)

This course examines the nature of nursing as an academic discipline, emphasizing varying perspectives of nursing's phenomena of interest, history of knowledge development, interrelationships between philosophies of science and nursing knowledge, and methods of theory analysis and evaluation.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7102 - Metatheory in Nursing II (3 Credits)

This course focuses on processes of knowledge development in nursing, including traditional and non-traditional methods. Application of a selected theory development method to a student-selected nursing phenomenon is required.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7200 - Writing Discipline for Scientific Publishing (3 Credits)

Concentrating on clear, logical thinking as the most important element in manuscript communication, students will develop the discipline of writing focusing on writing roadmaps, precision/concision of words and common writing pitfalls in the context of expectations for scientific publishing. Prerequisite: Completion of first-year PhD coursework or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7220 - Role of the Scientist I (3 Credits)

This seminar course is designed to promote beginning professional role formation as PhD students transition to the role of the scientist. Students will develop a research question and specific aims.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7221 - Role of the Scientist II (2 Credits)

This seminar course builds upon Role of the Scientist I by emphasizing role development through scientific grant writing. Prerequisite: NURS 7220.

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7350 - Research Practicum (3 Credits)

Students gain hands-on research experience by leveraging various opportunities within the college, campus and other academic environments. This experience includes observing and contributing to research steps and team interaction. This will enrich students' understanding of research process and provide hands-on experience.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7440 - Measurement for Nursing Science (3 Credits)

Course provides a knowledge base in the process of instrumentation to measure psychosocial and behavioral phenomena. Techniques to evaluate existing instruments will be followed by methods for designing and testing the psychometric properties of new instruments.

Grading Basis: Letter Grade

NURS 7504 - Caring Science Seminar I: Introduction to Caring Science (1 Credit)

This course focuses on the evolution of caring science research and other disciplines in nursing with an emphasis on Dr. Jean Watson's perspective. How theoretical-scholarship in caring science and multiple theories of caring are used in research are critiqued and examined.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7506 - Diverse Theories of Care: Paradigms of Human Caring (3 Credits)

This course explores caring science and unitary views of consciousness in relation to universal human experiences and vicissitudes of existence. Different theories of caring examine the diversity and converging directions of a unitary transformative view of evolved humans.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7508 - CS as Transdisciplinary Domain for Health Science Educ (3 Credits)

This course explores the placement of caring knowledge within a trans-disciplinary matrix for nursing science and related fields of health science and education. It examines diverse concepts of caring in the larger field of health science. Original expanded title: Caring Science as Transdisciplinary Domain for Health Science Education, Practice and Research

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7510 - Nursing Science Inquiry Methods (4 Credits)

An introduction to qualitative and quantitative methods of inquiry to guide the selection of methods for knowledge development in nursing science. Emphasis on the integration of midrange theory, literature analysis and synthesis for development of researchable questions and methods selection. Prereq: Admission to the program and first semester required courses.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7511 - Philosophical Underpinnings Caring Science (3 Credits)

This course focuses on the analysis of caring science from its philosophical traditions. Historical and contemporary philosophical scholarship will be critiqued and examined. NURS 7504, NURS 7519

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7519 - Exploring Caring Science Questions (1 Credit)

This course focuses on the latest development and analysis of caring science research and its evolution. Caring Science questions and methodologies related to students' research questions are examined.

Prerequisite: NURS 7101, NURS 7201, NURS 7504

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7621 - Advanced Qualitative Research Design, Methods & Analysis I (3 Credits)

A range of qualitative research approaches are critically analyzed exploring contemporary qualitative designs and underlying theoretical models. Students will develop a qualitative research proposal appropriate for student's doctoral research questions and consistent with IRB requirements. Prereq: Completion of required coursework for Year 1 and Summer Year 2.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7622 - Advanced Qualitative Research Design, Methods & Analysis II (3 Credits)

This course provides students with opportunities to apply new skills and knowledge related to their interests, including critique and dissemination of qualitative reports. Prereq: Completion of required courses for Year 1 and Summer Year 2 and Fall Year 2.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7623 - Advanced Qualitative Research Design, Methods & Analysis III (3 Credits)

This course provides students with tailored opportunities to apply new skills and knowledge related to their interests, including conduct of a preliminary qualitative study. Local institutional review board approval, recruitment, data collection and early data analysis are conducted.

Prereq: Instructor Consent.

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7631 - Advanced Quantitative Research Design, Methods & Analysis I (3 Credits)

In-depth study of principles foundational to quantitative research including causation, sources of error, measurement, and the focal unit, and internal and external validity; experimental and quasi-experimental designs; and methods of statistical analysis for these designs. Prereq: Completion of required courses for Year 1 and Summer semester of Year 2.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7632 - Advanced quantitative Research Design, Methods & Analysis II (3 Credits)

In-depth study of principles foundational to quantitative research including causation, prediction, explanation, and power; descriptive and exploratory research designs; methods of statistical analysis for these designed; and meta-analysis. Prereq: Required courses for: Year 1, Summer Year 2 and Fall Year 2.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7720 - Health Care Systems I: Evaluating Health Care Delivery System (3 Credits)

Focuses on descriptive/evaluation of health care delivery across the continuum of care and integration of nursing care with health care delivery. HCS middle-range theories for descriptive/evaluative research are examined. Advanced methods for research at the system level are addressed. Prereq: NURS 7801; NURS 7802NURS 7803, NURS 7101; NURS 7102; NURS 7201, NURS 7510

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7730 - Health Care Systems II: Changing Health Care Delivery Systems (3 Credits)

Focuses on improving health care delivery across the continuum of care. Changing theories and theoretical grounding for system level interventions are analyzed. Application includes advanced methods/designs for assessing the effects of change. The information technology/care delivery interface is examined. Prereq: All first year and summer/fall second year required courses.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7740 - BBS I: Intrapersonal Determinants & Phenomena (3 Credits)

This course focuses on the intrapersonal biobehavioral determinants that underlie health-related phenomena, including psychosocial, behavioral, and biological mechanisms and processes. Prereq: First year PhD required courses for the Biobehavioral Science focus.

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7750 - BBS II: Interpersonal Phenomena & Determinants (3 Credits)

This course focuses on the interpersonal phenomena that arise from interrelationships among psychosocial, behavioral, biological and environmental determinants of health states across the lifespan.

Prereq: First year and second year summer PhD required courses for the Biobehavioral Science focus.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7760 - Interventions & Outcomes in Biobehavioral Research (3 Credits)

Introduction to conceptualization, development, and testing of biobehavioral interventions; identification and measurement of biobehavioral outcomes. Attention is also given to the design of clinical trials to test biobehavioral interventions, questions of efficacy and effectiveness, and issues of implementation and fidelity. Prereq: Required courses for Year 1, summer Year 2, Fall Year 2.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7802 - HCS Seminar II: Developing Systems Questions (1 Credit)

Development of key questions in the field of health care systems research will be discussed in seminar format. Students will develop research questions related to their own area of research interest. Prereq: Completion of required first semester courses.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7803 - Health Care Systems: State of the Science (3 Credits)

Interrogation of extant HCS literature using integrative and systematic frameworks to review the state of the science in student's area of interest. Identification of state of the science and appropriate research methods to address the gaps in knowledge. Prereq: All required first year courses.

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7810 - Narrative Inquiry for Health Professions (3 Credits)

This course explores definitions of stories and narratives and applied narrative inquiry within a health equity-driven, transdisciplinary perspective for health professions. This course covers narrative inquiry across methods, grant and career development, and doctoral-level research using single, multi- and mixed-methods design.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 7822 - Developing Biobehavioral Research Problem & Questions (1 Credit)

Development of key questions in the field of biobehavioral research will be discussed in seminar format. Students will develop a problem statement and research questions related to their own area of research interest. Prereq: Completion of first semester required courses.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7836 - Special Topics (1-4 Credits)

This course is a special topic selected each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

NURS 7856 - Independent Study (1-4 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

NURS 7862 - Best Practices to Enhance Teaching and Learning (3 Credits)

Exploration of best practices in evidence-based and theory-guided teaching and learning. Analysis of contemporary learning principles and learning styles. Implementation of a variety of high impact strategies for learner engagement across settings, with emphasis on selecting and using teaching technologies. Requisites: Graduate standing or permission of instructor

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 7863 - Immersion in Nursing Education Practicum (3 Credits)

Implement best practices in teaching and learning, curriculum and course design and continuous improvement, learning assessment and evaluation methods with a faculty mentor. Experiences address individual learning needs relevant to the nurse educator role across teaching modalities and learning environments. Requisite: Graduate standing or permission of instructor. Previous teaching experience or coursework relevant to teaching and learning strategies, curriculum design and evaluation, and/or adult learning theory is recommended.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 7864 - Evolving Nursing Educ Sci and Nurse Educator Roles (3 Credits)

Exploration of advances in nursing education science and impact of research on pedagogy, roles, and competencies necessary to prepare a well-qualified diverse nursing workforce across dynamic healthcare systems and environments. Emphasis is on the scholarship of teaching and professional development. Requisite: Graduate standing or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 7865 - Outcome-focused Curriculum and Program Evaluation (3 Credits)

Exploration of curriculum design and course developments as foundations for achievement of desired learning and program outcomes. Emphasis is on the connection between design and evidence of performance to assess individual learning, course and program effectiveness and continuous quality improvement. Requisite: Graduate Standing or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 8000 - DNP Project Variable Hours Course (1-6 Credits)

Students who need greater than 540 clinical hours toward DNP Project take this course. Faculty advisor provides oversight to student. Credit hours are variable depending on individual student needs. Students log DNP Project hours in InPlace. Prerequisite: NURS 6070, NURS 6009, NURS 6286, NURS 6109

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

Typically Offered: Spring.

NURS 8020 - DNP Project Preparation (2 Credits)

Doctor of Nursing Practice Students begin to plan their projects by incorporating ethical and regulatory oversight considerations of practice, population, or system readiness for enhancement and relevant evidence and/or interventions related to the DNP Project. Students will begin to develop a proposal for their DNP project that will be reviewed for ethical and regulatory oversight.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

NURS 8030 - DNP Project I (4 Credits)

In a clinically focused experience, Doctor of Nursing Practice students work on scholarly projects which incorporate theoretical models, various strategies, and compliance with regulatory oversight. Evidence evaluation and feedback incorporation are highlighted. Pre-requisite: NURS 8020

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 8040 - DNP Project Course II (4 Credits)

Students implement the clinical scholarly project by leading an interdisciplinary team, conducting data collection, and begin data analysis. Implementation is guided by institutional resources, selected theories, identified evidence, small cycles of change, and technology. Students prioritize dissemination of results. Prereq: NURS 8020, NURS 8030

Grading Basis: Letter Grade

Prereq: NURS 8020, NURS 8030.

Typically Offered: Fall, Summer.

NURS 8050 - DNP Project III (4 Credits)

Doctor of Nursing Practice students will continue project implementation, conclude data collection and complete data analysis in this final course.

Students will disseminate project findings by completing a scholarly paper and an oral presentation. An e-portfolio will also be completed.

Requisite: NURS 8040, NURS 8045

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 8856 - Independent Study (DNP) (1-6 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

NURS 8990 - Dissertation (1-10 Credits)

Student MUST register for section number listed for dissertation chairperson. Prereq: Completion of majority of doctoral course work.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 40.

Additional Information: Report as Full Time.

Resources

Policies

- Student Handbooks (<https://nursing.cuanschutz.edu/student-life/student-handbooks/>)
- Emergency Preparedness (<https://www.cuanschutz.edu/police/divisions/emergencymanagement/campus-resources/>)
- Title IX (<https://www.ucdenver.edu/offices/equity/university-policies-procedures/sexual-misconduct-intimate-partner-violence-stalking/>)

Student Organizations

- CU Student Nurses Association (<https://nursing.cuanschutz.edu/student-life/clubs-and-organizations/cusna/>)
- College of Nursing Student Council (<https://nursing.cuanschutz.edu/student-life/clubs-and-organizations/nursing-student-council/>)
- CU Student Senate (<https://www.cuanschutz.edu/student/campus-life/senate/>)
- Sigma Theta Tau (<https://www.sigmanursing.org/>)
- Future Voices (<https://future-voices.webnode.com/>)

University Resources

- Office of Student Affairs (<https://www.cuanschutz.edu/student/campus-life/>)
- The Office of Disability Access and Inclusion (<https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion/>)

Nursing (BS)

Contact Info

Office location: Education II North, Room 3255
Mailing address: 13120 East 19th Avenue, 3rd Floor
Aurora, CO 80045

Phone number: 303-724-1812

Web Page: <https://nursing.cuanschutz.edu/>

Email: nursing.admissions@cuanschutz.edu
(nursing.admission@cuanschutz.edu)

Overview: Multiple Pathways to Your Bachelor of Science Degree in Nursing

Earn the Bachelor of Science in Nursing (BSN) degree through the CU Nursing Traditional, Accelerated, INP pathway, or RN-BSN* pathway from one of the top nursing programs in the country. The University of Colorado College of Nursing has been ranked among the best nursing programs by U.S. News & World Report in 2024 and 2025.

The BSN program is led by world-renowned faculty who understand the challenges of earning a degree. That's why our programs and classes are offered in multiple pathways. From a Traditional pathway with the majority of classes in the traditional classroom setting to an accelerated pathway for those with bachelor's degrees in a non nursing field, to an online format for RNs seeking a BSN* — we have something for everyone. Each pathway offers online courses taught by the same top-notch teachers, researchers and writers as our in-person courses. We know one of our pathways will work for you.

All of our BSN courses prepare the learner to practice as a generalist nurse at the baccalaureate level. Students will learn to manage patient care with compassion through the advocacy of evidence-based, relationship-centered, care. The student will learn the importance of safe, quality, efficient and effective interdisciplinary care to enhance and sustain health and healing. Students work together with other disciplines across the campus including pharmacy, dentistry, medicine, and public health.

The University of Colorado College of Nursing offers five Bachelor of Science Pathways:

1. The Traditional Pathway (<https://nursing.cuanschutz.edu/academics/undergraduate/trad/>): This is a full-time, 24-month option, designed for students who may or may not have earned a degree in the past. The Traditional Pathway follows a required class schedule that includes classroom, clinical simulation, and direct patient care clinical experiences. Students complete their pre-requisite courses at the community college or university setting, and subsequently apply through NursingCAS to the Traditional Nursing Pathway. Once accepted, students begin the Traditional 2-year program the following summer semester.
2. The Integrated Nursing Pathway (INP) (<https://nursing.cuanschutz.edu/academics/undergraduate/inp/>): The CU Nursing program partners with local community colleges (Community College of Aurora, Community College of Denver and Red Rocks Community College) to offer simultaneous application and admission to the local community college and CU Nursing Traditional BSN Program. This program is intended for Colorado residents who complete a majority of their prerequisite courses in the Colorado Community College system, and do not have a previous degree.
3. The University of Colorado Accelerated Nursing Pathway (UCAN) (<https://nursing.cuanschutz.edu/academics/undergraduate/ucan/>): Designed for those who have earned a Bachelor's degree in a field other than nursing, students will complete a rigorous nursing program in 12 months. The UCAN student will complete the same number of program credits and clinical hours as the Traditional Pathway student.
4. The RN-BSN Pathway*: This online RN to BSN pathway permits the licensed RNs to complete the BSN degree completely online. The program allows you to transfer the ADN credit so that you can complete the BSN in 16 months or less, while working full-time. Admission to this pathway takes place three times per year.
5. The RN-BSN Early Decision Pathway*: The Early Decision Pathway is available for prospective students currently enrolled in an accredited Associate Degree of Nursing (ADN) program who have completed one semester of coursework that includes nursing courses.

*Admission into the RN to BS program was paused starting Spring 2024 with no new admissions being offered. The last courses offered were in Fall 2024 after which time the official pausing of the program commenced and no other courses will be offered.

Admissions Requirements

Admission to the College of Nursing bachelor of science program is highly competitive. In order to keep the selection process fair, admissions requirements are definitive and applied to each application in the same manner. Please keep in mind that applications are not reviewed until they are Verified by NursingCAS. Your application to the College of Nursing must be Verified by the application deadline (<https://nursing.cuanschutz.edu/admissions/deadlines/>) to be considered for admission.

Applications are submitted through Nursing's Centralized Application Service (NursingCAS (<https://nursingcas.liaisoncas.org/apply/>)).

For complete updated information related to applications to the College of Nursing TRADITIONAL PROGRAM, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/traditional-nursing-bachelors-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/traditional-nursing-bachelors-admissions/>).

For complete updated information related to applications to the College of Nursing UCAN (Accelerated) PROGRAM, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/ucan-accelerated-bachelors-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/ucan-accelerated-bachelors-admissions/>).

For complete updated information related to applications to the College of Nursing INTEGRATED NURSING PATHWAY, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/integrated-nursing-pathway-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/integrated-nursing-pathway-admissions/>).

For complete updated information related to applications to the College of Nursing CU DENVER/CU NURSING BRIDGE, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/cu-bridge-nursing-bachelors-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/cu-bridge-nursing-bachelors-admissions/>).

For complete updated information related to applications to the College of Nursing FORT LEWIS COLLEGE COLLABORATIVE, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/ft-lewis-admissions-requirements> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/ft-lewis-admissions-requirements/>).

Baccalaureate (BS) Nursing Pathways: Traditional Nursing Pathway

The Traditional Pathway is a full-time, 24-month Bachelor of Science option, designed for students who may or may not have earned a degree in the past. This program includes class room, clinical simulation, and clinical practice as part of the curriculum. Beginning with the summer 2019 cohort, the Traditional Pathway program will be primarily offered at the Anschutz Medical Campus in Aurora. However, Traditional students may be required to attend some classes or labs at the Legacy Campus in Lone Tree.

University of Colorado Accelerated Nursing (UCAN) Pathway

The accelerated Bachelor of Science in nursing is a full-time, 12-month program option, which requires students have earned a previous bachelor's degree by the semester or quarter prior to beginning the nursing program. The degree can be in a health-related or non-health related field of study. Beginning with the spring 2020 cohort, the UCAN program will be primarily offered at the Legacy Campus in Lone Tree, CO. However, UCAN students may be required to attend some classes or labs on the Anschutz Medical Campus in Aurora.

CU Nursing / Fort Lewis College Collaborative

The University of Colorado College of Nursing (CU Nursing) at the Anschutz Medical Campus and Fort Lewis College (FLC) have announced a first-of-its-kind partnership to create a four-year undergraduate degree in nursing, bringing the state's flagship medical institute of higher education to the rural and Indigenous-serving campus of Southwest Colorado.

- Close-knit, personalized education opportunities
- High-touch and high-tech simulation
- CU's nationally ranked nursing education and research expertise combined with FLC's liberal arts core
- Community immersion/service learning locally
- Hands-on, culturally sensitive, patient-centered healthcare
- FLC's Indigenous perspective and sense of place
- Students will complete their four-year degree on the Fort Lewis College campus, but students will receive their final degree from CU

CU Denver/CU Nursing Bridge Nursing Bachelor's Program

The University of Colorado College of Nursing (CU Nursing at Anschutz Medical Campus) has a partnership program with the University of Colorado Denver for students interested in pursuing a career in Nursing. The CU Denver/CU Nursing Bridge Pathway was created to promote the diversity of healthcare professionals and to better serve the healthcare needs of the State of Colorado. Students take prerequisite courses at CU Denver and then transition to CU Nursing to complete their Bachelor of Science in Nursing.

RN-to-BS Pathway*

Open the door to greater career options within the nursing field by completing a Bachelor of Science degree in nursing. The University of Colorado, College of Nursing Online RN to BS in Nursing program is completely online, allowing you to seek your BS degree, balance your life, and work at the same time. The availability of online courses supports the unique need for flexibility and access to adult learners who want to complete their bachelor of science degree while working. Educational technology, such as web-based courses, help to accommodate work schedules and other life commitments for our students.

- Apply if you are a licensed RN. Applications are not limited to Colorado residents.
- Transfer most previously completed prerequisite coursework from a regionally accredited institution.
- Complete the program in four semesters (balanced to work with tuition reimbursements).
- Enjoy the accessibility of online orientation and education.
- Join a cohort, beginning each fall and spring, for progression and connection within a group.
- Benefit from practicum experiences designed to meet your personal goals.
- Focus on an individual area of interest (create a project meaningful and useful to you and your organization).
- Take advantage of earning your BS in nursing from the CU College of Nursing.

*Admission into the RN to BS program was paused starting Spring 2024 with no new admissions being offered. The last courses offered were in Fall 2024 after which time the official pausing of the program commenced and no other courses will be offered.

Traditional Nursing Pathway

Sample program plan, individual program plans will have a different sequence of all the same courses.

Summer

Year 1		Hours
Summer		
NURS 3023	Patient-Centered Health Assessment	2.5
NURS 3034	Foundations of Nursing Practice	4
NURS 3140	Pathophysiology for Nurses	3
Hours		9.5
Total Hours		9.5

Fall

Year 1		Hours
Fall		
NURS 3150	Pharmacology for Nurses	3
NURS 3617	Medical-Surgical Nursing Practice I	6.8
NURS 3080	Nursing Research and Evidence-Based Practice	3
Hours		12.8
Total Hours		12.8

Spring (Individual program plans may be sequenced differently based on student grouping)**Year 1**

		Hours
Spring		
NURS 3567	Mental Health Nursing Practice across the Lifespan	5
NURS 4064	Interprofessional Collaborative Practice	1
NURS 4617	Nursing Care of the Adult Patient with Complex Care Needs	6.7
NURS 3267	Health Promotion	2
Hours		14.7
Total Hours		14.7

Year 1 total credit hours:

Didactic Hours: 24.9

Clinical Hours: 12.1

Total Hours: 37**Summer****Year 2**

		Hours
Summer		
NURS 3667	Nursing Care of the Older Adult	2
Hours		2
Total Hours		2

Fall (Individual program plans may be sequenced differently based on student grouping)**Year 2**

		Hours
Fall		
NURS 3447	Nursing Care of Children and Families	5
NURS 4074	Inter-professional Healthcare Ethics & Health Equity	1
NURS 3337	Nursing Care of Childbearing Families	5
NURS 3880	Nursing Role and Practice	2
Hours		13
Total Hours		13

Spring**Year 2**

		Hours
Spring		
NURS 4917	Immersion in Clinical Nursing	8
NURS 4877	Population-Based Nursing - RN	6
Hours		14
Total Hours		14

YEAR 2 TOTAL CREDIT HOURS:

Didactic Hours: 15.75

Clinical Hours: 13.25

Total Hours: 29**Program Total Credit hours:**

Didactic Hours: 40.65

Clinical Hours: 25.35

Total Hours: 66

University of Colorado Accelerated Nursing (UCAN) Pathway

Program Plan for Spring start. Students starting in the Fall will follow a similar sequence of all the same courses.**Spring****Year 1**

		Hours
Spring		
NURS 3023	Patient-Centered Health Assessment	2.5
NURS 3034	Foundations of Nursing Practice	4
NURS 3140	Pathophysiology for Nurses	3
NURS 3150	Pharmacology for Nurses	3
NURS 3267	Health Promotion	2
NURS 3617	Medical-Surgical Nursing Practice I	6.8
NURS 3667	Nursing Care of the Older Adult	2
Hours		23.3
Total Hours		23.3

SUMMER**Year 1**

		Hours
Summer		
NURS 3337	Nursing Care of Childbearing Families	5
NURS 3447	Nursing Care of Children and Families	5
NURS 3567	Mental Health Nursing Practice across the Lifespan	5
NURS 3080	Nursing Research and Evidence-Based Practice	3
Hours		18
Total Hours		18

FALL**Year 1**

		Hours
Fall		
NURS 4080	Professional Nursing: Transition into the Role	4
NURS 4617	Nursing Care of the Adult Patient with Complex Care Needs	6.7
NURS 4917	Immersion in Clinical Nursing	8
NURS 4877	Population-Based Nursing - RN	6
Hours		24.7
Total Hours		24.7

TOTAL CREDIT HOURS:

Didactic Hours: 40.65

Clinical Hours: 25.35

Total Hours: 66

BS Program Outcomes

- Integrate, translate, and apply evolving knowledge from nursing and other healthcare disciplines across a range of settings.
- Provide collaborative person-centered care that is empowering, inclusive, holistic, respectful, compassionate, just, evidence-based and developmentally appropriate across the care continuum.

- Collaborate with diverse populations and communities in traditional and nontraditional partnerships, including public health, global health, environmental justice, academia, health care, and local government entities, for the prevention of disease and the improvement of equitable population health outcomes.
- Integrate evidence-based practice through the application and dissemination of nursing knowledge and to improve patient outcomes and transform health care.
- Incorporate established and emerging principles of quality and safety as core values to enhance quality of care and minimize risk of harm to patients and providers through system effectiveness and individual performance.
- Demonstrates effective use of communication and collaboration when partnering with intra- and interprofessional teams, patients, families, and communities to optimize care and enhance the healthcare outcomes.
- Apply systems-based thinking to respond to complex healthcare environments, ethically, effectively and proactively, coordinating resources to provide safe, quality and equitable care to diverse populations including those impacted by social determinants of health.
- Uses informatics processes and healthcare technologies to gather data, inform decision-making, provide high-quality, efficient and safe care, and support professionals as they expand knowledge and wisdom for practice in accordance with best practice and professional and regulatory standards.
- Cultivate a professional identity that aligns with sustainable, collaborative, and accountable professional behaviors, reflecting the core values of nursing.
- Participate in activities and self-reflection that foster personal health, resilience, well-being, lifelong learning, and acquisition of nursing expertise and leadership development.

Nursing - Master of Science (MS)

Contact Info

Office location: Education II North, Room 3255
 Mailing address: 13120 East 19th Avenue, 3rd Floor
 Aurora, CO 80045
 Phone number: 303-724-1812
 Web Page: <https://nursing.cuanschutz.edu/>
 Email: nursing.admissions@cuanschutz.edu
 (nursing.admissions@ucdenver.edu)

Overview: CU Nursing's Master of Science Degree is Tops

Ranked among the top ten graduate programs nationally, according to U.S. News & World Report (<https://news.cuanschutz.edu/news-stories/college-nursing-program-ranked-top-10-u-s-news-world-report/>), CU Nursing's online master's degree program was named 17th best out of more than 200 programs nationwide in 2025. Our MSN online administration and leadership program (iLEAD) earned the 7th best spot out of 61 programs. We are recognized because of our exceptional faculty, administrators, students and quality innovative programs. In fact, CU Nursing has led the way for nursing education and has the distinction of being the birthplace of the Nurse Practitioner program. Our faculty excel at the top of their fields, and don't just teach. They also have clinical practices and see patients.

Our Master of Science in nursing program is designed to prepare nurses for career paths for future leaders in direct and indirect care roles in nursing. Our graduates are prepared to formulate clinical, administrative or policy decisions to promote health with clients experiencing wellness, acute or chronic illness and to develop, manage and evaluate the care within communities and health care systems.

A distinct benefit of our program is that we are part of a major medical campus that includes three hospitals – two of which are nationally ranked – the University of Colorado Health Hospital, Children's Hospital Colorado and the Veterans Administration. In addition, the College has its own nurse-run and led clinics that allow for our students to gain on-the-job training.

The CU College of Nursing Master of Science (MSN) degree will help you advance your career and increase your earning potential. You'll build valuable clinical skills while completing core classes and specialized coursework.

Our 12 Specialty Tracks:

- Adult-Gerontology
 - Adult-Gerontology Acute Care Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ag-acnp/>)
 - Adult-Gerontology Primary Care Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ag-pcnp/>)
 - Clinical Nurse Specialist (CNS) Adult-Gerontology (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ag-cns/>)
- Family Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/fnp/>)
- Health Care Informatics (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/hci/>)

- i-LEAD Nursing Leadership and Health Care Systems (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/i-lead/>)
- Nurse-Midwifery (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/midwifery/>)
- Pediatric Nurse Practitioner Acute Care (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ac-pnp/>)
- Pediatric Nurse Practitioner Primary Care (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/pnp-pc/>)
- Psychiatric Mental Health Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/pmhnpr/>)
- Veteran and Military Health Care (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/vmhc/>)
- Women's Health Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/whnp/>)

Graduates of the Advanced Practice Registered Nurse (APRN) tracks in the Master's Program (this includes all nurse practitioner, nurse-midwifery, and CNS tracks) are eligible to apply for national certification by examination. **APRN** certification is required for licensure in each state, including Colorado, and both national certification and state licensure is required for practice.

Learn more about the requirements for APRN licensure by visiting the Colorado Board of Nursing APRN application forms page <https://dpo.colorado.gov/Nursing/APNApplications> (<https://dpo.colorado.gov/Nursing/APNApplications/>). **There are certification options for other Master's Program tracks; however, certification is not required for practice.**

Admissions

For a full list of MS admissions requirements, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/masters-program-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/masters-program-admissions/>)

Applications are submitted through Nursing's Centralized Application Service (NursingCAS (<https://nursingcas.org/>)).

Choose one of our specialties:

Students select from 12 different specialties, comprised of direct patient care and indirect patient care areas of study. Past coursework to be applied toward the degree will be evaluated on a case-by-case basis. The specific courses required for each specialty option are included in the plans of study tab. Graduates of specialty tracks are eligible to apply for national certification by examination. Once you pass the certification examination, nurse practitioners, nurse midwives and CNS specialties may apply for licensure in all 50 states, including Colorado where licensure is granted as an Advanced Practice Registered Nurse (APRN) and is required for practice. (Learn more at the Colorado Board of Nursing APRN (<https://dpo.colorado.gov/Nursing/APNApplications/>)).

Direct Patient Care Specialties

- Adult-Gerontology
 - Adult-Gerontology Acute Care Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ag-acnp/>) This specialty prepares nurses to provide care for adult and older patients with acute, critical and complex chronic illnesses. Graduates will be prepared to formulate clinical, administrative and policy decisions to care for the very sickest elderly patients and provide acute care services. Students will

also learn to develop, manage and evaluate the care within hospitals and healthcare systems.

- **Adult-Gerontology Primary Care Nurse Practitioner** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ag-pcnp/>) As an AGPCNP, you'll work closely with patients ranging from teenagers to older and disabled adults through the end of life, maximizing their ability to stay active, healthy and strong. Our program prepares advanced practicing nurses to deliver high-quality care and transform lives. Specifically, you'll learn to diagnose and manage acute and chronic health problems, enhance your leadership and clinical decision-making skills and promote health and disease prevention.
- **Clinical Nurse Specialist (CNS) Adult-Gerontology** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ag-cns/>) You can be an advocate for our most vulnerable population when you become an Adult-Gerontology Clinical Nurse Specialist (AGCNS) at CU Nursing. Our specialists care for patients from wellness through acute care, specifically focusing on acutely and critically ill patients, medical-surgical patients and elderly patients, along with patients requiring palliative care services (chronic illness management and end-of-life care). The AG CNS is involved in all levels of healthcare from long-term care to acute-care hospitals to home care.
- **Family Nurse Practitioner** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/fnp/>) Our FNP specialty track will give you the clinical skills and education to treat physiologic and psychologic health, and prevent, assess and manage common, acute and chronic illnesses. Having specialized education and clinical training in family care, you will be able to provide primary care services for infants to seniors. Practitioners also conduct wellness checks, administer treatments, screen for diseases and order tests to improve patients' overall health and well-being.
- **Nurse-Midwifery** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/midwifery/>) Do you have a passion for childbirth and counseling women before conception, during pregnancy, birth and post-partum? CU Nursing's Nurse-Midwifery track is the specialty area for you! Because we run and operate our own Midwifery clinics, our students have a distinct advantage over other programs specializing in midwifery. In addition to attending births, our midwives perform annual exams, counsel families and write prescriptions.
- **Pediatric Nurse Practitioner Acute Care** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/ac-pnp/>) This specialty prepares graduates to care for children with complex acute, critical and chronic illness from birth to young adulthood in critical care units, emergency departments, inpatient units and ambulatory-specialty based clinics. Most of the clinical placements happen right on campus at Children's Hospital Colorado, a nationally ranked Top 10 Academic Pediatric Tertiary Care Facility.
- **Pediatric Nurse Practitioner Primary Care** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/pnp-pc/>) Make a difference in a child's life. Help maximize children's health and prevent disease from birth through their young adult years from one of the best programs in the country. U.S. News & World Report ranked our program as #8 in Top Nursing Programs in 2017. In this specialty, you will learn about well child-care and prevention management of common pediatric acute and chronic medical diseases and illnesses. The practitioners are involved in health promotion, screening, and primary prevention education.
- **Psychiatric Mental Health Nurse Practitioner** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/pmhnpr/>) PMHNPs assess, diagnose and treat people with psychiatric disorders and illnesses such as mood disorders, substance abuse, anxiety and depression. The nurses can also provide therapy and prescribe medications for patients who have mental health disorders and drug and alcohol abuse problems. At CU Nursing, we emphasize holistic care, integrated mental health, cultural sensitivity and substance treatment to prevent and treat psychiatric conditions. Coursework includes psychotherapy, neurobiology, and psychopharmacology content for patients during their lifetime.
- **Women's Health Nurse Practitioner** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/whnp/>) Focus on the care of women throughout their lives as a Women's Health Nurse Practitioner (WHNP). Learn about conditions specific to women to improve their health, prevent disease and make smart lifestyle choices. WNHPs provide comprehensive care focusing on reproductive, obstetric and gynecological health. While pursuing your MS in this specialty, you'll work in private practice settings, learning from the best of the best where you will learn about the comprehensive health needs of women: gynecological, prenatal, post-partum care, common minor and acute health problems, as well as influences that affect women's lives. The WHNP program is based on in-depth knowledge of nursing and scientific theory, physiology and pathophysiology, research utilization, and clinical decision-making.

Indirect Patient Care Specialties

- **Health Care Informatics** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/hci/>) Looking for an exciting career that combines your clinical expertise with your passion for technology? The field of informatics provides opportunities for health care professionals to become leaders in the forefront of health care transformation through the use of provider and patient care technologies. Our online programs prepare you to plan, select, design and implement emerging technologies that advance consumer engagement, support clinical decision making, promote safety and drive quality care.
- **i-LEAD Nursing Leadership and Health Care Systems** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/i-lead/>) So, you're on track to be a leader in your organization, but you need additional skills in order to do so. iLEAD provides nurses who are interested in advancing their careers with essential competencies to become effective leaders and managers in a variety of health care settings. In this specialty, you'll learn to implement evidence-based practices and data-driven processes to provide high-quality care with best outcomes. You'll be equipped to manage others across a continuum of primary care, acute care, long-term care, school nursing, correctional facilities, home care and care coordination. Knowledge gained in cultural competence, informatics and evidence-based practice will provide educated leaders with the ability to excel in today's complex and changing health care system.
- **Veteran and Military Health Care** (<https://nursing.cuanschutz.edu/academics/graduate-programs/ms/vmhc/>) Featured in US News & World Report as part of a constellation of initiatives to serve our veteran population, this emerging health care specialty is first-of-its-kind in the nation. Designed for working nurses who are currently novice to expert leaders and are affiliated with the military and/or veteran community, this specialty prepares you to be leaders, innovators, care coordinators, and change agents in caring for veterans and service members. This innovative and focused curriculum is designed to meet the needs of the individual learner.

and allows students to rapidly apply knowledge in their own practice settings.

Curriculum

Adult Gerontology Programs

Adult Gerontology Acute Nurse Practitioner - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic Credits	3
NURS 6286	Foundations Informatics ³ Didactic Credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic Credits	3
NURS 6070	Policy and Politics of Health ³ Didactic Credits	3
NURS 6761	Advanced Assessment ³ Didactic Credits	3
NURS 6859	Advanced Professional Role ² Didactic Credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic Credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic Credits	3
NURS 6590	Introduction to Adult Gerontology Acute Care Nurse Practitioner ² Didactic Credits, 1 Clinical Credit	3
NURS 5981	AGACNP Practicum I ³ Clinical Credits; 135 Clinical Hours	3
NURS 6600	Adult Gerontology Acute Care Nurse Practitioner I ³ Didactic Credits	3
NURS 5982	AGACNP Practicum II ³ Clinical Credits; 135 Clinical Hours	3
NURS 6620	Adult Gerontology Acute Care NP Diagnostics & Therapeutics ² Didactic Credits	2
NURS 5983	AGACNP Practicum III ⁴ Clinical Credits; 180 Clinical Hours	4
NURS 6610	Adult Gerontology Acute Care Nurse Practitioner 2 ³ Didactic Credits	3
NURS 5984	AGACNP Practicum IV ⁴ Clinical Credits; 180 Clinical Hours	4
NURS 6630	Advanced Practice Synthesis in Adult Gerontology Acute Care ¹ Didactic Credit	1
Total Hours		49

Total Didactic Credits: 35

Total Clinical Credits: 14

Total Clinical Hours: 630

Adult Gerontology Primary Care Nurse Practitioner - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 5971	AGPCNP Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6819	AGPCNP Primary Hlth Care I: Hlth Promotion & Prevention ³ Didactic credits	3
NURS 5972	AGPCNP Practicum II ³ Clinical credits, 135 Clinical hours	3

NURS 6882	Foundational Clinical Skills Adv Pract NP ¹ Didactic credits	1
NURS 6829	Primary Care II: Diagnosis and Management I ³ Didactic credits	3
NURS 5973	AGPCNP Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 6839	Primary Care III: Diagnosis and Management II ³ Didactic credits	3
NURS 5974	AGPCNP Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 6849	PC IV: DM III Care for Complex Older Adult ³ Didactic credits	3
Total Hours		48

Total Didactic Credits: 36

Total Clinical Credits: 12

Total Clinical Hours: 540

Adult Gerontology Clinical Nurse Specialist - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic Credits	3
NURS 6286	Foundations Informatics ³ Didactic Credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic Credits	3
NURS 6070	Policy and Politics of Health ³ Didactic Credits	3
NURS 6761	Advanced Assessment ³ Didactic Credits	3
NURS 6882	Foundational Clinical Skills Adv Pract NP (Optional)	1
NURS 6859	Advanced Professional Role ² Didactic Credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic Credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic Credits	3
NURS 5901	AG CNS Advanced Practicum I ³ Clinical Credits; 135 Clinical Hours	1-3
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic Credits	3
NURS 5902	AG CNS Advanced Practicum II ³ Clinical Credits; 135 Clinical Hours	1-3
NURS 6740	ADULT-GERONTOLOGY CNS WELLNESS TO ILLNESS ³ Didactic Credits	3
NURS 5903	AG CNS Advanced Practicum III ³ Clinical Credits; 135 Clinical Hours	1-3
NURS 6742	Adult-GerontologyCNS AdvancedPractice AcuteCareNursing ³ Didactic Credits	3
NURS 5904	AG CNS Advanced Practicum IV ³ Clinical Credits; 135 Clinical Hours	1-3
NURS 6746	Adult-Gero CNS Complex patient management ³ Didactic Credits	3
Total Hours		40-48

Total Didactic Credits: 35

Total Clinical Credits: 12

Total Clinical Hours: 540

Family Nurse Practitioner - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic Credits	3
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic Credits	3

NURS 6859	Advanced Professional Role ² Didactic Credits	2
NURS 6222	Adv Pharm & Therapeutics ³ Didactic Credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic Credits	3
NURS 6761	Advanced Assessment ³ Didactic Credits	3
NURS 6070	Policy and Politics of Health ³ Didactic Credits	3
NURS 6640	FNP Hlth Promotion, Prevention, Screening ³ Didactic Credits	3
NURS 6434	FNP Care of the Pediatric Patient ³ Didactic Credits	3
NURS 6739	Ob-Gyn Essentials for the FNP ³ Didactic Credits	3
NURS 6286	Foundations Informatics ³ Didactic Credits	3
NURS 5931	FNP Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6882	Foundational Clinical Skills Adv Pract NP ¹ Didactic Credits	1
NURS 6549	FNP Adv. Clinical Skills ¹ Didactic Credits	1
NURS 5932	FNP Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6528	FNP DM Physio & Psych Health I ³ Didactic Credits	3
NURS 5933	FNP Practicum III ⁴ Clinical credits, 180 Clinical hours	4
NURS 6529	FNP DM Physio & Pysch Health II ³ Didactic Credits	3
NURS 5934	FNP Practicum IV ⁴ Clinical credits, 180 Clinical hours	4
NURS 6950	Synthesis/Integration/Transition into FNP Practice ² Didactic Credits	2

Total Didactic Credits: 42**Total Clinical Credits: 14****Total Clinical Hours: 630**

Health Care Informatics - MS

Code	Title	Hours
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic Credits	3
NURS 6070	Policy and Politics of Health ³ Didactic Credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic Credits	3
NURS 6286	Foundations Informatics ³ Didactic Credits	3
NURS 6794	Decision Support and Data Management ³ Didactic Credits	3
NURS 6274	Semantic Representation ³ Didactic Credits	3
NURS 6759	Informatics Adv Practicum ³ or 6 Clinical Credits	3-6
NURS 6290	Information Systems Life Cycle (Nursing students must enroll for 4 credits) ⁴ Didactic Credits for Nursing Students	3-4
NURS 6284	Digital Tools for Connected Health (Specialty Course) ³ Didactic Credits	3
NURS 6285	HCI Design Principles (Specialty Course) ³ Didactic Credits	3
NURS 6279	Knowledge Management (Specialty Course) ³ Didactic Credits	3
NURS 6293	Database Mgmt Systems (Specialty Course) ³ Didactic Credits	3
Total Hours		36-40

Total Didactic Credits: 28**Total Practicum Credits: 6****Total Practicum Hours: 270**

i-LEAD Nursing Leadership and Health Care Systems - MS

Code	Title	Hours
NURS 6009	Theory Foundation for Advanced Nursing ³ Clinical credits	3
NURS 6286	Foundations Informatics ³ Clinical credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Clinical credits	3
NURS 6793	Relational Communication ³ Clinical credits	3
NURS 6070	Policy and Politics of Health ³ Clinical credits	3
NURS 6790	Systems and Leadership Theory ³ Clinical credits	3
NURS 6794	Decision Support and Data Management ³ Clinical credits	3
NURS 6973	State of Science: Healthcare Systems ³ Clinical credits	3
NURS 6795	i-LEAD Administrative Internship ³ Clinical Credits	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Clinical credits	3
Total Hours		30

Total Didactic Credits: 27**Total Internship Credits: 3****Total internship Hours: 135**

Nurse-Midwifery - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6377	Foundations of Midwifery Care ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6376	Reproductive Physiology ³ Didactic credits	3
NURS 6344	NMW Gynecologic Care ³ Didactic credits	3
NURS 6380	Primary Care of Women ³ Didactic Credits	3
NURS 6378	Care of the Childbearing Family I ³ Didactic credits	3
NURS 5941	NMW Advanced Practicum I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6374	NMW/WHNP Adv Clinical Skills - Outpatient ¹ Clinical credit	1
NURS 5942	NMW Advanced Practicum II ⁴ Clinical credits, 180 Clinical hours	4
NURS 6379	Care of the Childbearing Family II ⁴ Didactic credits	4
NURS 6375	NMW Advanced Clinical Skills - Inpatient ¹ Clinical credit	1

NURS 5943	NMW Advanced Practicum III: Integration ⁸ Clinical credits, 360 Clinical hours	8
Total Hours		59

Total Didactic Credits: 40
Total Clinical Credits: 18
Total Clinical Hours: 720

Women's Health Nurse Practitioner - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6376	Reproductive Physiology ³ Didactic credits	3
NURS 6380	Primary Care of Women ³ Didactic Credits	3
NURS 6344	NMW Gynecologic Care ³ Didactic credits	3
NURS 5961	WHNP Advanced Practicum I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6374	NMW/WHNP Adv Clinical Skills - Outpatient ¹ Clinical credit	1
NURS 6378	Care of the Childbearing Family I ³ Didactic credits	3
NURS 5962	WHNP Advanced Practicum II ⁴ Clinical credits, 180 Clinical hours	4
NURS 5963	WHNP Advanced Practicum III ⁶ Clinical credits, 270 Clinical hours	6
Total Hours		50

Total Didactic Credits: 34
Total Clinical Credits: 15
Total Clinical Hours: 630

Pediatric Nurse Practitioner Acute Care - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic Credits	3
NURS 6286	Foundations Informatics ³ Didactic Credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic Credits	3
NURS 6070	Policy and Politics of Health ³ Didactic Credits	3
NURS 6761	Advanced Assessment ³ Didactic Credits	3
NURS 6859	Advanced Professional Role ² Didactic Credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic Credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic Credits	3
NURS 5921	AC-PNP Practicum I ² Clinical Credits 90 Clinical hours	2
NURS 6490	Pediatric Primary Care Essentials ³ Didactic Credits	3
NURS 6450	Advanced Pediatric Physical Assessment ¹ Didactic Credit	1

NURS 5922	AC PNP Advanced Practicum II ² Clinical Credits 90 Clinical hours	2
NURS 6456	Advance Pediatric Clinical Skills ¹ Didactic Credit	1
NURS 5923	AC PNP Advanced Practicum III ³ Clinical Credits 135 Clinical hours	3
NURS 6500	Acute Care Pediatric Nurse Practitioner I ³ Didactic Credits	3
NURS 5924	AC-PNP Practicum IV ³ Clinical Credits 135 Clinical hours	3
NURS 6510	Acute Care Pediatric Nurse Practitioner 2 ³ Didactic Credits	3
NURS 5925	AC PNP Advanced Practicum V ³ Clinical Credits 135 Clinical hours	3
NURS 6520	Acute Care Pediatric Nurse Practitioner 3 ³ Didactic Credits	3
Total Hours		50

Total Didactic Credits: 37
Total Clinical Credits: 13
Total Clinical Hours: 585

Pediatric Nurse Practitioner Primary Care - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 5911	PNP Advanced Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6450	Advanced Pediatric Physical Assessment ¹ Didactic credit	1
NURS 6478	Primary Care of Children: Well Child Care ⁴ Didactic credits	4
NURS 5912	PNP Advanced Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6456	Advance Pediatric Clinical Skills ¹ Didactic credit	1
NURS 5913	PNP Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 6488	Pediatric Minor and Acute Illness ³ Didactic credits	3
NURS 5914	PNP Advanced Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 6496	Pediatric Chronic Illness and Disability ³ Didactic credits	3
Total Hours		47

Total Didactic Credits: 35
Total Clinical Credits: 12
Total Clinical Hours: 540

Psychiatric Mental Health Nurse Practitioner - MS

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6664	Integrated Behavioral Healthcare & Common Psychiatri ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6665	PsyTherapy, BehavioralChange & HP Lifespan ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6659	Adv Assess,Neurobiology&Psychopharm AcrossLifespan ³ Didactic credits	3
NURS 5991	PMHNP Advanced Practicum I ² Clinical credits, 90 Clinical hours	2
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6661	Diagnosis and Management/Adults PMHNP ³ Didactic credits	3
NURS 5992	PMHNP Advanced Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6662	Diagnosis and Management/Children and Older Adult PMHNP ³ Didactic credits	3
NURS 5993	PMHNP Advanced Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 5994	PMHNP Advanced Practicum IV ⁶ Clinical credits, 270 Clinical hours	6
Total Hours		52

Total Didactic Credits: 38
Total Clinical Credits: 14
Total Clinical Hours: 630

Veteran and Military Health Care - MS

Code	Title	Hours
NURS 6009	Theory Foundation for Advanced Nursing ⁴⁵ Didactic hours	3
NURS 6286	Foundations Informatics ⁴⁵ Didactic hours	3
NURS 6070	Policy and Politics of Health ⁴⁵ Didactic hours	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ⁴⁵ Didactic hours	3
NURS 6018	Home from the Battlefield: Psychological Health Care ⁴⁵ Didactic hours	3
NURS 6023	Veteran and Military Health Care Systems ⁴⁵ Didactic hours	3
NURS 6015	Women & War ⁴⁵ Didactic hours	3
NURS 6017	On the Home Front: Supporting Vet & Military Families ⁴⁵ Didactic hours	3

NURS 6019 Wounds of War: Military & Veteran Disability Evals 3
 45 Didactic hours

NURS 6024 Caring for Veterans: Aging, Chronicity, & End of Life 3
 45 Didactic hours

NURS 6025 Veteran and Military Health Care Admin Internship 2
 90 Practicum hours

Total Hours **32**

Total Didactic Credits: 32

Total Practicum Credits: 2

Total Practicum Hours: 90

MS Program Outcomes

Approved January 2023

- Demonstrate the ability to translate theory and evidence into a holistic healthcare approach for individuals and populations.
- Demonstrate ability to provide and coordinate person centered nursing care when working with patients and families within or across populations and settings.
- Implement interdisciplinary strategies to improve population health outcomes and promote health equity for all patients, families, and communities through collaborative partnerships.
- Disseminate nursing scholarship to improve health and transform health care.
- Integrate quality and safety evidence to promote system effectiveness and individual performance
- Cultivate interprofessional teams that enhance healthcare experiences and outcomes for patients, families, communities, and partnerships.
- Lead within complex systems to provide quality and cost-effective healthcare to improve health and health equity for diverse populations.
- integrate informatics processes and technologies to manage and improve the delivery of safe, quality, and efficient healthcare services.
- Cultivate the future identity and ideals of the nursing profession.
- Demonstrate leadership skills that support organizational resilience as well as personal and professional well becoming.

Nursing Certificates

Expanding Your Skills Through Certificates in Specific Areas of Study

Did you know you can expand your skills by earning a graduate-level certificate or post-graduate certificate in specialized areas of study?

Certificates are one of the fastest-growing postsecondary credential awarded over the past several decades, providing competency-based skills to enhance your knowledge and value to an organization.

Post-Graduate Certificates For those of you who already have a Master of Science in Nursing degree, our post-graduate certificates are the right option for you expand your skills and advance in your chosen profession. Nursing students may seek a post-graduate certificate for many reasons, including the ability to specialize in multiple areas within the nursing profession without having to pursue a DNP or another advanced degree as a step to taking on a new area of specialty when seeking a additional education. The program of study for the post-graduate certificate is determined by an evaluation of the student's previous course work against the required MS (indirect care only) or BS-DNP competencies, including those specified by external certification and accrediting bodies. Each student's course work is evaluated on an individual basis. To see what courses are required, view the MS or BS-DNP option for which you are interested in pursuing a post-graduate certificate. You will only have to complete the courses for which you have not yet received credit in your chosen specialty option. Enrollment is on a space-available basis. Graduates of specialty tracks are eligible to apply for national certification by examination. You will learn more about the certification organizations appropriate for this specialty during the completion of your program. Upon successful completion of the certification examination, Nurse Practitioner, Nurse Midwives, and CNS specialties may apply for licensure in all 50 states, including Colorado (visit the Colorado Board of Nursing APRN (<https://dpo.colorado.gov/Nursing/APNApplications/>) application forms page), where licensure is granted as an Advanced Practice Registered Nurse (APRN) and is required for practice.

Our 12 Specialty Tracks:

- Adult-Gerontology
 - Adult-Gerontology Acute Care Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/ag-acnp/>)
 - Adult-Gerontology Primary Care Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/ag-pcnp/>)
 - Clinical Nurse Specialist (CNS) Adult-Gerontology (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/ag-cns/>)
- Family Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/fnp/>)
- Health Care Informatics (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/hci/>)
- i-LEAD Nursing Leadership and Health Care Systems (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/i-lead/>)
- Nurse-Midwifery (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/midwifery/>)
- Pediatric Nurse Practitioner Acute Care (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/ac-pnp/>)

- Pediatric Nurse Practitioner Primary Care (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/pnp-pc/>)
- Psychiatric Mental Health Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/pmhnp/>)
- Veteran and Military Health Care (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/vmhc/>)
- Women's Health Nurse Practitioner (<https://nursing.cuanschutz.edu/academics/graduate-programs/pgc/whnp/>)

Graduate-Level Certificates consist of academic credit offerings focused on a specialized area of study with defined outcomes. They are designed to provide extended study education to graduate-level and post-graduate-level professionals. The College of Nursing offers graduate-level certificates in the following areas:

- Health Care Informatics Certificate (<https://nursing.cuanschutz.edu/academics/graduate-programs/gc/hci/>) This certificate provides an opportunity for health care professionals, particularly those health care professionals without a BS in nursing, to acquire knowledge and skills in the rapidly progressing field of informatics. With the recent movement toward the adoption of the electronic health record and the need for IT infrastructure to increase patient safety and facilitate evidence-based practice, there is a growing need for more informatics specialists. This certificate provides opportunities for those new to the field and those who may be practicing in the field and need a professional update.
- Nursing Education Certificate (<https://nursing.cuanschutz.edu/academics/graduate-programs/gc/nec/>) (<https://nursing.cuanschutz.edu/academics/graduate-programs/gc/nec/>) Explore best practices in evidence-based teaching and learning through a flexible, online format. Broaden your nursing career options; take the next step to prepare yourself for a role in nursing education. Combine clinical expertise with nursing education to pursue career opportunities in patient education, nursing education programs, and community education. Program content facilitates learning through evidence-based teaching and learning strategies, focusing on practical nursing application and emerging practices in nursing education. Emphasis is on the knowledge and skills needed to develop curricula, teaching skills, evaluation strategies, and integrating technology in the classroom, clinical, and online environments. Complete the certificate in one year or take as individual courses. The 9-credit Nursing Education Certificate Program consists of three required courses, each 3 semester credit hours.
- Veteran and Military Health Care Certificate (<https://nursing.cuanschutz.edu/academics/graduate-programs/gc/vmhc/>) (<https://nursing.cuanschutz.edu/academics/graduate-programs/gc/vmhc/>) Geared to the unique attributes of the veteran and military service member population, this certificate addresses the specific needs of this population including an understanding of veteran and military culture, family dynamics, the invisible and visible consequences of war, service-connected conditions, environmental exposures, diversity, resiliency, reintegration, and making change in federal health care delivery systems. This Graduate Certificate program prepares nurses and other health care professionals to be leaders, care coordinators, and innovators in the Veterans Administration, Military Health System, and civilian community for this vulnerable population.

The Graduate Certificate curriculum consists of four of the six VMHC specialty courses. All courses are online and are available as stand-alone courses to non-degree students in all professions, as well as current CU degree seeking students. Each course is worth 3 graduate-level credits.

Admissions

For further information, including application deadlines and application link, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/post-graduate-certificates-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/post-graduate-certificates-admissions/>).

Post-Masters Certificates

Adult Gerontology Acute Care Nurse Practitioner

Code	Title	Hours
NURS 5981	AGACNP Practicum I ^{2 Clinical credits, 90 Clinical hours}	3
NURS 6600	Adult Gerontology Acute Care Nurse Practitioner I ^{3 Didactic credits}	3
NURS 5982	AGACNP Practicum II ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6620	Adult Gero Acute Care NP Diagnostics & Therapeutics ^{2 Didactic credits}	2
NURS 5983	AGACNP Practicum III ^{3 Clinical credits, 135 Clinical hours}	4
NURS 6610	Adult Gerontology Acute Care Nurse Practitioner 2 ^{3 Didactic credits}	3
Total Hours		18

Total Didactic Credits: 8

Total Clinical Credits: 8

Total Clinical Hours: 360

Adult Gerontology Primary Care Nurse Practitioner

Code	Title	Hours
NURS 5971	AGPCNP Practicum I ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6819	AGPCNP Primary Hlth Care I: Hlth Promotion & Prevention ^{3 Didactic credits}	3
NURS 5972	AGPCNP Practicum II ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6882	Foundational Clinical Skills Adv Pract NP ^{1 Didactic credit}	1
NURS 6829	Primary Care II: Diagnosis and Management I ³	3
NURS 5973	AGPCNP Practicum III ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6839	Primary Care III: Diagnosis and Management II ³	3
NURS 5974	AGPCNP Practicum IV ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6849	PC IV: DM III Care for Complex Older Adult ^{3 Didactic credits}	3
Total Hours		25

Total Didactic Credits: 13

Total Clinical Credits: 12

Total Clinical Hours: 540

Adult Gerontology Clinical Nurse Specialist (CNS)

Code	Title	Hours
NURS 5901	AG CNS Advanced Practicum I ^{3 Clinical credits, 135 Clinical hours}	1-3

NURS 6740	ADULT-GERONTOLOGY CNS WELLNESS TO ILLNESS ^{3 Didactic credits}	3
NURS 5902	AG CNS Advanced Practicum II ^{3 Clinical credits, 135 Clinical hours}	1-3
NURS 6742	Adult-GerontologyCNS AdvancedPractice AcuteCareNursing ^{3 Didactic credits}	3
NURS 5903	AG CNS Advanced Practicum III ^{3 Clinical credits, 135 Clinical hours}	1-3
NURS 6746	Adult-Gero CNS Complex patient management ³	3
NURS 5904	AG CNS Advanced Practicum IV ^{3 Clinical credits, 135 Clinical hours}	1-3

Total Hours

13-21

Total Didactic Credits: 9

Total Clinical Credits: 12

Total Clinical Hours: 540

Family Nurse Practitioner

Code	Title	Hours
NURS 6640	FNP Hlth Promotion, Prevention, Screening ³	3
NURS 6434	FNP Care of the Pediatric Patient ^{3 Didactic credits}	3
NURS 6739	Ob-Gyn Essentials for the FNP ^{3 Didactic credits}	3
NURS 5931	FNP Practicum I ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6882	Foundational Clinical Skills Adv Pract NP ^{1 Didactic credit}	1
NURS 6549	FNP Adv. Clinical Skills ^{1 Didactic credit}	1
NURS 5932	FNP Practicum II ^{3 Clinical credits, 135 Clinical hours}	3
NURS 6528	FNP DM Physio & Psych Health I ^{3 Didactic credits}	3
NURS 5933	FNP Practicum III ^{4 Clinical credits, 180 Clinical hours}	4
NURS 6529	FNP DM Physio & Pysch Health II ^{3 Didactic credits}	3
NURS 5934	FNP Practicum IV ^{4 Clinical credits, 180 Clinical hours}	4
NURS 6950	Synthesis/Integration/Transition into FNP Practice ^{2 Didactic credits}	2
Total Hours		33

Total Didactic Credits: 19

Total Clinical Credits: 14

Total Clinical Hours: 630

Health Care Informatics

Code	Title	Hours
NURS 6794	Decision Support and Data Management	3
NURS 6274	Semantic Representation	3
<i>Select 2 Courses from the Specialty Options below:</i>		
NURS 6279	Knowledge Management	3
NURS 6284	Digital Tools for Connected Health	3
NURS 6285	HCI Design Principles	3
NURS 6286	Foundations Informatics	3
NURS 6293	Database Mgmt Systems	3
Total Hours		21

i-LEAD Nursing Leadership and Health Care Systems Certificate

Code	Title	Hours
NURS 6790	Systems and Leadership Theory	3
NURS 6793	Relational Communication	3
NURS 6794	Decision Support and Data Management	3
NURS 6973	State of Science: Healthcare Systems	3
NURS 6603	Health Systems and Management	3
NURS 6795	i-LEAD Administrative Internship	3
Total Hours		18

Nurse-Midwifery

Code	Title	Hours
NURS 6377	Foundations of Midwifery Care ² Didactic credits	2
NURS 6376	Reproductive Physiology ³ Didactic credits	3
NURS 6344	NMW Gynecologic Care ³ Didactic credits	3
NURS 5941	NMW Advanced Practicum I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6378	Care of the Childbearing Family I ³ Didactic credits	3
NURS 6850	NMW Primary Care of Women ² Didactic credits	2
NURS 6374	NMW/WHNP Adv Clinical Skills - Outpatient ¹ Clinical credit	1
NURS 5942	NMW Advanced Practicum II ⁴ Clinical credits, 180 Clinical hours	4
NURS 6379	Care of the Childbearing Family II ⁴ Didactic credits	4
NURS 6375	NMW Advanced Clinical Skills - Inpatient ¹ Clinical credit	1
NURS 5943	NMW Advanced Practicum III: Integration ⁸ Clinical credits, 360 Clinical hours	8
Total Hours		35

Total Didactic Credits: 17
Total Clinical Credits: 18
Total Clinical Hours: 720

Women's Health Nurse Practitioner

Code	Title	Hours
NURS 6376	Reproductive Physiology ³ Didactic credits	3
NURS 6344	NMW Gynecologic Care ³ Didactic credits	3
NURS 5961	WHNP Advanced Practicum I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6374	NMW/WHNP Adv Clinical Skills - Outpatient ¹ Clinical credit	1
NURS 6378	Care of the Childbearing Family I ³ Didactic credits	3
NURS 6850	NMW Primary Care of Women ² Didactic credits	2
NURS 5962	WHNP Advanced Practicum II ³ Clinical credits, 180 Clinical hours	4
NURS 5963	WHNP Advanced Practicum III ⁴ Clinical credits, 180 Clinical hours	6
NURS 5964	WHNP Advanced Practicum IV ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		30

Total Didactic Credits: 11
Total Clinical Credits: 15
Total Clinical Hours: 540

Pediatric Nurse Practitioner Acute Care

Code	Title	Hours
NURS 5923	AC PNP Advanced Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 6500	Acute Care Pediatric Nurse Practitioner I ³ Didactic credits	3
NURS 6450	Advanced Pediatric Physical Assessment ¹ Didactic credit	1
NURS 6510	Acute Care Pediatric Nurse Practitioner 2 ³ Didactic credits	3
NURS 6456	Advance Pediatric Clinical Skills ¹ Didactic credit	1
NURS 6520	Acute Care Pediatric Nurse Practitioner 3 ³ Didactic credits	3
NURS 5924	AC-PNP Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 5925	AC PNP Advanced Practicum V ² Clinical credits, 90 Clinical hours	3
Total Hours		20

Total Didactic Credits: 11
Total Clinical Credits: 8
Total Clinical Hours: 360

Pediatric Nurse Practitioner Primary Care

Code	Title	Hours
NURS 5911	PNP Advanced Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6450	Advanced Pediatric Physical Assessment ¹ Didactic credit	1
NURS 6478	Primary Care of Children: Well Child Care ⁴ Didactic credits	4
NURS 5912	PNP Advanced Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6456	Advance Pediatric Clinical Skills ¹ Didactic credit	1
NURS 5913	PNP Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 6488	Pediatric Minor and Acute Illness ³ Didactic credits	3
NURS 5914	PNP Advanced Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 6496	Pediatric Chronic Illness and Disability ³ Didactic credits	3
Total Hours		24

Total Didactic Credits: 12
Total Clinical Credits: 12
Total Clinical Hours: 540

Psychiatric Mental Health Nurse Practitioner

Code	Title	Hours
NURS 6664	Integrated Behavioral Healthcare & Common Psychiatri ³ Didactic credits	3
NURS 6659	Adv Assess, Neurobiology & Psychopharm Across Lifespan ³ Didactic credits	3
NURS 5991	PMHNP Advanced Practicum I ² Clinical credits, 90 Clinical hours	2
NURS 6661	Diagnosis and Management/Adults PMHNP ³ Didactic credits	3

NURS 6665	PsyTherapy, BehavioralChange & HP Lifespan ³ Didactic credits	3
NURS 5992	PMHNP Advanced Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6662	Diagnosis and Management/Children and Older Adult PMHNP ³ Didactic credits	3
NURS 5993	PMHNP Advanced Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 5994	PMHNP Advanced Practicum IV ⁶ Clinical credits, 270 Clinical hours	6
Total Hours		29

Total Didactic Credits: 15
Total Clinical Credits: 14
Total Clinical Hours: 630

Veteran and Military Health Care

Code	Title	Hours
NURS 6018	Home from the Battlefield: Psychological Health Care ⁴⁵ Didactic Hours	3
NURS 6023	Veteran and Military Health Care Systems ⁴⁵ Didactic Hours	3
NURS 6015	Women & War ⁴⁵ Didactic Hours	3
NURS 6017	On the Home Front: Supporting Vet & Military Families ⁴⁵ Didactic Hours	3
NURS 6019	Wounds of War: Military & Veteran Disability Evals ⁴⁵ Didactic Hours	3
NURS 6024	Caring for Veterans: Aging, Chronicity, & End of Life ⁴⁵ Didactic Hours	3
NURS 6025	Veteran and Military Health Care Admin Internship 90 Practicum Hours (including seminar)	2
Total Hours		20

Total Didactic Hours: 270
Total Practicum Hours: 90

Graduate Certificates

Health Care Informatics Certificate - 16 credits required for the certificate.

Code	Title	Hours
NURS 6794	Decision Support and Data Management	3
NURS 6274	Semantic Representation	3
Total Hours		6

Specialty Options (Select 2)

Code	Title	Hours
NURS 6279	Knowledge Management	3
NURS 6284	Digital Tools for Connected Health	3
NURS 6285	HCI Design Principles	3
NURS 6286	Foundations Informatics	3
NURS 6293	Database Mgmt Systems	3

Veteran and Military Health Care Certificate - 12 Credits required for the certificate.

Code	Title	Hours
NURS 6018	Home from the Battlefield: Psychological Health Care ⁴⁵ Didactic hours	3

NURS 6023	Veteran and Military Health Care Systems ⁴⁵ Didactic hours	3
NURS 6015	Women & War ⁴⁵ Didactic hours	3
NURS 6017	On the Home Front: Supporting Vet & Military Families ⁴⁵ Didactic hours	3
NURS 6019	Wounds of War: Military & Veteran Disability Evals ⁴⁵ Didactic hours	3
NURS 6024	Caring for Veterans: Aging, Chronicity, & End of Life ⁴⁵ Didactic hours	3
Total Hours		18

Nursing Education Certificate - 9 Credits required for the certificate.

Code	Title	Hours
NURS 7865	Outcome-focused Curriculum and Program Evaluation	3
NURS 7862	Best Practices to Enhance Teaching and Learning	3
NURS 7864	Evolving Nursing Educ Sci and Nurse Educator Roles	3

Nursing - Doctorate in Nursing Practice (DNP)

Contact Info

Office location: Education II North, Room 3255
 Mailing address: 13120 East 19th Avenue, 3rd Floor
 Aurora, CO 80045
 Phone number: 303-724-1812
 Web Page: <https://nursing.cuanschutz.edu/>
 Email: nursing.admissions@cuanschutz.edu
 (nursing.admissions@ucdenver.edu)

Overview: Our Doctor of Nursing Practice program ranked #33 in the nation's top nursing programs per U.S. News & World Report 2024

When you apply to the Doctor of Nursing Practice (DNP) program at the University of Colorado Anschutz, you are enrolling in a high-quality program that's routinely ranked among the best DNP programs in the nation by *US News & World Report*.

Our DNP program is designed for nurses who want to move into advanced practice, public health and leadership. With your DNP, you'll help improve healthcare within diverse patient populations and systems across the globe. This practice-based doctorate provides courses that focus on evidence-based practice to improve clinical care delivery, program evaluation, patient and population incomes, and health system leadership management. We offer distinct areas of study and the ability to earn a master's degree on your way to your DNP.

The hands-on practicum involves leading a project and provides students with a blend of comprehensive education with new real-world skills. Upon beginning the project portion of the DNP, there is a three day in person experience, while all of your other classes are online. In addition, students may elect to return to campus during the final DNP course for presentation of their final project. The hands-on clinical experiences are an integral part of our college mission and provide students with a blend of comprehensive education with on-the-job training. A DNP can open up new doors and give you access to more opportunities, responsibility and higher pay.

Pathways to Your DNP:

There are two paths registered nurses (RNs) can take to earn their DNP.

- **BS to DNP** - If you have a Bachelor of Science degree in nursing, you can earn your DNP through the College of Nursing with our BSN to DNP degree, which takes you directly from your BS-level work to graduating with a doctorate. And along the way, you will earn a Master of Science degree, too.
- **MS to DNP** - This program is designed for RNs who hold a Master of Science in Nursing. This program generally takes one to two years of full-time study, or two to three years of part-time study to complete.

Admissions

For a full list of DNP admissions requirements, please visit: <https://nursing.cuanschutz.edu/academics/graduate-programs/masters-dnp-phd/doctor-of-nursing-practice-admissions> (<https://nursing.cuanschutz.edu/academics/graduate-programs/masters-dnp-phd/doctor-of-nursing-practice-admissions/>).

DNP applications are submitted through Nursing's Centralized Application Service (NursingCAS (<http://www.nursingcas.org/>)).

Programs

From public health nursing to health leadership and veteran and military health care leadership, our DNP offers distinct areas of study.

- **DNP Advanced Practice Registered Nurse (APRN)** program prepares advanced practice nurses to improve healthcare within diverse patient populations and systems across the globe. Curriculum is based on *The Essentials: Core Competencies for Professional Nursing Education* (<https://www.aacnnursing.org/Portals/0/PDFs/Publications/Essentials-2021.pdf>) (AACN, 2021) and includes coursework to elevate APRNs to a new stage of leadership, advocacy, and clinical scholarship within their chosen specialty.
- **DNP Health Leadership.** Learn to be a leader in the healthcare system. This high-demand program prepares you to lead systems in hospitals to the government to nonprofits. You'll manage others across a continuum of primary care, acute care, long-term care, school nursing, correctional facilities, home care and care coordination. The focus of this post-graduate program is efficient, high-quality care with the best outcomes.
- **DNP/MPH.** Join the ranks of public health nurse leaders. Get the combined power of nursing and public health in a dual-degree program. A Doctor of Nursing Practice (DNP) is offered from the University of Colorado College of Nursing - and a Master of Public Health (MPH) is offered from the Colorado School of Public Health. This degree prepares nurse leaders to address the most pressing public health challenges of our time like COVID-19 and prepares them for national and global health leadership roles. A bonus of earning the degrees simultaneously, is this degree requires 21 fewer credits than earning the degrees separately. Students work hand-in-hand with experts to create and lead new models of care delivery that advance health equity and improve population health. Students can tailor studies to their interests. the dual degree is ideal for students with a BS in Nursing and nurses with a master's in a nursing specialty other than public/community health nursing. Nurses who hold a Master of Public/Community Health Nursing may apply to either the dual degree or the DNP-PHN degree programs.
- **DNP-PHN** Expand your reach and streamline your focus in healthcare with our Doctor of Nursing Practice Public Health Nursing (DNP-PHN) program. This specialty prepares nurses for leadership roles in public and community health settings. You'll learn how to assess, plan and evaluate nursing interventions for patients, families and clinical populations. The focus will be on promoting health, disease prevention and program management. There are several pathways to attain this degree: if you have a master's in Public Health Nursing or community health nursing; and if you are an Advanced Practice Registered Nurse (APRN) in a clinical specialty other than Public/Community Health.
- **DNP Veteran and Military Health Care Leadership.** Serve the men and women who have fought for our country by providing excellent healthcare delivery through our DNP Veteran and Military Health Care Leadership program. This program provides students with specialized education and training to work with veterans and their military families. The courses prepare nurse leaders to be care coordinators, change agents and innovators in healthcare for former and current service members. The online program is designed for working nurses who are currently novice-to-expert leaders and are affiliated with the military community.

*As a part of the DNP Capstone series of courses, all DNP-PHN and DNP/MPH students are required to complete practicum credit hours in public/community health settings. Practicum experiences for out-of-state students must be negotiated among course instructors, students, and their program advisors to best fit the student's learning needs and professional goals. For Colorado students, the majority of practice sites are in local and state community-based agencies, including public health departments. Many of the sites serve the most vulnerable populations in Colorado and Region VIII. As established by the American Association of Colleges of Nursing (2006), a minimum of 1,000 hours of supervised academic post-baccalaureate practice is required to achieve learning objectives associated with the DNP Essentials and specialty competencies. CU College of Nursing DNP curricula, including the DNP-PHN and DNP/MPH, are based on the expectation that the first 500 hours are accomplished in master's level nursing education. Baccalaureate-prepared nurses and other applicants who cannot document 500 post-baccalaureate academically-supervised clinical practicum hours will be required to supplement their DNP program by enrolling in additional (1-12) credit hours of advanced public health nursing practicum to complete the balance of the full 1,000 practicum hours.

Curriculum

MS - DNP

DNP - APRN (Advanced Practice Registered Nurse)

Code	Title	Hours
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation	2
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Practicum credits	4
NURS 8040	DNP Project Course II ⁴ Practicum Credits	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8050	DNP Project III ⁴ Practicum credits	4
Total Hours		35

Total Didactic Credits: 14

Total Practicum Credits: 12

Total Practicum Hours: 540

*Students must take BOTH 6107 and 6109. One of these may have been completed in the MS program. We will allow transfer credit for one.

**Courses may have been completed during MS degree Program. Please contact Graduate Program Advisor to review plan of study

***1 Project Practicum Credit - 45 face-to-face hours

DNP - PHN (Public Health Nursing)

Code	Title	Hours
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6303	Epidemiology & Health ³ Course may have been completed during MS Degree Program. Please contact Graduate Program Advisor to review plan	3
NURS 6633	Advanced Public Health Nursing ³ Course may have been completed during MS Degree Program. Please contact Graduate Program Advisor to review plan	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Course may have been completed during MS Degree Program. Please contact Graduate Program Advisor to review plan	3
BIOS 6601	Applied Biostatistics I ³ Course may have been completed during MS Degree Program. Please contact Graduate Program Advisor to review plan	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6752	Advanced Public Health Nursing Practicum I	1-6
NURS 6800	Leadership, Financial Management and Innovation	3
NURS 8020	DNP Project Preparation ¹ Project credit, 45 Practicum hours	2
NURS 8030	DNP Project I ⁴ Project credits, 180 Practicum hours	4
NURS 8040	DNP Project Course II ⁴ Project credits, 135 Practicum hours	4
NURS 8050	DNP Project III	4
Total Hours		36-41

**Courses may have been completed during MS degree Program. Please contact Graduate Program Advisor to review plan of study

***1 Project Practicum Credit - 45 face-to-face hours

Total Didactic Credits: 20

Total Project Credits: 10

Total Practicum Hours: 450

DNP - Health Systems Leadership

Code	Title	Hours
NURS 6009	Theory Foundation for Advanced Nursing	3
NURS 6070	Policy and Politics of Health	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence	3
NURS 6286	Foundations Informatics	3
NURS 6603	Health Systems and Management	3
NURS 6800	Leadership, Financial Management and Innovation	3
NURS 6796	Executive Leadership and Organizational Systems	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence	3
NURS 7631	Advanced Quantitative Research Design, Methods & Analysis I	3
NURS 8020	DNP Project Preparation	2
NURS 8030	DNP Project I	4
NURS 8040	DNP Project Course II	4
NURS 8050	DNP Project III	4

NURS 8000	DNP Project Variable Hours Course	1-5
Total Hours		45-49

DNP - Veteran and Military Health Care Leadership

Code	Title	Hours
NURS 6286	Foundations Informatics ^{45 Didactic Hours}	3
NURS 6024	Caring for Veterans: Aging, Chronicity, & End of Life ^{45 Didactic Hours}	3
NURS 6107	Research & Quality Improve Methods: Principles of Evidence ^{45 Didactic Hours}	3
NURS 6017	On the Home Front: Supporting Vet & Military Families ^{45 Didactic Hours}	3
NURS 6015	Women & War ^{45 Didactic Hours}	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ^{45 Didactic Hours}	3
NURS 6603	Health Systems and Management ^{45 Didactic Hours}	3
NURS 6023	Veteran and Military Health Care Systems ^{45 Didactic Hours}	3
NURS 6018	Home from the Battlefield: Psychological Health Care ^{45 Didactic Hours}	3
NURS 6796	Executive Leadership and Organizational Systems ^{45 Didactic Hours}	3
NURS 6019	Wounds of War: Military & Veteran Disability Evals ^{45 Didactic Hours}	3
NURS 6070	Policy and Politics of Health ^{45 Didactic Hours}	3
NURS 6800	Leadership, Financial Management and Innovation ^{45 Didactic Hours}	3
NURS 8020	DNP Project Preparation ^{45 Practicum hours}	2
NURS 8030	DNP Project I ^{180 Practicum hours}	4
NURS 8040	DNP Project Course II ^{125 Practicum hours}	4
NURS 8050	DNP Project III ^{180 Practicum hours}	4
NURS 8000	DNP Project Variable Hours Course ^{Variable}	1-5
Total Hours		54-58

Total Credits: 53

Total Didactic Hours: 615

Total Practicum Hours: 530

DNP - MPH (Public Health)

Code	Title	Hours
BIOS 6601	Applied Biostatistics I (MPH Core cours may not be substituted) ^{3 Didactic credits}	3
PUBH 6600	Foundations in Public Health (MPH Core Course may not be substituted) ^{2 Didactic credits}	2
EHOH 6614	Occupational and Environmental Health (MPH Core Course may not be substituted) ^{3 Didactic credits}	3
CBHS 6610	Social and Behavioral Factors and Health (MPH Core Course may not be substituted) ^{3 Didactic credits}	3
EHOH 6622	Intro to Public Health in Disasters ^{3 Didactic credits}	3
EPID 6630	Epidemiology (MPH Core Course may not be substituted) ^{3 Didactic credits}	3
HSMP 6634	Management, Budgeting and Public Health Administration ^{3 Didactic credits}	3
NURS 6286	Foundations Informatics ^{3 Didactic credits}	3

NURS 6800	Leadership, Financial Management and Innovation ^{3 Didactic credits}	3
HSMP 6601	Introduction to HSMP (MPH Core Course may not be substituted) ^{3 Didactic credits}	3
EPID 6640	Investigation of Disease Outbreaks ^{2 Didactic credits}	2
NURS 6633	Advanced Public Health Nursing ^{3 Didactic credits}	3
NURS 6752	Advanced Public Health Nursing Practicum I ^{3 Clinical credits 135 Clinical hours}	1-6
NURS 6109	Evidence-Based Practice: Evaluating Evidence ^{3 Didactic credits}	3
CBHS 6612	Methods in Research and Evaluation ^{3 Didactic credits}	3
NURS 8020	DNP Project Preparation ^{2 Didactic credits}	2
NURS 8030	DNP Project I ^{4 Didactic credits}	4
NURS 8040	DNP Project Course II ^{4 Didactic credits}	4
NURS 8050	DNP Project III ^{4 Didactic credits}	4
Total Hours		55-60

Total Didactic Credits: 60

Total Clinical Credits: 5

Total MPH Elective credits 4

Total Clinical Hours: 225

BS-DNP Programs

MPH (Public Health) BS - DNP

Code	Title	Hours
BIOS 6601	Applied Biostatistics I ^{3 Didactic credits}	3
PUBH 6600	Foundations in Public Health ^{3 Didactic credits}	2
EHOH 6614	Occupational and Environmental Health ^{3 Didactic credits}	3
CBHS 6610	Social and Behavioral Factors and Health ^{3 Didactic credits}	3
EHOH 6622	Intro to Public Health in Disasters ^{3 Didactic credits}	3
EPID 6630	Epidemiology ^{3 Didactic credits}	3
HSMP 6634	Management, Budgeting and Public Health Administration ^{3 Didactic credits}	3
NURS 6286	Foundations Informatics ^{3 Didactic credits}	3
NURS 6800	Leadership, Financial Management and Innovation ^{3 Didactic credits}	3
HSMP 6601	Introduction to HSMP ^{3 Didactic credits}	3
EPID 6640	Investigation of Disease Outbreaks ^{2 Didactic credits}	2
NURS 6633	Advanced Public Health Nursing ^{3 Didactic credits}	3
NURS 6752	Advanced Public Health Nursing Practicum I ^{3 Clinical credits 135 Clinical hours}	1-6
NURS 6109	Evidence-Based Practice: Evaluating Evidence ^{3 Didactic credits}	3
CBHS 6612	Methods in Research and Evaluation ^{3 Didactic credits}	3
NURS 8020	DNP Project Preparation ^{2 Didactic credits}	2
NURS 8030	DNP Project I ^{4 Didactic credits}	4
NURS 8040	DNP Project Course II ^{4 Didactic credits}	4
NURS 8050	DNP Project III ^{4 Didactic credits}	4
Total Hours		55-60

Total Didactic Credits: 62
Total Clinical Credits: 5
Total MPH Elective credits 4
Total Clinical Hours: 225

Veteran and Military Health Care Leadership BS - DNP

Code	Title	Hours
NURS 6109	Evidence-Based Practice: Evaluating Evidence ⁴⁵ Didactic Hours	3
NURS 6023	Veteran and Military Health Care Systems ⁴⁵ Didactic Hours	3
NURS 6018	Home from the Battlefield: Psychological Health Care ⁴⁵ Didactic Hours	3
NURS 6009	Theory Foundation for Advanced Nursing ⁴⁵ Didactic Hours	3
NURS 6019	Wounds of War: Military & Veteran Disability Evals 45 Didactic Hours	3
NURS 6070	Policy and Politics of Health ⁴⁵ Didactic Hours	3
NURS 6286	Foundations Informatics ⁴⁵ Didactic Hours	3
NURS 6024	Caring for Veterans: Aging, Chronicity, & End of Life 45 Didactic Hours	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ⁴⁵ Didactic Hours	3
NURS 6017	On the Home Front: Supporting Vet & Military Families ⁴⁵ Didactic Hours	3
NURS 6015	Women & War ⁴⁵ Didactic Hours	3
NURS 6603	Health Systems and Management ⁴⁵ Didactic Hours	3
NURS 6800	Leadership, Financial Management and Innovation 45 Didactic Hours	3
NURS 6025	Veteran and Military Health Care Admin Internship 90 Practicum hours	2
NURS 6796	Executive Leadership and Organizational Systems 45 Didactic Hours	3
NURS 8020	DNP Project Preparation ⁴⁵ Practicum hours	2
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ⁴⁵ Didactic Hours	3
NURS 8030	DNP Project I ¹⁸⁰ Practicum hours	4
NURS 8040	DNP Project Course II ¹²⁵ Practicum hours	4
NURS 8050	DNP Project III ¹⁸⁰ Practicum hours	4
NURS 8000	DNP Project Variable Hours Course ^{Variable}	1-5
Total Hours		62-66

Total Didactic hours: 705
Total Practicum Hours: 620
Total credits: 61

Adult Gerontology Acute Care Nurse Practitioner BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3

NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 5981	AGACNP Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6600	Adult Gerontology Acute Care Nurse Practitioner I 3 Didactic credits	3
NURS 5982	AGACNP Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6620	Adult Gero Acute Care NP Diagnostics & Therapeutics ² Didactic credits	2
NURS 5983	AGACNP Practicum III ⁴ Clinical credits, 180 Clinical hours	4
NURS 6610	Adult Gerontology Acute Care Nurse Practitioner 2 3 Didactic credits	3
NURS 5984	AGACNP Practicum IV ⁴ Clinical credits, 180 Clinical hours	4
NURS 6849	PC IV: DM III Care for Complex Older Adult ³ Didactic credits	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credit, 45 Clinical hours	2
NURS 6800	Leadership, Financial Management and Innovation 3 Didactic credits	3
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		74

Total Didactic Credits: 51
Total Clinical Credits: 26
Total Clinical Hours: 1170

Adult-Gerontology Primary Care Nurse Practitioner BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 5971	AGPCNP Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6819	AGPCNP Primary Hlth Care I:Hlth Promotion & Prevention ³ Didactic credits	3
NURS 5972	AGPCNP Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6882	Foundational Clinical Skills Adv Pract NP ¹ Didactic credit	1
NURS 6829	Primary Care II: Diagnosis and Management I ³ Didactic credits	3
NURS 5973	AGPCNP Practicum III ³ Clinical credits, 135 Clinical hours	3

NURS 6839	Primary Care III: Diagnosis and Management II ³ Didactic credits	3
NURS 5974	AGPCNP Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 6849	PC IV: DM III Care for Complex Older Adult ³ Didactic credits	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation ¹ Clinical credits, 45 Clinical hours	2
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		74

Total Didactic Credits: 52**Total Clinical Credits: 24****Total Clinical Hours: 1080**

Clinical Nurse Specialist (CNS) Adult-Gerontology BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 5901	AG CNS Advanced Practicum I ³ Clinical credits 135 Clinical hours	1-3
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 5902	AG CNS Advanced Practicum II ³ Clinical credits 135 Clinical hours	1-3
NURS 6740	ADULT-GERONTOLOGY CNS WELLNESS TO ILLNESS ³ Didactic credits	3
NURS 5903	AG CNS Advanced Practicum III ³ Clinical credits 135 Clinical hours	1-3
NURS 6742	Adult-GerontologyCNS AdvancedPractice AcuteCareNursing ³ Didactic credits	3
NURS 5904	AG CNS Advanced Practicum IV ³ Clinical credits 135 Clinical hours	1-3
NURS 6746	Adult-Gero CNS Complex patient management ³ Didactic credits	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 6303	Epidemiology & Health ³ Didactic credits	3

NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credits, 45 Clinical hours	2
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 8000	DNP Project Variable Hours Course ^{Variable}	1-5
NURS 8040	DNP Project Course II ⁴ Clinical credits 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		63-75

Total Didactic Credits: 48**Total Clinical Credits: 24****Total Clinical Hours: 1080**

Family Nurse Practitioner BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6640	FNP Hlth Promotion, Prevention, Screening ³ Didactic credits	3
NURS 6434	FNP Care of the Pediatric Patient ³ Didactic credits	3
NURS 6739	Ob-Gyn Essentials for the FNP ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 5931	FNP Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6882	Foundational Clinical Skills Adv Pract NP ¹ Didactic credit	1
NURS 6549	FNP Adv. Clinical Skills ¹ Didactic credit	1
NURS 5932	FNP Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6528	FNP DM Physio & Psych Health I ³ Didactic credits	3
NURS 5933	FNP Practicum III ⁴ Clinical credits, 180 Clinical hours	4
NURS 6529	FNP DM Physio & Pysch Health II ³ Didactic credits	3
NURS 5934	FNP Practicum IV ⁴ Clinical credits, 180 Clinical hours	4
NURS 6950	Synthesis/Integration/Transition into FNP Practice ² Didactic credits	2
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credits, 45 Clinical hours	2
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		82

Total Didactic Credits: 58
Total Clinical Credits: 26
Total Clinical Hours: 1170

i-Lead Nursing Leadership and Health Care Systems BS - DNP

Code	Title	Hours
NURS 6009	Theory Foundation for Advanced Nursing ^{45 Didactic hours}	3
NURS 6286	Foundations Informatics ^{45 Didactic hours}	3
NURS 6070	Policy and Politics of Health ^{45 Didactic hours}	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ^{45 Didactic hours}	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ^{45 Didactic hours}	3
NURS 6790	Systems and Leadership Theory ^{45 Didactic hours}	3
NURS 6973	State of Science: Healthcare Systems ^{30 Didactic hours}	3
NURS 6794	Decision Support and Data Management ^{45 Didactic hours}	3
NURS 6795	i-LEAD Administrative Internship ^{135 Clinical hours}	3
NURS 6800	Leadership, Financial Management and Innovation ^{45 Didactic hours}	3
NURS 6603	Health Systems and Management ^{45 Didactic hours}	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ^{45 Didactic hours}	3
NURS 6796	Executive Leadership and Organizational Systems ^{45 Didactic hours}	3
NURS 8000	DNP Project Variable Hours Course ^{Variable}	1-5
NURS 8020	DNP Project Preparation ^{45 Clinical hours}	2
NURS 7631	Advanced Quantitative Research Design, Methods & Analysis I ^{45 Didactic hours}	3
NURS 8040	DNP Project Course II ^{135 Clinical hours}	4
NURS 8050	DNP Project III ^{180 Clinical hours}	4
Total Hours		53-57

Total Didactic Hours: 625
Total Clinical Hours: 675
Total Credits: 61

Nurse-Midwifery - BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ^{3 Didactic credits}	3
NURS 6377	Foundations of Midwifery Care ^{2 Didactic credits}	2
NURS 6009	Theory Foundation for Advanced Nursing ^{3 Didactic credits}	3
NURS 6222	Adv Pharm & Therapeutics ^{3 Didactic credits}	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ^{3 Didactic credits}	3
NURS 6070	Policy and Politics of Health ^{3 Didactic credits}	3
NURS 6761	Advanced Assessment ^{3 Didactic credits}	3
NURS 6859	Advanced Professional Role ^{3 Didactic credits}	2
NURS 6286	Foundations Informatics ^{3 Didactic credits}	3
NURS 6376	Reproductive Physiology ^{3 Didactic credits}	3
NURS 6344	NMW Gynecologic Care ^{3 Didactic credits}	3
NURS 5941	NMW Advanced Practicum I ^{4 Clinical credits, 180 Clinical hours}	4

NURS 6378	Care of the Childbearing Family I ^{3 Didactic credits}	3
NURS 6850	NMW Primary Care of Women ^{3 Didactic credits}	2
NURS 6374	NMW/WHNP Adv Clinical Skills - Outpatient ^{3 Didactic credits}	1
NURS 5942	NMW Advanced Practicum II ^{4 Clinical credits, 180 Clinical hours}	4
NURS 6379	Care of the Childbearing Family II ^{3 Didactic credits}	4
NURS 6375	NMW Advanced Clinical Skills - Inpatient ^{3 Didactic credits}	1
NURS 5943	NMW Advanced Practicum III: Integration ^{8 Clinical credits, 360 Clinical hours}	8
NURS 6800	Leadership, Financial Management and Innovation ^{3 Didactic credits}	3
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ^{3 Didactic credits}	3
NURS 6303	Epidemiology & Health ^{3 Didactic credits}	3
NURS 8020	DNP Project Preparation ^{2 Clinical credits, 45 Clinical hours}	2
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ^{3 Didactic credits}	3
NURS 8030	DNP Project I ^{4 Clinical credits, 180 Clinical hours}	4
NURS 8000	DNP Project Variable Hours Course ^{3 Didactic credits}	1-5
NURS 8040	DNP Project Course II ^{4 Clinical credits, 135 Clinical hours}	4
NURS 8050	DNP Project III ^{4 Clinical credits, 180 Clinical hours}	4

Total Hours 85-89

Total Didactic Credits: 56
Total Clinical Credits: 30
Total Clinical Hours: 1260

Women's Health Nurse Practitioner BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ^{3 Didactic credits}	3
NURS 6286	Foundations Informatics ^{3 Didactic credits}	3
NURS 6009	Theory Foundation for Advanced Nursing ^{3 Didactic credits}	3
NURS 6222	Adv Pharm & Therapeutics ^{3 Didactic credits}	3
NURS 6070	Policy and Politics of Health ^{3 Didactic credits}	3
NURS 6761	Advanced Assessment ^{3 Didactic credits}	3
NURS 6859	Advanced Professional Role ^{2 Didactic credits}	2
NURS 6109	Evidence-Based Practice: Evaluating Evidence ^{3 Didactic credits}	3
NURS 6376	Reproductive Physiology ^{3 Didactic credits}	3
NURS 6344	NMW Gynecologic Care ^{3 Didactic credits}	3
NURS 5961	WHNP Advanced Practicum I ^{4 Clinical credits, 135 Clinical hours}	4
NURS 6374	NMW/WHNP Adv Clinical Skills - Outpatient ^{1 Clinical credit}	1
NURS 6378	Care of the Childbearing Family I ^{3 Didactic credits}	3
NURS 6850	NMW Primary Care of Women ^{2 Didactic credits}	2
NURS 5962	WHNP Advanced Practicum II ^{3 Clinical credits, 135 Clinical hours}	4
NURS 5963	WHNP Advanced Practicum III ^{4 Clinical credits, 180 Clinical hours}	6
NURS 5964	WHNP Advanced Practicum IV ^{4 Clinical credits, 180 Clinical hours}	4

NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credits, 45 Clinical hours	2
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		79

Total Didactic Credits: 50**Total Clinical Credits: 27****Total Clinical Hours: 1170****Pediatric Nurse Practitioner Acute Care BS - DNP**

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 5921	AC-PNP Practicum I ² Clinical credits, 90 Clinical hours	2
NURS 6490	Pediatric Primary Care Essentials ³ Didactic credits	3
NURS 6450	Advanced Pediatric Physical Assessment ¹ Didactic credit	1
NURS 5922	AC PNP Advanced Practicum II ² Clinical credits, 90 Clinical hours	2
NURS 6456	Advance Pediatric Clinical Skills ¹ Didactic credit	1
NURS 5923	AC PNP Advanced Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 6500	Acute Care Pediatric Nurse Practitioner I ³ Didactic credits	3
NURS 5924	AC-PNP Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 6510	Acute Care Pediatric Nurse Practitioner 2 ³ Didactic credits	3
NURS 5925	AC PNP Advanced Practicum V ³ Clinical credits, 135 Clinical hours	3
NURS 6520	Acute Care Pediatric Nurse Practitioner 3 ³ Didactic credits	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credit, 45 Clinical hours	2
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4

NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		76

Total Didactic Credits: 53**Total Clinical Credits: 25****Total Clinical Hours: 1125****Pediatric Nurse Practitioner Primary Care BS - DNP**

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 5911	PNP Advanced Practicum I ³ Clinical credits, 135 Clinical hours	3
NURS 6450	Advanced Pediatric Physical Assessment ¹ Didactic credit	1
NURS 6478	Primary Care of Children: Well Child Care ⁴ Didactic credits	4
NURS 5912	PNP Advanced Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6456	Advance Pediatric Clinical Skills ¹ Didactic credit	1
NURS 5913	PNP Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 6488	Pediatric Minor and Acute Illness ³ Didactic credits	3
NURS 5914	PNP Advanced Practicum IV ³ Clinical credits, 135 Clinical hours	3
NURS 6496	Pediatric Chronic Illness and Disability ³ Didactic credits	3
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credit, 45 Clinical hours	2
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		73

Total Didactic Credits: 51
Total Clinical Credits: 24
Total Clinical Hours: 1080

Psychiatric Mental Health Nurse Practitioner BS - DNP

Code	Title	Hours
NURS 6243	Adv Pathophysiology ³ Didactic credits	3
NURS 6009	Theory Foundation for Advanced Nursing ³ Didactic credits	3
NURS 6664	Integrated Behavioral Healthcare & Common Psychiatri ³ Didactic credits	3
NURS 6222	Adv Pharm & Therapeutics ³ Didactic credits	3
NURS 6070	Policy and Politics of Health ³ Didactic credits	3
NURS 6665	PsyTherapy, BehavioralChange & HP Lifespan ³ Didactic credits	3
NURS 6761	Advanced Assessment ³ Didactic credits	3
NURS 6859	Advanced Professional Role ² Didactic credits	2
NURS 6109	Evidence-Based Practice: Evaluating Evidence ³ Didactic credits	3
NURS 6659	Adv Assess,Neurobiology&Psychopharm AcrossLifespan ³ Didactic credits	3
NURS 5991	PMHNP Advanced Practicum I ² Clinical credits, 90 Clinical hours	2
NURS 6286	Foundations Informatics ³ Didactic credits	3
NURS 6661	Diagnosis and Management/Adults PMHNP ³ Didactic credits	3
NURS 5992	PMHNP Advanced Practicum II ³ Clinical credits, 135 Clinical hours	3
NURS 6662	Diagnosis and Management/Children and Older Adult PMHNP ³ Didactic credits	3
NURS 5993	PMHNP Advanced Practicum III ³ Clinical credits, 135 Clinical hours	3
NURS 5994	PMHNP Advanced Practicum IV ⁶ Clinical credits, 270 Clinical hours	6
NURS 6107	Research & Quality Improve Methods:Principles of Evidence ³ Didactic credits	3
NURS 6800	Leadership, Financial Management and Innovation ³ Didactic credits	3
NURS 8020	DNP Project Preparation ² Clinical credit, 45 Clinical hours	2
NURS 6303	Epidemiology & Health ³ Didactic credits	3
NURS 8030	DNP Project I ⁴ Clinical credits, 180 Clinical hours	4
NURS 6108	Inferent Statistics & Quality Improvement Applying Evidence ³ Didactic credits	3
NURS 8040	DNP Project Course II ⁴ Clinical credits, 135 Clinical hours	4
NURS 8050	DNP Project III ⁴ Clinical credits, 180 Clinical hours	4
Total Hours		78

Total Didactic Credits: 54
Total Clinical Credits: 26
Total Clinical Hours: 1170

DNP Program Outcomes

Approved January 2023

- Integrate nursing knowledge and ways of knowing in the development and evaluation of health care delivery strategies.

- Evaluate person centered health care delivery strategies that meet evolving health care delivery system needs.
- Collaborate across settings to advocate for improved and equitable population health outcomes.
- Disseminate nursing scholarship to improve health and transform health care.
- Lead the translation of quality and safety evidence to promote system effectiveness and individual performance.
- Build interprofessional teams that enhance healthcare experiences and outcomes for patients, families, communities, and partnerships.
- Lead within complex systems to effectively and proactively coordinate resources to provide safe, quality, and equitable care for diverse populations.
- Lead teams to advocate for end user perspectives in the design, implementation, and evaluation of healthcare technologies (e.g., information, communication) and processes.
- Cultivate the future identity and ideals of the nursing profession.
- Create systems and policies that support organizational resilience, personal, and professional wellbecoming.

Nursing (PhD)

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Most of your coursework is taught online. Once per semester, students are also required to come to our Denver metro area campus for a week-long residency in the fall, spring and summer. This is the heart of our doctorate program because it gives you a chance to get to know your colleagues and develop your research skills.

The Ph.D. program includes 42 credits of coursework and 18 credits of dissertation. Students must also select a focus:

- Biobehavioral Sciences
- Caring Science
- Health Care Systems Research

The MS-PhD program prepares baccalaureate-prepared nurses to enter the doctor of philosophy program, which is designed to promote knowledge development for reflective, theory-based and research-guided nursing practice, after completion of a master's program focusing on a specialty nursing area.

Nursing PhD Admission Requirements

For updated admissions requirements for the PhD Program in Nursing, please visit: <https://nursing.cuanschutz.edu/admissions/admission-requirements/phd-admissions> (<https://nursing.cuanschutz.edu/admissions/admission-requirements/phd-admissions/>).

Applications are submitted through Nursing's Centralized Application Service (NursingCAS (<https://nursingcas2021.cas.myliaison.com/applicant-ux/#/login>)).

Doctor of Philosophy (PhD) in Nursing

Our blended program provides each student with three different tracks. You may choose the research track that matches your professional and research goals. As a newly admitted student, you will be paired with a faculty advisor from your chosen area who will help you acclimate to the PhD environment, accomplish each requirement of the degree, and develop the research question that will be the foundation of your dissertation. Once per semester (Fall, Spring, and Summer), you will come to the Anschutz Medical Campus in the Denver metro area for a week-long residency. This will provide you with rich opportunities to

get to know your colleagues and faculty and benefit from the collective knowledge you all bring to in-person conversations.

Our tracks include:

BIOBEHAVIORAL SCIENCES

When studying biobehavioral sciences, you seek to understand the connections between patients' physical health and things like lifestyle, behavior, environment, and genetics. Biobehavioral scientists seek to improve patient care by understanding these connections and effectively educating patients on the ways their actions and decisions can impact their health.

CARING SCIENCE

In this program, you'll study the relationship between nurses caring for themselves and the quality of care they can provide to their patients. Caring Science focuses on creating real, heart-to-heart connections between caregivers and patients. Building on the work of CU Nursing Dean Emerita Jean Watson, PhD, AHN-C, FAAN, who held the nation's first Caring Science Endowed Chair, students investigate the relationships between caring science theory, knowledge of the humanities, and health care outcomes.

HEALTH CARE SYSTEMS RESEARCH

This track provides you with the foundation you need to research health care systems. For example, our students have researched health outcomes related to hospital staffing best practices and how to optimize management skills of head nurses. This track is particularly unique to CU Anschutz. We are the only university in the West providing this kind of focus, and one of only four programs like this in the entire nation.

For further information about the PhD Program in Nursing, please visit: <https://nursing.cuanschutz.edu/academics/graduate-programs/-in-category/widget/render/category/programs/PhD/1> (<https://nursing.cuanschutz.edu/academics/graduate-programs/-in-category/widget/render/category/programs/PhD/1/>).

Curriculum

The PhD program includes 42 credits of coursework and 18 credits of dissertation. All students must take the core courses in addition to selecting a focus in health care systems or biobehavioral science.

PhD Core

Year 1

Year 1		Hours
Fall		
NURS 7101	Metatheory in Nursing I	3
NURS 7621	Advanced Qualitative Research Design, Methods & Analysis I	3
NURS 7001	Diversity of Scientific Perspectives	1
Hours		7
Spring		
NURS 7102	Metatheory in Nursing II	3
Hours		3
Total Hours		10

Year 2

Year 2		Hours
Fall		
NURS 7631	Advanced Quantitative Research Design, Methods & Analysis I	3
Hours		3
Spring		
NURS 7622	Advanced Qualitative Research Design, Methods & Analysis II	3
NURS 7632	Advanced quantitative Reserach Design, Methods & Analysis II	3
Hours		6
Total Hours		9

Year 3

Year 3		Hours
Fall		
NURS 7350	Research Practicum	3
Hours		3
Spring		
NURS 8990	Dissertation (Take 18 total credits after coursework completed.)	1-10
Hours		1-10
Summer		
NURS 7440	Measurement for Nursing Science	3
NURS 7856	Independent Study	1-4
Hours		4-7
Total Hours		8-20

Health Care Systems (HCS)

Year 2

Year 2		Hours
Fall		
NURS 7720	Health Care Systems I: Evaluating Health Care Delivery System	3
Hours		3
Spring		
NURS 7730	Health Care Systems II: Changing Health Care Delivery Systems	3
Hours		3
Summer		
NURS 7803	Health Care Systems: State of the Science	3
Hours		3
Total Hours		9

Year 3

Year 3		Hours
Fall		
Elective		3
NURS 7200	Writing Discipline for Scientific Publishing	3
Hours		6

Summer

Elective	3
Hours	3
Total Hours	9

Biobehavioral Sciences (BBS)

Year 2

Year 2		Hours
Fall		
NURS 7740	BBS I: Intrapersonal Determinants & Phenomena	3
Hours		3
Spring		
NURS 7750	BBS II: Interpersonal Phenomena & Determinants	3
Hours		3
Summer		
Elective		3
Hours		3
Total Hours		9

Year 3

Year 3		Hours
Fall		
NURS 7760	Interventions & Outcomes in Biobehavioral Research	3
Hours		3
Summer		
Elective		3
Hours		3
Total Hours		6

Caring Science (CS)

Year 2

Year 2		Hours
Fall		
NURS 7511	Philosophical Underpinnings Caring Science	3
Hours		3
Spring		
NURS 7506	Diverse Theories of Care: Paradigms of Human Caring	3
Hours		3
Summer		
Elective		3
Hours		3
Total Hours		9

Year 3

Year 3

Fall		Hours
Elective		3
Hours		3
Summer		
NURS 7508	CS as Transdisciplinary Domain for Health Science Educ	3
Hours		3
Total Hours		6

Expected PhD Program Outcomes

1. Create new knowledge through the research process.
2. Demonstrates commitment to the profession through publications and conference presentations or engagement in professional organizations.
3. Examines multiple theories and methodologies for application to research problems.
4. Engages with fellow scientists and students in scholarly discourse.
5. Demonstrates ethical responsibility and action as a scientist.
6. Considers research findings relevant to public health and healthcare policy.

Colorado School of Public Health

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Aurora, CO 80045

Website: <https://coloradosph.cuanschutz.edu/> (<https://coloradosph.cuanschutz.edu/>)

Overview

The Colorado School of Public Health is a collaborative school of public health with the University of Colorado, Colorado State University, and the University of Northern Colorado. It is the first school of public health in a nine-state region of the Rocky Mountain West. Emerging infectious diseases, chronic diseases, emergencies, lifestyles, the environment, disparities and various other factors impact the health of our communities. The Colorado School of Public Health aims to meet the challenges that our communities face by preparing a public health work force with the skills, research, knowledge, and values necessary to advance the health of our communities. The combined faculty, located at the three partner institutions, is at the forefront of various health issues and research, proactively addressing and improving the lives of our children, adults and aging populations. As part of the commitment to meeting the training and research needs of the public health workforce, the Colorado School of Public Health offers educational programs that include masters, doctoral, residency, and certificate programs. Descriptions and materials are available through the Colorado School of Public Health website.

An identity of collaboration

To stand at the forefront of a changing world, you will need the passion and identity of a collaborator and innovator. At the Colorado School of Public Health we hold both. As an accredited, collaborative school of public health, we stand ready to create healthier futures, build stronger partnerships and steward shared resources for the betterment and health of communities in Colorado and around the world.

As a collaboration of the University of Colorado (<https://www.ucdenver.edu/anschutz/Pages/landing.aspx>), Colorado State University (<http://www.colostate.edu/>) and the University of Northern

Colorado (<http://www.unco.edu/>), we are redefining the identity of public health to be an identity of collaboration.

Across Colorado you'll find our research teams in schools working hand in hand with teachers to improve the health of local youth; our students learning firsthand about disaster response and emergency preparedness, worker safety, and more; and our staff at local nonprofits working to advance our mission of health in the classroom and community.

Our mission

To promote the physical, mental, social, and environmental health of people and communities in the Rocky Mountain Region, across our nation, and globally. The mission will be accomplished through collaborations in education, population-based research, and community service that bring together institutions, agencies, and diverse populations.

Our vision

The Colorado School of Public Health will become one of the nation's premier institutions for public health education and research, with top recognition for its work in selected areas and an outstanding reputation for delivering education, training, and service programs that are based in science, proven in practice, and adapted through creativity to meet pressing population health needs.

Review our strategic plan and process (<https://coloradosph.cuanschutz.edu/about-us/strategic-planning/>).

Our commitment to diversity and health equity

Our Inclusion, Diversity, and Health Equity mission is to build a diverse and representative academic community which recognizes the importance of social and economic justice in relation to health. ColoradoSPH is committed to working to build an inclusive, culturally competent institution which includes the environment, policies and procedures, faculty, staff, leadership, and student body.

Read our Plan for Dismantling Structural Racism & Advancing Inclusive Excellence (<https://coloradosph.cuanschutz.edu/news-and-events/newsroom/deans-notes/public-health-main-site-news/structural-racism-and-inclusive-excellence-time-to-talk-and-plan/>).

Programs

- Public Health (MPH) (p. 125)
- Public Health Certificates (p. 136)
- Public Health Dual Degree Programs (MPH) (p. 141)
- Public Health: Doctor of Philosophy (PhD) Programs (p. 149)
 - Biostatistics (PhD) (p. 150)
 - Climate and Human Health (PhD) (p. 151)
 - Epidemiology (PhD) (p. 152)
 - Health Services Research (PhD) (p. 153)
- Public Health: Doctor of Public Health (DrPH) (p. 154)
- Public Health: Master of Science (MS) (p. 156)

- Biostatistics (MS) (p. 157)
- Epidemiology (MS) (p. 158)

Public Health (MPH)

Overview

You can get your Master of Public Health (MPH) degree at any of our three collaborating institutions. Each campus offers areas of study that leverage the unique strengths of that university. All three of our campuses are home to world-class experts, opportunities to get hands-on with what matters to you, and the chance to get out there and take advantage of everything Colorado has to offer. Inside and outside of the classroom, you can choose your adventure at the Colorado School of Public Health.

The 42-45 credit hour MPH program is designed to be completed in two years and must be finished within five years. As part of your degree, you'll complete a practicum and capstone project, so you'll graduate with skills you learned by doing, not just sitting in a classroom.

CU Anschutz Medical Campus Curriculum

Applied Biostatistics

Applied Biostatistics

In this program, you'll focus more on the applied nature of biostatistics and less on the theory behind it. It's perfect for public health workers and individuals who want to strengthen their analytic skills and is particularly useful if you have a previous research degree or experience. As a student in this program, you'll gain a strong understanding of programming and data management and learn how to navigate serving as a consultant on projects. And if your interests are bigger than what just one country can contain, we offer the option to add an emphasis in global health.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Applied Biostatistics Courses (12 credits)		
BIOS 6602	Applied Biostatistics II	3
BIOS 6623	Advanced Data Analysis	4
BIOS 6680	Data Management Using SAS	3
Choose a minimum of 3 credits from the following courses:		
BIOS 6310	Practical Clinical Research Informatics	3
BIOS 6621	Statistical Consulting	2
BIOS 6628	Latent Variable Methods	3
BIOS 6629	Applied Survival and Longitudinal Data Analysis	3
BIOS 6640	R for Data Science	3
BIOS 6641	Causal Inference	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6644	Practical Data Wrangling	2
BIOS 6648	Design and Conduct of Clinical Research	3
BIOS 6685	Introduction to Public Health Informatics	3
Electives (9 credits)		9

Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
BIOS 6990	MPH Capstone Preparation - BIOS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		43

Applied Biostatistics + Global Health

The MPH in Applied Biostatistics + Global Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this program, you'll gain the skills you need to apply public health methods to address global challenges. As part of the MPH program, students are required to complete the core program curriculum including practicum and capstone projects. Capstone projects should incorporate applied biostatistics and a global component.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Applied Biostatistics Courses (12 credits)		
BIOS 6602	Applied Biostatistics II	3
BIOS 6623	Advanced Data Analysis	4
BIOS 6680	Data Management Using SAS	3
Choose a minimum of 3 credits from the following courses:		
BIOS 6310	Practical Clinical Research Informatics	3
BIOS 6621	Statistical Consulting	2
BIOS 6628	Latent Variable Methods	3
BIOS 6629	Applied Survival and Longitudinal Data Analysis	3
BIOS 6640	R for Data Science	3
BIOS 6641	Causal Inference	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6644	Practical Data Wrangling	2
BIOS 6648	Design and Conduct of Clinical Research	3
BIOS 6685	Introduction to Public Health Informatics	3
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
Biostatistics Global Public Health Electives (3 credits) See Faculty Advisor		
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
BIOS 6990	MPH Capstone Preparation - BIOS	1

PUBH 6991	MPH Capstone Integration	1
Total Hours		46

Community & Behavioral Health

Community & Behavioral Health

As a student in this program, you'll learn how you can influence individuals to make positive health decisions, while strengthening communities. In the Department of Community & Behavioral Health, we study the why and the how of population health, engaging with communities in a way that really makes a difference. As part of our department, you'll have access to faculty with a wide range of expertise—from adverse childhood experiences, to nutrition, to underserved populations.

This 42- to 45-credit hour program offers both in-classroom and applied learning experiences. Our curriculum prepares you to engage authentically and work collaboratively with communities. You'll gain a strong understanding of the social, cultural, political, economic, and environmental factors that influence health. And if your interests are bigger than one country can contain, we offer the option to add an emphasis in global public health, where you'll learn how to apply community health and behavioral health principles in the global arena.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6611	Foundations of Health Behavior	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Community & Behavioral Health Courses (12 credits)		
CBHS 6612	Methods in Research and Evaluation	3
CBHS 6613	Program Planning and Implementation	3
CBHS 6624	Community Health Assessment	3
Choose 1 of the following 2 options:		
CBHS 6622	Qualitative Research Methods	3
CBHS 6637	Applied Quantitative Analysis for Comm Hlth Science	3
Electives (9 credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
CBHS 6990	MPH Capstone Preparation - CBHS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Community & Behavioral Health + Global Health

The MPH in Community & Behavioral Health + Global Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this program, you'll gain the skills you need to apply public health methods to address global challenges.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
CBHS 6611	Foundations of Health Behavior	3
EHOH 6614	Occupational and Environmental Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Community & Behavioral Health Courses (12 credits)		
CBHS 6612	Methods in Research and Evaluation	3
CBHS 6613	Program Planning and Implementation	3
CBHS 6624	Community Health Assessment	3
Choose 1 of the following 2 courses:		
CBHS 6622	Qualitative Research Methods	3
CBHS 6637	Applied Quantitative Analysis for Comm Hlth Science	3
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
Community & Behavioral Health Global Electives from the following (3 credits):		
CBHS 6622	Qualitative Research Methods	3
CBHS 6628	Tech-based health Promotion	3
CBHS 6629	Health and Human Rights	3
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
CBHS 6990	MPH Capstone Preparation - CBHS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		45

Environmental & Occupational Health

Environmental & Occupational Health

As a student in this program, you'll learn how to characterize the human health effects of environmental and occupational hazards and the populations that are most vulnerable to those exposures. In the Department of Environmental & Occupational Health, we think about the ways that public health professionals can intervene to improve the environment where people live, work, and play. As part of our department, you'll have access to faculty with a wide range of expertise—from climate change and disaster preparedness to oil and gas activity to Total Worker Health®.

This 42- to 45-credit hour program offers both in-classroom and applied learning experiences. Our curriculum prepares you to address emerging issues by thinking across boundaries to come up with complex solutions. You'll also learn how to involve communities in addressing unequal distribution of hazards and advocating for justice, cleanliness, and safety. And if your interests are bigger than one country can contain, we offer the option to add an emphasis in global public health, where you'll learn how

to apply environmental and occupational health principles in the global arena.

Curriculum

Code	Title	Hours
Required Public Health Core Courses		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Environmental & Occupational Health Courses (15 credits)		
EHOH 6616	Toxic Effects of Environmental and Workplace Agents	3
EHOH 6618	Environmental Health Policy and Practice	3
EHOH 6619	Environmental Exposures and Health Effects	3
Choose 2 of the following 6 options:		
EHOH 6617	Environmental & Occupational Epidemiology	3
EHOH 6620	Risk Analysis & Decision Making	3
EHOH 6628	Health Protection/Promotion in the Workplace.	3
EHOH 6635	Climate Change and Health	3
EHOH 6636	Occupational Safety and Ergonomics with Journal Clubs	3
EHOH 6638	Communication Skills for Public Health Impact	3
Electives (6 credits)		
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EHOH 6990	MPH Capstone Preparation - EHOH	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Environmental & Occupational Health + Global Health

The MPH in Environmental & Occupational Health + Global Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this program, you'll gain the skills you need to apply public health methods to address global challenges.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Environmental & Occupational Health Courses (15 credits)		
EHOH 6616	Toxic Effects of Environmental and Workplace Agents	3
EHOH 6618	Environmental Health Policy and Practice	3
EHOH 6619	Environmental Exposures and Health Effects	3

Choose 2 of the following 6 courses:

EHOH 6617	Environmental & Occupational Epidemiology	3
EHOH 6620	Risk Analysis & Decision Making	3
EHOH 6628	Health Protection/Promotion in the Workplace.	3
EHOH 6635	Climate Change and Health	3
EHOH 6636	Occupational Safety and Ergonomics with Journal Clubs	3
EHOH 6638	Communication Skills for Public Health Impact	3
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EHOH 6990	MPH Capstone Preparation - EHOH	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		45

Epidemiology

In this program, you'll study diseases in populations and learn how to apply evidence-based information to promote health and prevent illness. In epidemiology, we get to see the applications of our work every day, saving lives in the here and now and in the future. And as a student in our department, you'll have access to faculty with a wide range of expertise—from food safety, to diabetes, to gene-environment interactions, we do it all.

This 42- to 45-credit hour program offers both in-classroom and applied learning experiences. In addition to the public health core areas, you'll take classes in biostatistics, research methods, and database design. You'll also choose from a variety of elective courses so that you can hone in on what matters most to you. And if your interests are bigger than one country can contain, we offer the option to add an emphasis in global public health, where you'll learn how to apply epidemiological principles in the global arena.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Epidemiology Courses (12 credits)		
BIOS 6602	Applied Biostatistics II	3
BIOS 6680	Data Management Using SAS (OR)	3
EPID 6605	Intro to R for Health Science (AND)	
EPID 6607	Data Management with R	
EPID 6626	Research Methods in Epidemiology	3
EPID 6631	Analytical Epidemiology	3

Electives (9 credits)	9
Practicum (2 credits)	
PUBH 6606 MPH Practicum	2
Capstone (2 credits)	
EPID 6990 MPH Capstone Preparation - EPID	1
PUBH 6991 MPH Capstone Integration	1
Total Hours	42

Epidemiology + Global Public Health

The MPH in Epidemiology + Global Public Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this program, you'll gain the skills you need to apply public health methods to address global challenges.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Epidemiology Courses (12 credits)		
BIOS 6602	Applied Biostatistics II	3
BIOS 6680	Data Management Using SAS (OR)	3
EPID 6605 & EPID 6607	Intro to R for Health Science and Data Management with R	
EPID 6626	Research Methods in Epidemiology	3
EPID 6631	Analytical Epidemiology	3
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
Epidemiology Global Public Health Electives (3 credits from the following courses):		
EPID 6624	Public Health Surveillance	2
EPID 6628	Global Health and Disasters	2
EPID 6635	Infectious Disease Epidemiology	2
EPID 6636	Chronic Disease Epidemiology	3
EPID 6640	Investigation of Disease Outbreaks	2
EPID 6641	Epidemiology of Foodborne and Diarrheal Diseases	2
EPID 6643	Epidemiology and Prevention of TB/HIV/STDs	2
EPID 6644	Maternal Child Health Epidemiology	3
EPID 6647	CU Denver in India: Global Health in the Heart of India	3
EPID 6649	Vaccine Science, Application and Policy	2
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID	1

PUBH 6991	MPH Capstone Integration	1
Total Hours		45

Health Systems, Management & Policy

Health Systems, Management & Policy

As a student in this program, you'll learn about the entire breadth of the healthcare arena and what it looks like on the scale of national policies, regional hospitals, and individual patient outcomes. We're not just talking about health care, we're talking about health systems. In the Department of Health Systems, Management & Policy, you'll have access to faculty with a wide range of expertise—from disaster preparedness to rural populations to the economic impact of health policies, we do it all.

This 42- to 45-credit hour program offers both in-classroom and applied learning experiences. Our curriculum prepares you to make sense of data, apply them to healthcare solutions decisions, and advocate for evidence-based policies. You'll gain a strong understanding of healthcare delivery and financing, as well as policy implementation. You'll also learn how to be a leader and manage resources in a rapidly changing healthcare landscape. And if your interests are bigger than the U.S. healthcare system, we offer the option to add an emphasis in global public health, where you'll learn how to apply health systems and policy principles in the global arena.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Health Systems, Management & Policy Courses (15 credits)		
HSMP 6602	Health Equity	3
HSMP 6604	Health Care Economics	3
HSMP 6605	Health Policy	3
HSMP 6610	Health Care Financial Management	3
HSMP 6616	Intro. to Health Policy Analysis and Communication	1
Choose one of the following courses:		
HSMP 6606	Public Health Administration	2
HSMP 6633	Management of Non-Profit Organizations in Public Health	2
Electives (6 credits)		6
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
HSMP 6990	MPH Capstone Preparation - HSMP	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Health Systems, Management & Policy + Global Health

The MPH in Health Systems, Management & Policy + Global Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this

program, you'll gain the skills you need to apply public health methods to address global challenges.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Health Systems, Management & Policy Courses (14 credits)		
HSMP 6602	Health Equity	3
HSMP 6604	Health Care Economics	3
HSMP 6605	Health Policy	3
HSMP 6610	Health Care Financial Management	3
HSMP 6616	Intro. to Health Policy Analysis and Communication	1
Choose 1 of the following 2 courses:		
HSMP 6606	Public Health Administration	2
HSMP 6633	Management of Non-Profit Organizations in Public Health	2
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
HSMP 6990	MPH Capstone Preparation - HSMP	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		45

Maternal & Child Health

Maternal & Child Health

As a student in this program, you'll learn how to define public health needs related to maternal and child health, design strategies to address those needs, and evaluate the effectiveness of different policies and programs. Our faculty and students are passionate about working with diverse populations to improve the health of mothers, children, and families. You'll have access to faculty with a wide range of expertise—from reproductive health, to child development, to intimate partner violence.

This 42- to 45-credit hour program offers both in-classroom and applied learning experiences. Our curriculum provides training in maternal and child health policy, program management and evaluation, and the application of research methods to maternal and child health issues. And if your interests are bigger than one country can contain, we offer the option to add an emphasis in global public health, where you'll learn how to apply public health principles to address maternal and child health in the global arena.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Maternal & Child Health Courses (12 credits)		
CBHS 6621	Introduction to Maternal and Child Health	3
HSMP 6614	MCH Program Management & Policy Analysis	3
EPID 6644	Maternal Child Health Epidemiology	3
CBHS 6612	Methods in Research and Evaluation	3
Electives (9 total credits)		
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
CBHS 6990	MPH Capstone Preparation - CBHS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Maternal & Child Health + Global Health

The MPH in Maternal & Child Health + Global Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this program, you'll gain the skills you need to apply public health methods to address global challenges.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Maternal & Child Health Courses (12 credits)		
CBHS 6621	Introduction to Maternal and Child Health	3
HSMP 6614	MCH Program Management & Policy Analysis	3
EPID 6644	Maternal Child Health Epidemiology	3
CBHS 6612	Methods in Research and Evaluation	3
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
MCH Global Public Health Electives (3 credits from the following courses):		
CBHS 6614	Childhood Obesity	1
CBHS 6616	Intimate Partner Violence: Epidemiology	1
CBHS 6617	Nutrition and Public Health	1

CBHS 6618	CURRENT RESEARCH AM INDIAN ALASKA NAT CHILD HEALTH DEV	1
CBHS 6627	Maternal Nutrition	1
CBHS 6631	Introduction to Sexual and Reproductive Health	1
CBHS 6634	Adolescent Health	1
CBHS 6635	Child Nutrition	1
CBHS 6636	Early Childhood Hlth, ACEs, Toxic Stress, Hlth Equity	1
CBHS 6641	Developmental Screening, Strategies and Referral	1
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
CBHS 6990	MPH Capstone Preparation - CBHS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		45

Population Mental Health & Wellbeing

This program is among the first and only accredited Master of Public Health programs in the U.S. focused on population mental health. You can complete this program entirely online or at the University of Colorado Anschutz Medical Campus. In this program, you'll gain a strong foundation in the principles and theories of public health practice, with the specialized knowledge needed to practice public health in the areas of mental health, substance use, and wellbeing. You'll join a community of people who are dedicated to lessening the burden that mental health and substance use disorders have on the health of individuals, families, and communities. In addition, you'll have access to faculty with a wide range of expertise—from autism spectrum disorders, to cannabis use, to suicide.

This 42-credit hour program offers both in-classroom and applied learning experiences. The program is ideal for public health professionals seeking to expand their expertise to mental health and well-being promotion, service providers who seek a population-level perspective, or those looking to launch a career in this exciting new field.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Population Mental Health & Wellbeing Courses (12 credits)		
CBHS 6612	Methods in Research and Evaluation	3
PMHW 6601	Mental Health	3
PMHW 6620	Mental Health Systems and Policy	3
PMHW 6621	Mental Health and Wellbeing Promotion	3
Electives (9 credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
CBHS 6990	MPH Capstone Preparation - CBHS	1

PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Colorado State University Curriculum Animals, People & the Environment

Throughout the world, human societies are inextricably linked with animals wild and domestic – for food, work, or companionship. While some health professionals focus solely on health in humans, public health is hugely impacted by interactions between animals, people, and their environment.

The 42 credit hour Master of Public Health degree with a concentration in Animals, People, and the Environment at Colorado State University has unique, internationally recognized programs to provide both classroom and practical education opportunities in this important area of public health.

This concentration prepares graduates for a variety of careers in national, state, and local public health agencies including a variety of governmental and non-governmental agencies, health care agencies, and academia. These include both domestic and international opportunities. The focus is on the diseases shared between wildlife, domestic animals, and humans – ensuring our environment is safe for all.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required Animals, People & Environment Courses (8 credits)		
PBHC 5400	One Health in Public Health	3
FTEC 5740	Current Issues in Food Safety	2
PBHC 6450	Team Science	3
Required APE Electives (5 credits from the following courses):		5
AGRI 5000	Advanced Issues in Agriculture	3
AGRI 5460	Principles of Cooperative Extension	3
ANEQ 6760	Molecular Approach to Food Safety	3
ANTP 5380	Food, Hunger and Culture	3
ERHS 5010	Biological Basis of Public Health	2
FSHN 5000	Food Systems, Nutrition and Food Security	2
FSHN 6400	Select Topics in Nutritional Epidemiology	2
FTEC 5720	Food Biotechnology	2
FWLD 5440	Ecotoxicology	3
JTCM 6700	Social Processes of Risk	3
MIPO 5550	Principles and Mechanisms of Disease	3
PBHC 6300	Field Methods of Disease Investigation	3
PBHC 6920	Public Health Seminar - APE	1-6
PBHC 6950	CSU Public Health Independent Study	1-3
POLS 6650	Public Policy Analysis	3
POLS 6700	Politics of the Environment and Sustainability	3
PSCY 5170	Perspectives in Global Health	3

SOCO 5620	Sociology of Food Systems and Agriculture	3
VSCS 5330	Epidemiologic Infections Disease/Zoonosis	3
EPID 6640	Investigation of Disease Outbreaks	2
EHOH 6622	Intro to Public Health in Disasters	3
EHOH 6625	Global Response to Disasters and Climate Crises	3
EHOH 6635	Climate Change and Health	3
VM 637 (3) for MPH/DVM students only		3
VM 707 (1) for MPH/DVM students only		1
VM 714 (4) for MPH/DVM students only		4
General Electives (8 credits)		8
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

Epidemiology

Expand public understanding of health risks and provide data for preventive approaches in public health as an epidemiologist. Through surveillance, data collection, exposure assessment, and the implementation and evaluation of intervention programs, epidemiologists are needed to determine disease risk and preventative factors to then evaluate disease prevention strategies. If you're interested in being a part of the cornerstone of public health research, epidemiology is the profession for you.

In the Colorado School of Public Health's 42 credit hour Master of Public Health degree program, with a concentration in Epidemiology at Colorado State University, you'll be trained in epidemiologic study designs, outbreak investigations, statistical analysis and the biological principles underlying infectious and chronic diseases. Epidemiology students utilize their training to conduct epidemiologic research studies by collecting, analyzing and interpreting data that are used to develop evidence based practices.

With an MPH in epidemiology, you can work in a wide variety of settings, including international health agencies, government health departments, academia, industry and research institutions. CSU faculty are actively involved in the following areas: environmental and occupational, cancer, chronic disease, infectious disease, genetic/ molecular and veterinary epidemiology.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required Epidemiology Courses (12 credits)		
PBHC 5340	Public Health Data Management Using SAS	3
PBHC 5750	Epidemiological Research for Public Health	3
PBHC 6600	Quantitative Methods in Public Health II	3
ERHS 6400	CSU Advanced Epidemiology	3

Electives (9 credits)		9
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

Global Health & Health Disparities

Globalization has changed the way that governments and nongovernmental organizations tackle challenging health issues like HIV/AIDS prevention, the spread of communicable diseases, malnutrition, the diabetes epidemic and access to basic medical care.

The 42 credit hour Master of Public Health program concentration in Global Health and Health Disparities at Colorado State University, is built upon the school's core public health curriculum with the addition of faculty expertise in the social, economic and cultural components of health and health disparities.

Reducing the high rate of morbidity and mortality suffered by the poor will require focusing on interventions that can achieve the greatest improvement in health. This concentration is designed for students who intend to study, identify, and solve public health problems locally and globally.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required Global Health & Health Disparities Courses (9 credits)		
PBHC 5530	Global Health Foundations	3
PBHC 5540	Decolonizing Global Health	3
PBHC 6500	Health Promotion Program	3
Global Health and Health Disparities Electives (2-3 credits from the following courses):		
ANTP 5200	Women Health & Culture	3
ANTP 5380	Food, Hunger and Culture	3
ERHS 5600	Health Impact Assessment	2
FSHN 5610	Global Nutrition	2
HDFS 6100	Risk and Resilience	3
PBHC 5400	One Health in Public Health	3
CBHS 6644	Social Determinants of AIAN Health	3
EHOH 6622	Intro to Public Health in Disasters	3
EHOH 6642	Climate and Disaster Mental Health	3
EPID 6645	One Health - EcoHealth - Planetary Health	1
PUBH 6625	Anti-Oppressive Practice and Research in Public Health	2
ANTR 5000	Immigrant and Refugee Health	3
CHBH 5680	Rural Community Health Issues	3
General Electives (9-10 credits)		9

Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

Health Communication

The 42 credit hour Master of Public Health program concentration in Health Communication at Colorado State University, prepares the future public health professional to employ scientifically-based communication strategies in an effort to improve health on both the individual and community level. Effective communication is a necessary element in all domains of health care.

According to the U.S. Department of Health and Human Services, health communication is especially critical in eight contexts:

1. Health professional-patient relations.
2. Individuals' exposure to, search for, and use of health information.
3. Individuals' adherence to clinical recommendations and regimens.
4. The construction of public health messages and campaigns.
5. The dissemination of individual and population health risk information (risk communication).
6. Images of health in the mass media and the culture at large.
7. The education of consumers about how to gain access to the public health and health care systems.
8. The development of telehealth applications.

Learn to create effective communication campaigns and prevent disease, promote health, influence health policies and enhance the quality of life of individuals within local and global communities. Be the voice for public health.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required Health Communication Courses (9 credits)		
JTCM 6300	Health Communication	3
SPCM 5380	Relating and Organizing for Health	3
JTCM 6140	Public Communication Campaigns	3
Health Communication Electives (3 credits from the following courses):		
JTCM 5010	Process and Effects of Communication	4
JTCM 6500	Strategic Communication Management	3
JTCM 6600	Communication and Innovation	3
JTCM 6610	Information Design	3
JTCM 6700	Social Processes of Risk	3
PBHC 6923	Public Health Seminar - HCOM	1-6
PBHC 6950	CSU Public Health Independent Study	1-3
SPCM 6320	Theory of Interpersonal Communication	3

SPCM 6390	Communication Theory	3
CHBH 5050	Health Communications and the Media	3
CBHS 6628	Tech-based health Promotion	3
EHOH 6638	Communication Skills for Public Health Impact	3
General Electives (9 credits)		9
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

Physical Activity & Healthy Lifestyles

Leaders who understand the physiological and public health implications of lifestyle choices, including physical activity and nutrition, are needed to help battle obesity, diabetes, mental health, and other chronic diseases.

The 42 credit hour Master of Public Health program concentration in Physical Activity and Healthy Lifestyles at Colorado State University, prepares graduates for a variety of careers striving to increase the number of people who adopt healthy lifestyle choices. These careers are in state and local health departments, federal agencies, parks and recreation departments, non-profit and community health organizations, worksites and schools.

In the Physical Activity and Healthy Lifestyles concentration, students can choose from a range of classes on topics related to physical activity, nutritional sciences, exercise science, epidemiology, and health promotion planning.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required Physical Activity & Healthy Lifestyles Courses (9 credits)		
PBHC 6440	Physical Activity and Public Health	3
PBHC 6500	Health Promotion Program	3
JTCM 6140	Public Communication Campaigns	3
Physical Activity & Healthy Lifestyles Electives (5 credits from the following courses):		
ANTP 5050	Resilience, Well-Being and Social Justice	3
ERHS 5010	Biological Basis of Public Health	2
ERHS 5600	Health Impact Assessment	2
FSHN 5000	Food Systems, Nutrition and Food Security	2
FSHN 5200	Advance Medical Nutrition Therapy	3
FSHN 5250	Nutrition Education, Theory and Practice	2
FSHN 5300	Principles of Nutrition Science and Metabolism	3
FSHN 6200	Community Nutrition Plan and Evaluation	3
FSHN 6400	Select Topics in Nutritional Epidemiology	2
FSHN 6500	Recent Dev in Human Nutrition - Proteins	2

FSHN 6501	Human Nutrition: Carbohydrates, Lipids and Energy	2
FSHN 6502	Recent Developments in Human Nutrition - Genomics	2
FSHN 6600	Women's Issues in Lifecycle: Nutrition	2
HDFS 5920	Grant Writing: Human Services	3
HDFS 6070	Prevention Science Across the Life-span	3
HDFS 6100	Risk and Resilience	3
HESC 6450	Epidemiology of Health and Physical Activity	3
JTCM 6700	Social Processes of Risk	3
PBHC 6924	Public Health Seminar - PAHL	1-6
PBHC 6950	CSU Public Health Independent Study	1-3
PSCY 6000	Health Psychology	3
CHBH 5250	Contemporary Issues in School Health	3
CHBH 5330	Physical Activity Interventions in the Community	3
CBHS 6614	Childhood Obesity	1
CBHS 6626	Public Health and Aging	2
PMHW 6601	Mental Health	3
General Electives (7 credits)		7
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

Public Health Nutrition

Poor dietary patterns are the leading causes of chronic disease worldwide. Promoting better nutrition in the population requires approaches informed by the nutrition, social, behavioral, and health sciences; local knowledge and experience; and best practices for designing, implementing, and evaluating nutrition policies and programs.

The 42-credit Public Health Nutrition concentration prepares you to apply the science of nutrition and epidemiological principles to programs and policy, systems, and environmental approaches that promote healthy dietary behaviors. You will also have the opportunity to take electives that allow you to further tailor your education in areas like nutrition and sustainable food systems, and nutrition and physical activity for chronic disease prevention. The Public Health Nutrition concentration is housed at the Colorado State University (CSU) campus of the Colorado School of Public Health. CSU is a land grant institution with an active interdisciplinary team of food systems scholars and a strong history of chronic disease prevention in Colorado, the US, and globally.

You will come away with an understanding of:

- how the under- and over-consumption of macronutrients and micronutrients can lead to poor health outcomes;
- how to critically review the nutrition literature, analyze nutrition and health data, and assess dietary intake;
- and how to apply planning and evaluation strategies to nutrition programs that focus on addressing the social determinants of health and food systems issues.

Examples of career paths that you could pursue after completing this program include designing nutrition campaigns or programs for communities; working with non-profits to improve access to healthy foods; working in local, state, or federal government to evaluate and

monitor nutrition programs; and working with international non-governmental organizations to inform the development of food and nutrition policies abroad.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required Public Health Nutrition Courses (10 credits)		
FSHN 5250	Nutrition Education, Theory and Practice	2
FSHN 5300	Principles of Nutrition Science and Metabolism	3
FSHN 6200	Community Nutrition Plan and Evaluation	3
FSHN 6400	Select Topics in Nutritional Epidemiology	2
Public Health Nutrition Electives (2-3 credits from the following courses):		
PBHC 6440	Physical Activity and Public Health	3
ANTP 5380	Food, Hunger and Culture	3
AGRI 5000	Advanced Issues in Agriculture	3
FSHN 5000	Food Systems, Nutrition and Food Security	2
FSHN 6600	Women's Issues in Lifecycle: Nutrition	2
FTEC 5740	Current Issues in Food Safety	2
General Electives (9-10 credits)		9-10
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

University of Northern Colorado Curriculum

Community Health Education

In this program, you'll learn how to plan, implement, and evaluate programs that promote the health of individuals and communities. You'll have access to faculty who are making a mark in the community, getting out there and doing. Our faculty and students are passionate about working with diverse populations to improve health. And because this is an evening program, it's a great fit for working professionals looking to advance their education while maintaining a day job.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
CHBH 5090	Behavior Change Theories	3
CHBH 5500	Environmental Health	3
CHBH 6120	Statistical Applications in Public Health	3
CHBH 6200	UNC Epidemiology	3
CHBH 6350	Policy, Advocacy, Leadership & Management in Community Health	3

CHBH 5200	UNC Foundations in Public Health	2
Required Community Health Education Courses (12 credits)		
CHBH 5300	Strategies for Community Health Promotion	3
CHBH 5350	Effective Community Health Engagement	3
CHBH 6100	Program Planning and Evaluation	3
Choose 1 of the following 3 courses:		
CHBH 6150	Methods in Public Health Research and Evaluation	3
HRSS 6100	Interpretation and Evaluation of Behavioral Research	3
SRMS 6000	Introduction to Graduate Research	3
Electives (9 credits)		9
Practicum (2 credits)		
CHBH 6930	Master of Public Health Practicum	2
Capstone (2 credits)		
CHBH 6860	Master of Public Health Capstone Project	2
Total Hours		42

Community Health Education + Global Health

The MPH in Community Health Education + Global Health is a 45-credit-hour program that's designed to provide you with a public health perspective of globalization and global health issues. As a student in this program, you'll gain the skills you need to apply public health methods to address global challenges.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
CHBH 5090	Behavior Change Theories	3
CHBH 5500	Environmental Health	3
CHBH 6120	Statistical Applications in Public Health	3
CHBH 6200	UNC Epidemiology	3
CHBH 6350	Policy, Advocacy, Leadership & Management in Community Health	3
CHBH 5200	UNC Foundations in Public Health	2
Required Community Health Education Courses (12 credits)		
CHBH 5300	Strategies for Community Health Promotion	3
CHBH 5350	Effective Community Health Engagement	3
CHBH 6100	Program Planning and Evaluation	3
Choose 1 of the following 3 courses:		
CHBH 6150	Methods in Public Health Research and Evaluation	3
HRSS 6100	Interpretation and Evaluation of Behavioral Research	3
SRMS 6000	Introduction to Graduate Research	3
Required Global Public Health Courses (9 credits)		
CBHS 6619	Public Health in the Global Community	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6634	Applied Global Health Epidemiology	2
HSMP 6618	Comparative Health Systems	2
Global Public Health Electives (3 credits from this Approved List of Courses):		
EHOH 6621	GIS for Public Health Research/Practice	3
EHOH 6622	Intro to Public Health in Disasters	3
EHOH 6624	Infectious Diseases, Environmental Contexts	3
EHOH 6625	Global Response to Disasters and Climate Crises	3

EHOH 6627	Water Quality and Public Health	3
EHOH 6633	International Travel and Health	1
EHOH 6635	Climate Change and Health	3
EHOH 6641	Critical Policies in Global Health Engagement	3
EHOH 6642	Climate and Disaster Mental Health	3
EPID 6624	Public Health Surveillance	2
EPID 6628	Global Health and Disasters	2
EPID 6634	Applied Global Health Epidemiology	2
EPID 6635	Infectious Disease Epidemiology	2
EPID 6636	Chronic Disease Epidemiology	3
EPID 6640	Investigation of Disease Outbreaks	2
EPID 6641	Epidemiology of Foodborne and Diarrheal Diseases	2
EPID 6643	Epidemiology and Prevention of TB/HIV/STDs	2
EPID 6647	CU Denver in India: Global Health in the Heart of India	3
EPID 6649	Vaccine Science, Application and Policy	2
HSMP 6602	Health Equity	3
HSMP 6608	Ethical and Legal Issues in Public Health	2
HSMP 6615	Current Global Health Policy Issues	2
HSMP 6618	Comparative Health Systems	2
ANTP 5200	Women Health & Culture	3
ANTP 5320	Culture of Disaster	3
ANTP 5400	Medical Anthropology	3
ANTP 5450	Global Mental Health - Theory and Method	4
ANTP 5710	Anthropology and Global Health	3
FSHN 5000	Food Systems, Nutrition and Food Security	2
IEOO 6790	Advanced International Development	3
PSCY 5150	Women's Health	3
Practicum (2 credits)		
CHBH 6930	Master of Public Health Practicum	2
Capstone (2 credits)		
CHBH 6860	Master of Public Health Capstone Project	2
Total Hours		45

Online Curriculum Leadership & Public Health Practice

As a student in this online program, you'll gain the skills needed to take the next step in your career and ground your work in the foundations of public health. We offer all of the required courses online—in both asynchronous and synchronous formats. We don't run on a cohort model so you can adjust your coursework on a semester-by-semester basis to accommodate your work or personal schedule.

This 42-credit hour program includes practice-based learning experiences. With courses in all five core areas of public health, ranging from biostatistics to health policy, you'll learn the fundamentals of the discipline. You'll also gain the management, budgeting, evaluation, and public health administration experience you need to become an effective leader and manager, and you'll tailor your coursework to your passions with nine elective credits.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Leadership & Public Health Practice Courses (12 credits)		
CBHS 6640	Leadership for Public Health Practice	3
HSMP 6640	Leadership for Public Health Practice Part 2	3
CBHS 6612	Methods in Research and Evaluation	3
HSMP 6634	Management, Budgeting and Public Health Administration	3
Electives (9 credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
CBHS 6990	MPH Capstone Preparation - CBHS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Population Mental Health & Wellbeing

This program is among the first and only accredited Master of Public Health programs in the U.S. focused on population mental health. You can complete this program entirely online or at the University of Colorado Anschutz Medical Campus. In this program, you'll gain a strong foundation in the principles and theories of public health practice, with the specialized knowledge needed to practice public health in the areas of mental health, substance use, and wellbeing. You'll join a community of people who are dedicated to lessening the burden that mental health and substance use disorders have on the health of individuals, families, and communities. In addition, you'll have access to faculty with a wide range of expertise—from autism spectrum disorders, to cannabis use, to suicide.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Population Mental Health & Wellbeing Courses (12 credits)		
PMHW 6601	Mental Health	3
PMHW 6620	Mental Health Systems and Policy	3
PMHW 6621	Mental Health and Wellbeing Promotion	3
CBHS 6612	Methods in Research and Evaluation	3
Electives (9 credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		

CBHS 6990	MPH Capstone Preparation - CBHS	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Epidemiology

In this program, you'll study diseases in populations and learn how to apply evidence-based information to promote health and prevent illness. In epidemiology, we get to see the applications of our work every day, saving lives in the here and now and in the future. And as a student in our department, you'll have access to faculty with a wide range of expertise - from food safety, to diabetes, to gene-environment interactions, we do it all.

Curriculum

Code	Title	Hours
Required Public Health Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
CBHS 6610	Social and Behavioral Factors and Health	3
EHOH 6614	Occupational and Environmental Health	3
EPID 6630	Epidemiology	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Epidemiology Courses (12 credits)		
EPID 6626	Research Methods in Epidemiology	3
EPID 6631	Analytical Epidemiology	3
BIOS 6602	Applied Biostatistics II	3
BIOS 6680	Data Management Using SAS (OR)	3
EPID 6605	Introduction to R for Health Sciences (AND)	
EPID 6607	Data Management with R	
Electives (9 credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

Public Health Certificates

The following certificates are available through the Colorado School of Public Health at the **CU Anschutz Medical Campus** in **Aurora, Colorado**:

Applied Biostatistics

This certificate, offered at the University of Colorado Anschutz Medical Campus, provides graduate training in applied biostatistics for health care professionals and others interested in expanding their analytic knowledge and skills. This 15-credit certificate will provide you with skills in basic data management, biostatistics, and data analysis with applications in a wide range of clinical and public health areas. Upon completion, you'll be ready to meet the increasing demand for biostatistical expertise in the workforce.

Curriculum

Code	Title	Hours
Required Courses (6 credits)		
BIOS 6601	Applied Biostatistics I	3
BIOS 6602	Applied Biostatistics II	3
Computing Electives (3 credits from the following courses):		
BIOS 6640	R for Data Science	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6680	Data Management Using SAS	3
BIOS 6681	Structured Query Language Using SAS PROC SQL	1
Biostatistics Electives (6 credits from the following courses):		
BIOS 6623	Advanced Data Analysis	4
BIOS 6641	Causal Inference	3
BIOS 6629	Applied Survival and Longitudinal Data Analysis	3
BIOS 6685	Introduction to Public Health Informatics	3
EPID 6630	Epidemiology	3
Total Hours		16

Climate and Disaster Resilience

In this program you'll learn how to promote the health of communities threatened by natural hazards, incidents of mass violence, civil conflict, infectious disease outbreaks, and other emergent public health threats. This interdisciplinary certificate focuses on training the leaders of tomorrow to help domestic and international communities prepare for, respond to, and recover from disasters. In addition, you'll get hands-on experience through table-top and field simulation exercises.

Code	Title	Hours
Required Courses		
EHOH 6622	Intro to Public Health in Disasters	3
EHOH 6625	Global Response to Disasters and Climate Crises	3
EHOH 6626	Disasters and Climate Crises: Practical Applications	3
EHOH 6642	Climate and Disaster Mental Health	3
Electives: Choose a minimum of 3 credits from the following:		
CBHS 6619	Public Health in the Global Community	3
CBHS 6624	Community Health Assessment	3
CBHS 6629	Health and Human Rights	3
EHOH 6620	Risk Analysis & Decision Making	3
EHOH 6621	GIS for Public Health Research/Practice	3

EHOH 6623	Geographic Perspective on Global Health	2
EHOH 6624	Infectious Diseases, Environmental Contexts	3
EHOH 6633	International Travel and Health	1
EHOH 6635	Climate Change and Health	3
EHOH 6638	Communication Skills for Public Health Impact	3
EPID 6624	Public Health Surveillance	2
EPID 6628	Global Health and Disasters	2
EPID 6634	Applied Global Health Epidemiology	2
EPID 6635	Infectious Disease Epidemiology	2
EPID 6640	Investigation of Disease Outbreaks	2
HSMP 6608	Ethical and Legal Issues in Public Health	2
HSMP 6615	Current Global Health Policy Issues	2
HSMP 6618	Comparative Health Systems	2
ANTP 5320	Culture of Disaster	3
ANTP 5380	Food, Hunger and Culture	3
FSHN 5000	Food Systems, Nutrition and Food Security	2
IEOO 6790	Advanced International Development	3
Total Hours		15

ColoradoSPH/CU-SOM Rural Public Health

The ColoradoSPH/CU-SOM Rural Public Health Certificate program focuses on the integration of medical school curriculum with ColoradoSPH curriculum to provide a foundation in public health knowledge and practice in rural communities specifically for medical students.

Curriculum

Code	Title	Hours
8 Credit Hours from the ColoradoSPH Curriculum:		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
PUBH 6600	Foundations in Public Health	2
7 Credit Hours from the CU-SOM Rural MD Curriculum:		
Health and Society curriculum in year 1 and 2		
Population and Public Health "area of concentration" in year 2 (Rural Program)		
Community Health Assessment Project in year 2 (Rural Program)		
Service Learning in year 1 and 2 (Rural Program)		
TOTAL 15 Credits		

Global Public Health

This certificate program, offered at the University of Colorado Anschutz Medical Campus, will help you address the health challenges that have arisen with increasing globalization. As the world becomes more interconnected, governments and non-governmental organizations have changed the ways they tackle health issues like HIV/AIDS, communicable diseases, malnutrition, diabetes, and access to medical care. In this program, you'll learn how to address global health disparities on community and systems levels.

Curriculum

Code	Title	Hours
Required Course (10 credits)		
CBHS 6619	Public Health in the Global Community	3
BIOS 6601	Applied Biostatistics I	3
EHOH 6623	Geographic Perspective on Global Health	2
EPID 6630	Epidemiology	3
Electives (4 credits from the following courses):		
CBHS 6629	Health and Human Rights	3
EHOH 6621	GIS for Public Health Research/Practice	3
EHOH 6633	International Travel and Health	1
EPID 6624	Public Health Surveillance	2
EPID 6635	Infectious Disease Epidemiology	2
EPID 6640	Investigation of Disease Outbreaks	2
EPID 6641	Epidemiology of Foodborne and Diarrheal Diseases	2
EPID 6643	Epidemiology and Prevention of TB/HIV/STDs	2
HSMP 6602	Health Equity	3
HSMP 6615	Current Global Health Policy Issues	2
Total Hours		15

Health Analytics & Data Science

This certificate, offered at the University of Colorado Anschutz Medical Campus, provides graduate training in analytic methods and data science for healthcare professionals and researchers. In this program, you'll learn about analytic methods for large and complex data in areas like 'omics, imaging, electronic health records, and mobile health. When you leave this program, you'll be ready to answer complex clinical questions by using data to display and communicate healthcare trends.

Curriculum

Code	Title	Hours
Required Analytics and Computing Courses (6 credits)		
BIOS 6602	Applied Biostatistics II	3
or BIOS 6611	Biostatistical Methods I	
BIOS 6640	R for Data Science	3
or BIOS 6642	Introduction to Python Programming	
Analytics Electives (3 credits from the following courses):		
BIOS 6612	Biostatistical Methods II	3
BIOS 6623	Advanced Data Analysis	4
BIOS 6641	Causal Inference	3
BIOS 6645	Predictive Analytics	3
BSBT 6111	Introduction to Biomedical Data Practices	2
CSCI 5930	Machine Learning	3
CSCI 5931	Deep Learning	3
CSCI 5580	Data Science	3
CSCI 7952	Big Data Science	3
MATH 6388	Statistical and Machine Learning	3
Computing Electives (3 credits from the following courses):		
BIOS 6680	Data Management Using SAS	3
BIOS 6640	R for Data Science	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6644	Practical Data Wrangling	2

CPBS 7630	Computational Methods for Data Challenges in Biomed	3
CSCI 5559	Database Systems	3
CSCI 5951	Big Data Systems	3
Optional Specialty Electives (3 credits in the following areas):		3
Genomics		
Health Informatics		
Imaging Analysis		
Health Services Research		
Mobile Health		
Total Hours		19

Population Mental Health & Wellbeing

This certificate, offered at the University of Colorado Anschutz Medical Campus, will help you to understand the challenges of preventing and treating mental health and substance use conditions to promote mental well-being at a population level. You'll be introduced to innovative, population-minded approaches to behavioral health issues and be trained in epidemiology, health policy, social and behavioral health, and more. This certificate is ideal for public health practitioners interested in building their expertise in behavioral health issues and for members of the behavioral health workforce looking for a population-based perspective.

Curriculum

Code	Title	Hours
Required Courses 12 credits)		
PMHW 6601	Mental Health	3
PMHW 6620	Mental Health Systems and Policy	3
CBHS 6610	Social and Behavioral Factors and Health	3
EPID 6630	Epidemiology	3
Electives (3 credits from the following courses):		
Content Focused Electives		
CBHS 6616	Intimate Partner Violence: Epidemiology	1
CBHS 6621	Introduction to Maternal and Child Health	3
CBHS 6629	Health and Human Rights	3
CBHS 6634	Adolescent Health	1
EHOH 6622	Intro to Public Health in Disasters	3
EPID 6637	Injury and Violence Epidemiology and Prevention	2
ANTP 5450	Global Mental Health - Theory and Method	4
HDFS 6120	Adolescent Development	3
PSCY 6000	Health Psychology	3
Methods Focused Electives		
BIOS 6602	Applied Biostatistics II	3
BIOS 6648	Design and Conduct of Clinical Research	3
CBHS 6612	Methods in Research and Evaluation	3
CBHS 6613	Program Planning and Implementation	3
HSMP 6602	Health Equity	3
HDFS 6080	Program Design and Implementation	3
HDFS 6090	Prevention Program Evaluation	3
CHBH 6100	Program Planning and Evaluation	3
CHBH 6150	Methods in Public Health Research and Evaluation	3
Total Hours		15

Public Health Sciences

Public health is a profession that connects numerous disciplines in pursuit of healthier and safer communities. Whatever field you're currently in, consider enriching your professional background through this certificate, which is designed for students who don't yet have formal education in public health. You can enroll in this certificate at any of our three university locations—CU Anschutz Medical Campus (<https://coloradosph.cuanschutz.edu/education/locations/cu-anschutz-medical-campus/>), Colorado State University (<https://coloradosph.cuanschutz.edu/education/locations/csu/>), or the University of Northern Colorado (<https://coloradosph.cuanschutz.edu/education/locations/unc/>). And if you fall in love with public health while you're studying with us, you can follow up on your certificate with an application to one of our Master of Public Health programs (<https://coloradosph.cuanschutz.edu/education/degrees-and-programs/master-of-public-health/>).

Curriculum

Code	Title	Hours
Required Courses (8 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
PUBH 6600	Foundations in Public Health	2
Electives (7 credits)		7
Total Hours		15

The following certificates are available through the Colorado School of Public Health at **Colorado State University in Fort Collins, Colorado**:

Public Health Sciences

Public health is a profession that connects numerous disciplines in pursuit of healthier and safer communities. Whatever field you're currently in, consider enriching your professional background through this certificate, which is designed for students who don't yet have formal education in public health. You can enroll in this certificate at any of our three university locations—CU Anschutz Medical Campus (<https://coloradosph.cuanschutz.edu/education/locations/cu-anschutz-medical-campus/>), Colorado State University (<https://coloradosph.cuanschutz.edu/education/locations/csu/>), or the University of Northern Colorado (<https://coloradosph.cuanschutz.edu/education/locations/unc/>). And if you fall in love with public health while you're studying with us, you can follow up on your certificate with an application to one of our Master of Public Health programs (<https://coloradosph.cuanschutz.edu/education/degrees-and-programs/master-of-public-health/>).

Curriculum

Code	Title	Hours
Required Courses (8 credits)		
PBHC 5600	Quantitative Methods in Public Health	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5160	Public Health Foundations	2
Electives (7 credits)		7
Total Hours		15

The following certificates are available through the Colorado School of Public Health at the **University of Northern Colorado in Greeley, Colorado**:

Public Health Sciences

Public health is a profession that connects numerous disciplines in pursuit of healthier and safer communities. Whatever field you're currently in, consider enriching your professional background through this certificate, which is designed for students who don't yet have formal education in public health. You can enroll in this certificate at any of our three university locations - CU Anschutz Medical Campus, Colorado State University, or the University of Northern Colorado. And if you fall in love with public health while you're studying with us, you can follow up on your certificate with an application to one of our Master of Public Health programs.

Curriculum

Code	Title	Hours
Required Courses (8 credits)		
CHBH 6120	Statistical Applications in Public Health	3
CHBH 6200	UNC Epidemiology	3
CHBH 5200	UNC Foundations in Public Health	2
Electives (7 credits)		7
Total Hours		15

Rural Public Health

This certificate, offered primarily at the University of Northern Colorado with many electives at Colorado State University, is designed to help meet the need for talented public health professionals in rural communities. In this program, you'll learn about health disparities that affect rural populations, gain an understanding of effective community engagement strategies, and learn how to access and address community health needs.

Curriculum

Code	Title	Hours
CHBH 5050	Health Communications and the Media	3
CHBH 5200	UNC Foundations in Public Health	2
CHBH 6200	UNC Epidemiology	3
CHBH 5680	Rural Community Health Issues	3
Electives (4 credits from the following courses)		4
CBHS 6614	Childhood Obesity	1
CBHS 6616	Intimate Partner Violence: Epidemiology	1
CBHS 6617	Nutrition and Public Health	1
CBHS 6624	Community Health Assessment	3
CBHS 6627	Maternal Nutrition	1
CBHS 6631	Introduction to Sexual and Reproductive Health	1
CBHS 6634	Adolescent Health	1
CBHS 6635	Child Nutrition	1
CBHS 6636	Early Childhood Hlth, ACEs, Toxic Stress, Hlth Equity	1
CBHS 6648	Ethical Considerations in AIAN Health	1
CHBH 6120	Statistical Applications in Public Health	3
CHBH 5250	Contemporary Issues in School Health	3
CHBH 5090	Behavior Change Theories	3
CHBH 5300	Strategies for Community Health Promotion	3
CHBH 5350	Effective Community Health Engagement	3
CHBH 5500	Environmental Health	3

CHBH 6350	Policy, Advocacy, Leadership & Management in Community Health	3
AGRI 5460	Principles of Cooperative Extension	3
AGRI 5470	Delivery of Co-operative Extension Programs	4
FSHN 6200	Community Nutrition Plan and Evaluation	3
FTEC 5740	Current Issues in Food Safety	2
HDFS 6100	Risk and Resilience	3
PBHC 5400	One Health in Public Health	3
PBHC 6921	Public Health Seminar - EPI	2
Total Hours		15

The following certificates are available through the Colorado School of Public Health via **Online** instruction:

American Indian & Alaska Native Health

In this online certificate program you'll learn how to implement, evaluate and research interventions to improve the health and well-being of American Indian and Alaska Native communities. While this population experiences greater poverty rates, discrimination in access to care, and rates of chronic illness compared to other Americans, this certificate will afford students the opportunity to learn about the resilience and strength of American Indians and Alaska Natives. In this program, you will learn how to harness the lessons learned from American Indian and Alaska Native peoples to positively shape public health interventions, programs, and policy for the benefit of all.

Code	Title	Hours
Required Courses:		
CBHS 6647	Foundations of American Indian Alaska Native Health (Required Courses:)	3
CBHS 6644	Social Determinants of AIAN Health	3
CBHS 6648	Ethical Considerations in AIAN Health	1
CBHS 6646	Community Participatory Research & Review with American Indians/Alaska Natives	2
Elective Courses: Choose a minimum of 6 credits from the following approved online elective credits:		
BIOS 6601	Applied Biostatistics I	3
BIOS 6685	Introduction to Public Health Informatics	3
CBHS 6610	Social and Behavioral Factors and Health	3
CBHS 6612	Methods in Research and Evaluation	3
CBHS 6614	Childhood Obesity	1
CBHS 6616	Intimate Partner Violence: Epidemiology	1
CBHS 6617	Nutrition and Public Health	1
CBHS 6619	Public Health in the Global Community	3
CBHS 6620	Survey Research	3
CBHS 6627	Maternal Nutrition	1
CBHS 6628	Tech-based health Promotion	3
CBHS 6631	Introduction to Sexual and Reproductive Health	1
CBHS 6634	Adolescent Health	1
CBHS 6635	Child Nutrition	1
CBHS 6636	Early Childhood Hlth, ACEs, Toxic Stress, Hlth Equity	1
EHOH 6614	Occupational and Environmental Health	3
EHOH 6622	Intro to Public Health in Disasters	3
EHOH 6623	Geographic Perspective on Global Health	2

EHOH 6634	Spec Professions Protecting/Promoting Worker Health	1
EPID 6630	Epidemiology	3
EPID 6640	Investigation of Disease Outbreaks	2
HSMP 6601	Introduction to HSMP	3
HSMP 6634	Management, Budgeting and Public Health Administration	3
PUBH 6600	Foundations in Public Health	2
CHBH 5250	Contemporary Issues in School Health	3
Total Hours		15

Maternal & Child Health

In this online certificate program, you'll learn about evidence-based approaches to improve the health, safety, and well-being of women, children, and families. This certificate provides the options that you need to customize your learning with both high-level views of maternal and child health (MCH) and deep dives into specific topics like MCH nutrition issues or MCH epidemiologic methods.

Curriculum

Code	Title	Hours
Required Courses (5 credits)		
PUBH 6600	Foundations in Public Health	2
CBHS 6621	Introduction to Maternal and Child Health	3
MCH Electives (10 credits from the following courses):		
BIOS 6601	Applied Biostatistics I	3
CBHS 6612	Methods in Research and Evaluation	3
CBHS 6613	Program Planning and Implementation	3
CBHS 6614	Childhood Obesity	1
CBHS 6616	Intimate Partner Violence: Epidemiology	1
CBHS 6617	Nutrition and Public Health	1
CBHS 6618	CURRENT RESEARCH AM INDIAN ALASKA NAT CHILD HEALTH DEV	1
CBHS 6619	Public Health in the Global Community	3
CBHS 6625	Current Regional Issues in Maternal & Child Health	1
CBHS 6627	Maternal Nutrition	1
CBHS 6628	Tech-based health Promotion	3
CBHS 6629	Health and Human Rights	3
CBHS 6631	Introduction to Sexual and Reproductive Health	1
CBHS 6634	Adolescent Health	1
CBHS 6635	Child Nutrition	1
CBHS 6636	Early Childhood Hlth, ACEs, Toxic Stress, Hlth Equity	1
CBHS 6641	Developmental Screening, Strategies and Referral	1
CBHS 6643	Women's Health: A Public Health Perspective	2
EPID 6630	Epidemiology	3
EPID 6637	Injury and Violence Epidemiology and Prevention	2
EPID 6641	Epidemiology of Foodborne and Diarrheal Diseases	2
EPID 6642	Genetics in Public Health	2
EPID 6644	Maternal Child Health Epidemiology	3
HSMP 6614	MCH Program Management & Policy Analysis	3
HDFS 6100	Risk and Resilience	3
HDFS 6120	Adolescent Development	3
PSCY 5150	Women's Health	3

CHBH 5250	Contemporary Issues in School Health	3
CHBH 5750	Public Health Issues in Reproductive Health	3
CHBH 6100	Program Planning and Evaluation	3
CHBH 6150	Methods in Public Health Research and Evaluation	3
CLSC 6663	Intervention for Individuals with Developmental Disabilities	3
CLSC 6668	Screening/Assessment for Children/Youth with Autism/Neurodevelopmental Disabilities	3
Total Hours		15

Total Worker Health[®]

This online program is designed for public health graduate students and current working professionals who are seeking career advancement. In this program, you'll learn how to develop and manage Total Worker Health (TWH) initiatives—workplace safety, wellness, and health promotion programs. You'll learn how to assess organizational culture, plan and evaluate health and safety programs, and become a better leader. In addition, you'll take classes taught by expert faculty from the Center for Health, Work & Environment (<https://coloradosph.cuanschutz.edu/research-and-practice/centers-programs/chwe/home/>)—one of six Centers of Excellence for TWH. With this certificate, you'll become part of a community of business leaders and academics committed to workplace health and safety.

According to the National Institute for Occupational Safety and Health (NIOSH) (<https://www.cdc.gov/niosh/twh/default.html>), TWH includes policies, programs, and practices that integrate protection from work-related safety and health hazards with the promotion of injury and illness prevention efforts to advance worker well-being.

Curriculum

Code	Title	Hours
Required Courses (15 credits)		
EHOH 6628	Health Protection/Promotion in the Workplace.	3
EHOH 6634	Spec Professions Protecting/Promoting Worker Health	1
EHOH 6639	Occupational Health Psychology	3
EHOH 6614	Occupational and Environmental Health	3
EHOH 6629	Introduction to Occupational Safety and Ergonomics	2
EHOH 6638	Communication Skills for Public Health Impact	3
Total Hours		15

Public Health Dual Degree Programs (MPH)

Overview

If you're looking to complete two degrees at once to gain the skills you need to work interdisciplinarily across healthcare and public health settings, a dual degree may be the right fit for you. Since public health interacts with many other professions, joining a dual degree program is a perfect opportunity to learn the breadth of public health in combination with another discipline that you're passionate about.

We offer Master of Public Health programs in collaboration with other University of Colorado, Colorado State University, and University of Denver programs. Admissions requirements vary by degree, so please be sure to check the individual program pages for additional information.

MD/MPH

This dual degree is offered by the University of Colorado School of Medicine and the Colorado School of Public Health on the CU Anschutz Medical Campus. In addition to receiving a Doctor of Medicine (MD) degree, students concurrently receive the Master of Public Health (MPH) degree in a concentration of their choice: Applied Biostatistics; Community & Behavioral Health; Environmental & Occupational Health; Epidemiology; Health Systems, Management & Policy; Maternal and Child Health; or a custom concentration. **Only students already in or accepted into the University of Colorado MD program are eligible to apply.**

Up to nine credits hours from the MD program will count toward completion of the 42-credit hour MPH. In order to help students select courses and successfully complete the dual degree, students are assigned faculty advisors from both the School of Medicine and ColoradoSPH.

Students pursue the MPH between years three and four of their medical education. The program requires an official leave of absence from the CU School of Medicine. Leave lasts three consecutive semesters (summer, fall, and spring). During this official leave, medical school loan obligations are waived. Students are assessed public health tuition rates for ColoradoSPH courses taken in the completion of the dual degree.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required Public Health Concentration Courses (12-15 credits)		12
MD Health and Society Curriculum (counts as 6-9 MPH elective credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID (or appropriate Capstone Preparation course for concentration)	1

PUBH 6991	MPH Capstone Integration	1
Total Hours		42

DNP/MPH

Scholars in the Doctor of Nurse Practice, Masters of Public Health (DNP/ MPH) dual-degree program concurrently earn a DNP from the University of Colorado's College of Nursing and a Masters of Public Health from the Colorado School of Public Health. This program may be completed entirely online. Only students already in or accepted into the University of Colorado DNP program are eligible to apply.

Up to 10 credit hours from the DNP program will count toward completion of the 42-credit hour MPH. To help students select courses and successfully complete the dual degree, students are assigned faculty advisors from both the College of Nursing and ColoradoSPH. Students in the DNP/MPH dual degree will take courses in both the DNP and MPH simultaneously.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PUBH 6600	Foundations in Public Health	2
BIOS 6601	Applied Biostatistics I	3
CBHS 6610	Social and Behavioral Factors and Health	3
EHOH 6614	Occupational and Environmental Health	3
EPID 6630	Epidemiology	3
HSMP 6601	Introduction to HSMP	3
Master of Public Health Concentration Courses (12-15 total credits)		12
Master of Public Health Electives (0-3 credits)		3
DNP Courses Approved as MPH Electives (6 credits):		
NURS 6633	Advanced Public Health Nursing	3
NURS 6800	Leadership, Financial Management and Innovation	3
DNP Courses approved as MPH Practice-Based Learning Credits (4 total credits)		
NURS 6752	Advanced Public Health Nursing Practicum I	4
NURS 8030	DNP Project I	4
NURS 8050	DNP Project III	4
Total Hours		42

PharmD/MPH

The role of the pharmacist continues to expand and pharmacists are now an integral part of the healthcare team. The PharmD/MPH degree is in response to that expanding role. It is offered in partnership with the Colorado School of Public Health.

University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences entry-level PharmD students are welcome to apply to pursue a Master of Public Health (MPH) degree in addition to their PharmD degree. A student **can apply in the second (P2) or fourth (P4) year** of pharmacy school. A student applying in the P2 year will take a one year leave of absence to complete coursework at the Colorado School of Public Health, and then re-enter the PharmD program as a P3 student. A student applying in the P4 year will engage in coursework for their MPH after completing their PharmD degree.

In the application process, a student will select an area of focus (concentration) for the MPH.

As a stand-alone program, the MPH is 42 credits. The PharmD/MPH allows PharmD students to apply 9 credits of PharmD coursework to the MPH, reducing the number of credits required within the ColoradoSPH to complete the MPH to 33.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12-15 credits)		12
Approved PharmD Courses as MPH Electives (6-9 credits)		
PHRD 5965	Patient-Centered Communication	4
PHRD 6065	Evidence-based Medicine & Literature Evaluation	3
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID (or appropriate Capstone Preparation course for concentration)	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		39

DDS/MPH

The CU School of Dental Medicine and the Colorado School of Public Health have joined together to offer dental students the unique opportunity to earn their Doctor of Dental Surgery (DDS) and Masters of Public Health (MPH) degrees.

The MPH program requires 42 credits to be completed. Students can select any of the concentrations across three campuses: University of Colorado Anschutz Medical Campus, University of Northern Colorado, Greeley and Colorado State University, Fort Collins. If students select the Leadership and Public Health Practice concentration all coursework can be completed online. Students can also create a custom concentration that reflects their unique interests in public health. Nine pre-approved credits of DDS coursework will be applied towards the MPH program. This will reduce the total credits for the MPH to 33 credits.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12-15 credits)		12

Approved DDS Courses for MPH Electives (6-9 credits from the following courses):

DSCD 5501	Community Public Health 1	0.1-5
DSCD 7705	Clinical Transformations: Interprofessional Education	0.1-5
DSCD 7706	Clinical Transformations: Interprofessional Education	1-5
DSCD 7710	Behavioral Health Sciences	0.1-5
DSCD 7711	Gerontology & Geriatric Health Care	0.1-5
DSCD 7730	Adult Special Health Care Need Dentistry	0.1-5
DSRE 8806	Critical Appraisal of Translational Literature II	0.1-5

Practicum (2 credits)

PUBH 6606	MPH Practicum	2
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Capstone (2 credits)

EPID 6990	MPH Capstone Preparation - EPID (or appropriate Capstone Preparation course for concentration)	1
PUBH 6991	MPH Capstone Integration	1

Total Hours		42
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DPT/MPH

The mission of the DPT/MPH program is to prepare physical therapists as transformative leaders, capable of working alongside diverse community stakeholders to minimize injury and disease risk, promote community health, and advance health equity.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits):		
BIOS 6601	Applied Biostatistics I	3
CBHS 6610	Social and Behavioral Factors and Health	3
EHOH 6614	Occupational and Environmental Health	3
EPID 6630	Epidemiology	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12-15 credits):		12
Approved DPT Courses for MPH Electives (6-9 credits from the following courses):		
DPTR 5141	Human Growth & Development	2
DPTR 5161	Psychosocial Aspects of Care I	1
DPTR 5162	Psychosocial Aspects Care II	2
DPTR 5171	Health Promotion and Wellness I	1
DPTR 5621	Evidence Based Practice	3
DPTR 5711	Professional Development I	2
DPTR 5731	Healthcare Delivery I	1
DPTR 6712	Professional Development II	2
DPTR 6713	Professional Development III	1
DPTR 6732	Healthcare Delivery II	3
Practicum (2 credits):		
PUBH 6606	MPH Practicum	2
Capstone (2 credits):		
XXXX 6990	- concentration specific course prefix	1

PUBH 6991	MPH Capstone Integration	1
Total Hours		42

MPA/MPH

The School of Public Affairs and the Colorado School of Public Health jointly sponsor this dual-degree program, which enables you to take the core of both programs, and choose electives that simultaneously count toward both programs and that suit your career and personal goals.

Students may choose one of many MPH concentrations including: Applied Biostatistics; Epidemiology; Environmental & Occupational Health; Community & Behavioral Health; Health Systems, Management & Policy; or Maternal & Child Health; among others. Dual degree students also have the option to complete a custom concentration.

As stand-alone programs, the MPH is 42 credits and the MPA is 39 credits. Both degrees are awarded for a total of 60 credits between the two programs. The MPH program accepts up to 9 credits from MPA coursework to count towards elective credits, and the MPH accepts up to 12 MPH credits as electives.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12-15 credits)		12
MPA Courses Approved as MPH Electives (6-9 credits from the following approved courses):		
PUAD 5002	Organizational Management and Behavior	3
PUAD 5004	Economics and Public Finance	3
PUAD 5006	Public Service Leadership and Ethics	3
PUAD 5310	Principles of Policy Design	3
PUAD 5650	Security Policies, Strategies, and Operations	3
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID (or appropriate Capstone Preparation course for concentration)	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

MSW/MPH (CSU)

The MSW/MPH program is offered through Colorado State University and the Colorado School of Public Health. The MSW/MPH provides an integrated approach to preventing, addressing, and solving global health and behavioral health problems, which includes individuals' physical health conditions and the behavioral and social ecological determinants of health.

The program has a strong commitment to social justice, the elimination of health, behavioral health, and care disparities, as well as a holistic definition of community and population health and well-being. The

discipline draws on both social work and public health research, practice, and theoretical frameworks.

Our MSW/MPH Dual Degree Program is paired with a public health concentration of Global Health and Health Disparities. This concentration gives students a foundation and skill set for working with underserved populations and tackling issues of social justice and health equity locally and globally.

You will complete coursework leading to a Master's in Social Work and a Master's in Public Health for a total of 87 credits. The dual degree program is full-time and on-campus. We welcome students from a wide variety of undergraduate degree majors. The Advanced Standing dual degree program is available for applicants who have completed a BSW from an accredited program in the past seven years. We make sure you have a prescribed curricular plan to follow so you know you will meet all your degree requirements.

Curriculum

This dual degree is a set, lock-step curriculum without flexibility in course sequencing.

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
Required MPH Concentration Courses (12-15 credits)		12
MSW Courses that will count as MPH electives (6-9 credits)		9
SOWK 520	Social Welfare Policy (will transfer in as MPH elective SOWK 5200)	3
SOWK 530	Anti-Oppressive Social Work Practice (will transfer in as MPH elective SOWK 5300)	3
SOWK 633	Advanced Policy Analysis, Advocacy and Contemporary Issues (will transfer in as MPH elective)	3
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

MSW/MPH (DU)

The Master of Social Work (MSW) and Master of Public Health (MPH) dual degree is a collaboration between the University of Denver and the Colorado School of Public Health at the Anschutz Medical Campus. The fields of public health and social work share much in common. Both strive to improve health and social functioning, with public health focusing primarily on physical health trends and epidemiology and social work focusing primarily on social and emotional wellness and behavioral health. What can you do with an MSW/MPH dual degree? Medical and public health services, substance use prevention and treatment, and community and behavioral health are just a few of the options.

DU is on the quarter system. As stand-alone programs, the MPH is 42 semester credits and the MSW is 90 quarter credits. With the MSW/MPH

dual program, students will complete 75 quarter credits at DU and 31 semester credits at ColoradoSPH. The MPH program will accept up to 12 quarter credits (equivalent to 9 semester credits) towards the elective credits that are required for the MPH degree.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12 credits)		12
Electives (9 credits from approved MSW Courses listed below)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
PUBH 6615	Public Health & Social Work Integrative Seminar	2
Total Hours		42

MSW Courses Approved as MPH Electives

Code	Title	Hours
For Two-Year MSW students:		
SOWK 4006	Human Behavior and the Social Environment	3 quarter credits (2 semester)
SOWK 4020	Integrated SW Practice for Social Justice	4 quarter credits (2.67 semester)
SOWK 4120	Social Policy Analysis, Advocacy and Practice	3 quarter credits (2 semester)
SOWK 4132	Power, Privilege and Oppression	3 quarter credits (2 semester)
SOWK 4201	Evidence for Practice	3 quarter credits (2 semester)
SOWK 4325	Evolving Perspectives and Trends in Health and Wellness	3 quarter credits (2 semester)

SOWK 4900	Methods for Evaluating Practice/Programs	3 quarter credits (2 semester)
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For Advanced Standing MSW Students:

SOWK 4132	Power, Privilege, and Oppression	3 quarter credits (2 semester)
SOWK 4201	Evidence for Practice	3 quarter credits (2 semester)
SOWK 4325	Evolving Perspectives and Trends in Health and Wellness	3 quarter credits (2 semester)
SOWK 4370	Community and Organizational Change	3 quarter credits (2 semester)
SOWK 4670	Policy Development and Analysis	3 quarter credits (2 semester)
SOWK 4760	Resource Development and Fundraising	3 quarter credits (2 semester)
SOWK 4723	Social Work Practice in Health	3 quarter credits (2 semester)
SOWK 4752	Trauma Assessment & Intervention	3 quarter credits (2 semester)
SOWK 4790	Human Sexuality	3 quarter credits (2 semester)
SOWK 4900	Methods for Evaluating Practice/Programs	3 quarter credits (2 semester)

MURP/MPH

Promote health by improving the places where people live, work, and play with a Master of Urban and Regional Planning (MURP) from CU Denver's College of Architecture and Planning and a Master of Public Health (MPH) from the Colorado School of Public Health at the CU Anschutz Medical Campus. To join this program, you must apply to each master's program separately, gain admission to each program, and then apply for the dual degree.

Students in this dual degree program may earn both degrees upon completion of 69 credits (33 in the MPH program and 36 in the MURP program). Students may choose one of many MPH concentrations including: Applied Biostatistics; Epidemiology; Environmental & Occupational Health; Community & Behavioral Health; Health Systems, Management & Policy; or Maternal & Child Health; among others. Dual degree students also have the option to complete a custom concentration.

As stand-alone programs, the MPH is 42 credits and the MURP is 54 credits. Both degrees are awarded for a total of 69 credits between the two programs. The MPH program accepts up to 9 credits of MURP coursework to count towards elective credits, and the MURP degree accepts 18 credits from the MPH towards elective credits.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
BIOS 6601	Applied Biostatistics I	3
EPID 6630	Epidemiology	3
EHOH 6614	Occupational and Environmental Health	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12-15 credits)		12
MURP Courses Approved as MPH Electives (6-9 credits from the approved list below)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID (or appropriate Capstone Preparation course for concentration)	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

MURP Courses Approved as MPH Electives

Code	Title	Hours
URPL 6200	Land Development Regulations	3
URPL 6205	Plan Making	3
URPL 6250	GIS for Urban Planning	3
URPL 6260	Advanced Geo-Spatial Methods	3
URPL 6365	Parks and Public Spaces	3
URPL 6399	Sustainable Urban Infrastructure	3
URPL 6400	Community Development	3
URPL 6405	Affordable Housing Workshop	3
URPL 6500	Environmental Planning/Management	3
URPL 6555	Transportation, Land Use, and the Environment	3

URPL 6600	Regional Growth and Equity	3
URPL 6615	Small Town, Rural, and Tourism Planning	3
URPL 6645	Disaster/ClimateChangePlanning	3
URPL 6650	International Development Planning: Theory and Practice	3

BA/BS & MPH (CU)

The College of Liberal Arts and Sciences (CLAS) and the Colorado School of Public Health (CSPH) together created the undergraduate Public Health program. There are two-degree undergraduate program options for Public Health the Bachelor of Arts (BA) and the Bachelor of Science (BS) at CU-Denver.

This 5-year degree program combines the Bachelors of Art/ Bachelor of Science (BA/BS) of Public Health (PBHL) and the Master of Public Health (MPH). These degrees are offered, respectively, at the University of Colorado Denver by the Department of Health and Behavioral Sciences in the College of Liberal Arts and Sciences on the downtown campus, and the Colorado School of Public Health, a joint venture of the University of Colorado, Colorado State University and the University of Northern Colorado. The free-standing PBHL is composed of 120 credits of coursework (43 specific to the BA and 73 specific to the BS, with the remainder being part of the larger requirements for a Bachelor's degree). The free-standing MPH program is 42 credit hours and typically completed in 2 years.

The time and credit savings (i.e., 21 credits that would not have to be taken in a 6th year) is achieved as follows: 9 credits from the MPH Core will count toward the PBHL Core major requirements (where the PBHL core is identical for BA and BS students) and students are expected to take 6 credits in each of two summers. Students in the dual degree program may earn both degrees upon completion of 153 credit hours, that is, 9 credits fewer than if each degree was completed independently (120 + 42 = 162).

Curriculum

Code	Title	Hours
Required MPH Public Health Courses (17 credits)		
BIOS 6601	Applied Biostatistics I (replaces MATH 4830/5830 Applied Statistics for the BA/BS)	3
EPID 6630	Epidemiology (replaces PBHL 3001 Introduction to Epidemiology for the BA/BS)	3
EHOH 6614	Occupational and Environmental Health (replaces PBHL 3020 Introduction to Environmental Health for BA/BS)	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6601	Introduction to HSMP	3
PUBH 6600	Foundations in Public Health	2
Required MPH Concentration Courses (12 credits)		12
Required MPH Electives (9 credits)		9
Practicum (2 credits)		
PUBH 6606	MPH Practicum	2
Capstone (2 credits)		
EPID 6990	MPH Capstone Preparation - EPID (or appropriate Capstone Preparation course for concentration)	1
PUBH 6991	MPH Capstone Integration	1
Total Hours		42

BA/BS & MPH (CSU)

This BS/MPH 4 +1 program combines the Colorado State University (CSU) Bachelor of Science (B.S.) programs in Biomedical Sciences (environmental public health concentration), Nutrition and Food Science (dietetics concentration), Human Development and Family Studies, Health and Exercise Science (sports medicine and health promotion concentration), Psychology and Biological Sciences (biological sciences or zoology concentrations) at Colorado State University with the Masters of Public Health (MPH) in the Colorado School of Public Health (ColoradoSPH) at the CSU campus. The free-standing B.S. is composed of 120 semester credits of coursework and the MPH requires 42 semester credits. Students in the BS/MPH 4 +1 program may earn both degrees upon completion of a total of 151 semester credits. Each degree accepts credits earned in the other degree program. The B.S. accepts 8 semester credit hours of MPH coursework, and the MPH accepts 11 graduate MPH required credit hours of coursework taken while the student is in the B.S. program.

For the first two years of admissions, BS/MPH 4 + 1 students may apply to any of the concentrations offered by the ColoradoSPH at the CSU campus. Due to logistics with undergraduate advising the addition of concentrations at the partner campuses will be considered at a later date after advising and enrollment processes have been worked out. However, since MPH students may change their campus one time after matriculating, they can go through the process of requesting to switch to a partner campus concentration once matriculated as an MPH student.

The undergraduate degrees listed above all provide a strong basis for students interested in the field of public health. The MPH is the primary professional degree in the field of public health. It prepares students for a variety of public health careers, including: epidemiology, statistical and health services research, health education, environmental health science, occupational health, health policy, health promotion, community health and administration of public health programs. MPH graduates find work in research settings, health care settings, industry, government health agencies, community-based organizations and foundations. The MPH will enhance the undergraduate degrees listed above and allow students more opportunities in the fields of public health.

MPH Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required MPH Concentration Courses (12-15 credits)		12-15
Required MPH Electives (6-9 credits)		6-9
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

BS in Biomedical Sciences: Concentration in Environmental Public Health

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health ((will apply to BS requirements as RRM 310 Food Service Systems-Operations)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements as RRM 311 Food Service Systems-Prod & Purchase)	3
PBHC 5160	Public Health Foundations (will apply to BS requirements as FSHN Elective)	2

BS in Nutrition and Food Science: Concentration in Dietetics

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health (will apply to BS requirements as RRM 310 Food Service Systems-Operations)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements as RRM 311 Food Service Systems-Prod & Purchase)	3
PBHC 5160	Public Health Foundations (will apply to BS requirements as FSHN Elective)	2

BS in Human Development and Family Studies

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health (will apply to BS requirements as Elective or Concentration Course)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements as Elective or Concentration Course)	3
PBHC 5160	Public Health Foundations (will apply to BS requirements as Elective)	2
Approved MPH Elective (will apply to BS requirements as Elective or Concentration Course)		3

BS in Health and Exercise Science: Concentration in Sports Medicine or Health Promotion

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health (will apply to BS requirements as Elective)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements for HES 345 Population Health and Disease Prevention)	3
PBHC 5160	Public Health Foundations (will apply to BS requirements as Elective)	2
Approved MPH Elective (will apply to BS requirements as Elective)		3

BS in Psychology

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health (will apply to BS requirements as STAT 301 Introduction to Statistical Methods or STAT 307 Introduction to Biostatistics)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements as Elective)	3

PBHC 5160	Public Health Foundations (will apply to BS requirements as Elective)	2
PSCY 5150	Women's Health (MPH Elective - will apply to BS requirements as PSY 515 or PSY 517)	3
or PSCY 5170	Perspectives in Global Health	

BS in Biological Sciences/Zoology

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health (will apply to BS requirements as upper division Zoology credit)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements as upper division Zoology credit)	3
PBHC 5160	Public Health Foundations (will apply to BS requirements as upper division Zoology credit)	2
Approved MPH Elective (will apply to BS requirements as Elective)		3

BS in Biological Sciences

Code	Title	Hours
PBHC 5600	Quantitative Methods in Public Health (will apply to BS requirements as Pre-Health Biology selected course in approved field or content area of study)	3
PBHC 5700	Epidemiology for Public Health (will apply to BS requirements as Pre-Health Biology selected course in approved field or content area of study)	3
PBHC 5160	Public Health Foundations (will apply to BS requirements as Pre-Health Biology selected course in approved field or content area of study)	2
Approved MPH Elective (will apply to BS requirements as Elective)		3

DVM/MPH (CSU)

Veterinarians area unique national resource, as they are the only health professionals trained in multi-species comparative medicine. With a public health perspective, address relationships among food production, disease control and the public's health.

The CSU College of Veterinary Medicine and Biomedical Sciences (CVMBBS) and the Colorado School of Public Health (ColoradoSPH) have created a combined 5-year program of study that can result in earning both the Master of Public Health (MPH) degree and Doctor of Veterinary Medicine (DVM) degree. Successful applicants will matriculate in the MPH Program during the first year of the combined program and will complete approximately 30 of the required 42 semester credit hours of core and elective courses in three or four semesters, including summer. The summer term before the start of the DVM Program will include the practicum and Capstone Project. Upon successful completion of the first year of the MPH program, students will earn a position in the first year of the DVM program. During the first two years of the DVM program students will be able to take up 12 credits of DVM coursework that can transfer in to the MPH program to complete the 42 credit requirement. Only DVM courses where the student received a B or better can be transferred in. The total number of credits that are transferrable from the DVM program to the MPH program may vary slightly depending on which campus the student selects for the home campus for the MPH degree program. Additionally, some of the MPH coursework can be completed in the summer before fall enrollment in the MPH program which can help to reduce the higher course load of the first two semesters of the MPH degree program. Students will complete the remaining requirements of

the MPH program with coursework included in the first two years of the DVM program.

Students are allowed to apply up to 12 credits (dependent on MPH concentration) of approved DVM coursework towards the MPH degree.

Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
PBHC 5160	Public Health Foundations	2
PBHC 5500	Social and Community Health	3
PBHC 5300	Environmental Public Health and Policy	3
PBHC 5200	Healthcare Systems, Policy and Management	3
PBHC 5700	Epidemiology for Public Health	3
PBHC 5600	Quantitative Methods in Public Health	3
Required MPH Concentration Courses (12-15 credits)		12-15
DVM Courses Approved as MPH Concentration or Elective Courses (6-9 credits from the following courses):		6-9
VM 637	Veterinary Bacteriology and Mycology	2
VM 638	Veterinary Parasitology	2
VM 639	Veterinary Virology	2
VM 648	Food Animal Production and Food Safety	2
VM 707	Emerging Issues in Animal Health	1
VM 714	Veterinary Preventive Medicine	4
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

MPH/MBA (CSU)

The MPH/MBA dual degree program is ideal for students who wish to work in leadership roles within the public health sector, to impact public health through corporations, or who wish to start their own organizations or businesses. Students will gain breadth and depth in understanding the community context of public health as well as public health best practices, and also gain critical skills in business strategy and management.

The MPH/MBA dual degree program objectives are to graduate ethical and professional master's level business and public health workers who are able to practice in a variety of settings, working toward the goal of improving the public's health.

Curriculum

Code	Title	Hours
Required Public Health Courses (17 credits)		
PUBH 6600	Foundations in Public Health	2
or PBHC 5160	Public Health Foundations	
BIOS 6601	Applied Biostatistics I	3
or PBHC 5600	Quantitative Methods in Public Health	
EHOH 6614	Occupational and Environmental Health	3
or PBHC 5300	Environmental Public Health and Policy	
CBHS 6610	Social and Behavioral Factors and Health	3
or PBHC 5500	Social and Community Health	

EPID 6630	Epidemiology	3
or PBHC 5700	Epidemiology for Public Health	
HSMP 6601	Introduction to HSMP	3
or PBHC 5200	Healthcare Systems, Policy and Management	
Required MPH Concentration Courses (12-15 credits)		15
MBA Courses Approved as MPH Electives (6 credits)		
BUS 500	Foundations for Business Impact	2
BUS 620	Leadership and Teams	2
BUS 626	Managing Human Capital	2
Practicum (2 credits)		
PBHC 6860	CSU Public Health Practicum	2
Capstone (2 credits)		
PBHC 6980	MPH Capstone - CSU	2
Total Hours		42

BA/BS & MPH (UNC)

The BS/MPH 4+1 program combines the University of Northern Colorado (UNC) Bachelor of Science (B.S.) programs in Health Sciences and Anthropology at UNC with the Masters of Public Health (MPH) in the Colorado School of Public Health (ColoradoSPH) at the UNC Campus. The free-standing B.S. is composed of 120 credits of coursework and the MPH requires 42 semester credits. Students in the BS/MPH 4+1 program may earn both degrees upon completion of a total of 153 semester credits. The B.S. accepts 9 semester credit hours of MPH coursework and the MPH accepts 9 graduate MPH required credit hours of coursework taken while the student is in the B.S. program.

The undergraduate degrees listed above both provide a strong basis for students interested in the field of public health. MPH graduates find work in research settings, health care settings, industry, government health agencies, community-based organizations and foundations. The MPH will enhance the undergraduate degrees listed above and allow students more opportunities in the fields of public health.

MPH Curriculum

Code	Title	Hours
Required Public Health Core Courses (17 credits)		
CHBH 5200	UNC Foundations in Public Health	2
CHBH 5090	Behavior Change Theories	3
CHBH 5500	Environmental Health	3
CHBH 6120	Statistical Applications in Public Health	3
CHBH 6200	UNC Epidemiology	3
CHBH 6350	Policy, Advocacy, Leadership & Management in Community Health	3
Required MPH Community Health Education Concentration Courses (12 credits)		
CHBH 5300	Strategies for Community Health Promotion	3
CHBH 5350	Effective Community Health Engagement	3
CHBH 6100	Program Planning and Evaluation	3
CHBH 6150	Methods in Public Health Research and Evaluation	3
Required MPH Electives (9 credits)		9
Practicum (2 credits)		
CHBH 6930	Master of Public Health Practicum	2
Capstone (2 credits)		

CHBH 6860	Master of Public Health Capstone Project	2
Total Hours		42

B.S. in Health Sciences

Code	Title	Hours
MPH Courses that will Count for Both the B.S. and MPH (9 credits)		
CHBH 5090	Behavior Change Theories	3
CHBH 5300	Strategies for Community Health Promotion	3
CHBH 5350	Effective Community Health Engagement	3

B.S. in Anthropology

Code	Title	Hours
MPH Courses that will Count for Both the B.S. and MPH (9 credits)		
CHBH 5090	Behavior Change Theories	3
CHBH 5300	Strategies for Community Health Promotion	3
CHBH 5350	Effective Community Health Engagement	3

Public Health: Doctor of Philosophy (PhD) Programs

Overview

We offer advanced research and training opportunities to future public health scientists through our Doctor of Philosophy (PhD) program, offered at our CU Anschutz Medical Campus location.

If accepted into our PhD program, you may receive tuition assistance and a stipend, depending on your concentration and availability of funds. While you're in the program, you'll work directly with a faculty research mentor to develop a greater understanding of the research process and methods that will allow you to find the answers to your public health questions. Our students also have the administrative support of the University of Colorado Denver Graduate School staff to navigate the curriculum and requirements. When you graduate, you'll be ready for the next step in your career as an independent scientist.

PhD Programs

- Biostatistics (PhD) (p. 150)
- Climate and Human Health (PhD) (p. 151)
- Epidemiology (PhD) (p. 152)
- Health Services Research (PhD) (p. 153)

Biostatistics (PhD)

Overview

This program will prepare you for advanced study and research in biostatistics. It's a great fit for students with a strong background in mathematics and statistics who are interested in working in health care and biological settings. As a student in this program, you'll function as an independent investigator or co-investigator with researchers in other areas, taking the lead in designing studies and analyses. Our faculty (<https://coloradosph.cuanschutz.edu/education/departments/biostatistics-informatics/directory/>) are studying the analysis of longitudinal data, clinical trials, statistical methods in genetics and genomics, causal modeling, treatment of missing data and imputation, image analysis, functional data analysis, and data visualization, which means you can find the mentor who's right for you.

If you have an MS in Biostatistics or a related field, this program can be completed in three to four years. Typically, you'll spend the first one to two years devoted to coursework and the later years on research and your dissertation. Research and dissertation work involves developing, comparing, and evaluating statistical methods (e.g. methods for analyzing data), typically motivated by an application in healthcare or biology.

Curriculum

Code	Title	Hours
Required MS Biostatistics Courses (20 credits)		
BIOS 6618	Advanced Biostatistical Methods I	4
BIOS 6619	Advanced Biostatistical Methods II	4
BIOS 6621	Statistical Consulting	2
BIOS 6624	Advanced Statistical Methods and Analysis	4
BIOS 6631	Statistical Theory I	4
BIOS 6632	Statistical Theory II	4
BIOS 6643	Analysis of Longitudinal Data	3
Required Public Health Courses (6 credits)		
PUBH 6600	Foundations in Public Health	2
EHOH 6601	Public Health Concepts for Non-MPH	1
EPID 6630	Epidemiology	3
MS Elective Courses (6 credits from the following courses):		
BIOS 6641	Causal Inference	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6646	Survival Analysis	3
BIOS 6655	Statistical Methods for Genetic Association Studies	3
Required PhD Biostatistics Courses (6 credits)		
BIOS 7731	Advanced Mathematical Statistics I	3
BIOS 7732	Theory/Algorithms Data Science	3
PhD Electives (9 credits from the following courses):		
BIOS 7659	Statistical Methods in Genomics	3
BIOS 7719	Information Visualization	3
BIOS 7722	Model Selection	2
BIOS 7747	Machine Learning for Biomedical Applications	3
Elective Health Sciences Courses (3 credits)		3
Dissertation (30 credits)		

BIOS 8990	Doctoral Thesis	1-10
Total Hours		85

Climate and Human Health (PhD)

Overview

The PhD in Climate and Human Health is designed to develop research and educational leaders who have transdisciplinary skills in data analytics, policy and regulation, implementation science, health equity, and community and workforce-based research with an emphasis on vulnerable populations and communities. "Climate" is interpreted broadly and can include heat and temperature, extreme weather events, wildfires, air quality, water systems, emerging hazardous exposures from "green" industries, and alterations to ecosystems with direct impacts on vector-borne and other infectious diseases.

"Health" is interpreted as both physical and mental health of all populations, especially vulnerable human populations. Graduates will have a strong knowledge base in the climate health sciences, research skills, education and mentorship skills, and leadership, communication and management training.

Curriculum

Core Courses

Code	Title	Hours
EHOH 6617	Environmental & Occupational Epidemiology	3
EHOH 6635	Climate Change and Health	3
EHOH 7401	Climate Change and Worker Health	3
BIOS 6611	Biostatistical Methods I	3
Analytic Methods in Climate Health		6
EPID 7605	Research Methods with Secondary Data Sources	3
EHOH 7631	Advanced Methods in Environmental & Occupational Health	3
EPID 7912	Developing a Research Grant	3
EHOH 7405	Advanced Communication Skills for Public Health Impact	3
CLSC 7150	Ethics and Responsible Conduct of Research	1
Electives		12
Total Hours		43

Dissertation Credits

Code	Title	Hours
Take 30 total credits:		
EHOH 8990	Doctoral Thesis	1-10

Epidemiology (PhD)

Overview

In this program, you'll gain advanced skills in analytical methods, biostatistics, and field research methods. In addition, you'll learn about grant writing and research ethics and have the opportunity to select a minor course of study. Our department has a strong base of funded research projects providing students with many opportunities for research support and data for dissertation projects. Our faculty (<https://coloradosph.cuanschutz.edu/education/departments/epidemiology/directory/>) are studying everything from food safety, to diabetes, to gene-environment interactions, which means you can find the mentor who's right for you.

In this program, you'll take courses in epidemiology, biostatistics, research methods, analytical methods, and research ethics. You'll also complete a dissertation based on work completed under the supervision of one of our world-class researchers.

Curriculum

Code	Title	Hours
Required Epidemiology Courses (6 credits)		
EPID 7631	Advanced Epidemiology 1	3
EPID 7632	Advanced Epidemiology 2	3
Required Biostatistics Courses (6 credits)		
BIOS 6611	Biostatistical Methods I	3
BIOS 6612	Biostatistical Methods II	3
Required Research Methods Courses (13 credits)		
EPID 7605	Research Methods with Secondary Data Sources	3
EPID 7911	Epidemiologic Field Methods (3 credits)	1-4
EPID 7912	Developing a Research Grant	3
4 credits of advanced analytic coursework in biostatistics or epidemiologic methods from the ColoradoSPH		4
Required Ethics Course (1 credit)		
CLSC 7150	Ethics and Responsible Conduct of Research	1
Biomedical Sciences Electives (6 credits)		6
Electives (6 credits)		6
Dissertation (30 credits)		
EPID 8990	Doctoral Thesis	1-10
Total Hours		68

Health Services Research (PhD)

Overview

In this program, you'll study how the interplay of social factors, health technologies, and personal behaviors impact healthcare access, healthcare costs, and quality of life. You'll be trained to think like a scientist, implementing and developing research studies that assess predictors of disease and the effectiveness of interventions. Our faculty (<https://coloradosph.cuanschutz.edu/education/departments/health-systems-management-policy/directory/>) are studying everything from disaster preparedness to health insurance to financing hospitals, which means you can find the mentor who's right for you.

In this program, you'll take courses in biostatistics, research methodologies, study design, healthcare economics and policy, epidemiology, and clinical outcomes assessment. You'll also complete a dissertation based on work completed under the supervision of one of our world-class researchers.

Curriculum

Code	Title	Hours
Required Health Systems, Management & Policy Courses (14 credits)		
HSMP 6604	Health Care Economics	3
HSMP 7010	Foundations in Health Services Research (Fall and Spring semesters -1 credit per semester)	2
HSMP 7601	Research Design and Proposal Preparation	3
HSMP 7607	Methods in Health Services Research I	3
HSMP 7609	Methods in Health Services Research II	3
Health Systems Management Policy Elective (3 credits)		3
Required Biostatistics Courses (6 credits)		
BIOS 6611	Biostatistical Methods I	3
BIOS 6680	Data Management Using SAS	3
Required Clinical Sciences Courses (7 credits)		
CLSC 6210	Research Seminars in Clinical Science	1
CLSC 6270	Critical Appraisal Seminars in Clinical Science	1
CLSC 7101	Grant Writing I	1
CLSC 7150	Ethics and Responsible Conduct of Research	1
CLSC 7202	Clinical Outcomes and Applications	2
Required Public Health Courses (6 credits)		
PUBH 6600	Foundations in Public Health	2
EHOH 6601	Public Health Concepts for Non-MPH	1
EPID 6630	Epidemiology	3
Required Cognate Courses (6 credits)		6
Dissertation (30 credits)		
HSMP 8990	Doctoral Thesis - Health Systems Management and Policy	1-10
Total Hours		71

Public Health: Doctor of Public Health (DrPH)

Overview

The Doctor of Public Health (DrPH) program is a professional doctoral-level program designed to develop public health leaders: researchers, policy-makers, and practitioners who are able to address complex public health issues. As a DrPH student, you'll combine sophisticated analytic and research skills with a broad understanding of the environmental, political, social, medical, ethical, and economic factors that contribute to health and well-being.

Our students are trained in leadership, management, and advocacy. As part of the DrPH program, you'll develop strong research and practice skills in a main focus area of public health.

Community & Behavioral Health

This program is designed to help you become a public health leader. You'll learn how to develop, implement, and evaluate evidence-based programs that contribute to community health and wellness. In addition to taking courses that cover research methods and advanced public health theory and practice, you'll also learn about leadership, management, and grant writing. Areas of specialization include (but are not limited to): community-based participatory research, health equity, program design and evaluation, American Indian and Alaska Native health, mHealth strategies, and mental health. Faculty in our department study everything from adverse childhood experiences to nutrition to school-based interventions, which means you can find the faculty mentor (<https://coloradosph.cuanschutz.edu/education/departments/community-behavioral-health/directory/>) who's right for you.

Upon entering the DrPH program, students will have three years to pass the written qualifying exam and should complete the dissertation and public defense of the dissertation within seven years of entering the program.

Each student, in consultation with their faculty advisor, will develop a proposed course of study. The course of study must specify courses to be taken, and proposed timeline for courses, practicum, preliminary and comprehensive exams, and dissertation.

Curriculum

Code	Title	Hours
Required DrPH Courses (16 credits)		
PUBH 6842	DrPH Seminar (1 credit hour semesters, first 4 semesters of tenure)	4
CBHS 7020	DrPH Seminar in Leadership	3
EPID 7912	Developing a Research Grant	3
HSMP 7603	Advanced Public Health Strategic Planning and Management: Theory and Practice	3
EHOH 7405	Advanced Communication Skills for Public Health Impact	3
Required Community & Behavioral Health Courses (12 credits)		
CBHS 7010	Latent Variable Methods	3
CBHS 7637	Doctoral Advanced Quantitative Analysis for Community Health Sciences	3
CBHS 7638	Advanced Qualitative Research Methods	3
CBHS 7670	CBH Advanced Seminar	3

Selective Courses (12 credits - at least 5 credits are required to be at the doctoral level)			12
Directed Reading (2 credits)			
CBHS 7030	DrPH Directed Reading		1-2
DrPH Practicum (4 credits)			
PUBH 6850	DrPH Practicum		2-4
Dissertation (9 credits)			
CBHS 8991	DrPH Dissertation - Community & Behavioral Health		1-10
Total Hours			55

Environmental & Occupational Health

This program is designed to help you become a public health leader. As a student in this program, you'll learn how to identify, evaluate, and control environmental and occupational stressors. You'll take courses in field investigations, Geographic Information Systems, biostatistics, leadership and management, and proposal writing. In addition to required coursework, you can focus your electives on an area of specialization such as environmental justice, toxicology, risk assessment, climate and health, and occupational health and safety. This broad range of topics means you can find the area of study and faculty mentor (<https://coloradosph.cuanschutz.edu/education/departments/environmental-occupational-health/directory/>) that's right for you.

Upon entering the DrPH program, students will have three years to pass the written qualifying exam and should complete the dissertation and public defense of the dissertation within seven years of entering the program.

Each student, in consultation with their faculty advisor, will develop a proposed course of study. The course of study must specify courses to be taken, and proposed timeline for courses, practicum, preliminary and comprehensive exams, and dissertation.

Curriculum

Code	Title	Hours
Required DrPH Courses (13 credits)		
PUBH 6842	DrPH Seminar (1 credit hour semesters, first 4 semesters of tenure)	4
CBHS 7020	DrPH Seminar in Leadership	3
EPID 7912	Developing a Research Grant	3
HSMP 7603	Advanced Public Health Strategic Planning and Management: Theory and Practice	3
EHOH 7405	Advanced Communication Skills for Public Health Impact	3
Required Environmental & Occupational Health Courses (12 credits)		
EHOH 7631	Advanced Methods in Environmental &Occupational Health	3
EHOH 7632	Advanced Field Methods in EOH	1
EHOH 7403	Research Methods: Climate, Disaster and Humanitarian Perspectives	3
BIOS 6611	Biostatistical Methods I	3
BIOS 6612	Biostatistical Methods II	3
Selective Courses (11 credits)		11
Directed Reading (2 credits)		
EHOH 7030	DrPH Directed Reading	1-2
DrPH Practicum (4 credits)		

PUBH 6850	DrPH Practicum	2-4
Dissertation (9 credits)		
EHOH 8991	DrPH Dissertation-Environmental & Occupational Health	1-10
Total Hours		55

Epidemiology

This program is designed to help you become a public health leader. In this program, you'll learn how to identify factors that affect the health of populations and how to create, implement, and evaluate disease control and prevention strategies. In addition to taking courses in advanced research methods and a minor area of your choosing, you'll also learn about leadership, management, and grant writing. Areas of specialization range from health data and information systems to chronic disease prevention. And our faculty (<https://coloradosph.cuanschutz.edu/education/departments/epidemiology/directory/>) are studying everything from food safety, to diabetes, to gene-environment interactions, which means you can find the mentor who's right for you.

Upon entering the DrPH program, students will have three years to pass the written qualifying exam and should complete the dissertation and public defense of the dissertation within seven years of entering the program.

Each student, in consultation with their faculty advisor, will develop a proposed course of study. The course of study must specify courses to be taken, and proposed timeline for courses, practicum, preliminary and comprehensive exams, and dissertation.

Curriculum

Code	Title	Hours
Required DrPH Courses (13 credits)		
PUBH 6842	DrPH Seminar (1 credit hour semesters, first 4 semesters of tenure)	4
CBHS 7020	DrPH Seminar in Leadership	3
EPID 7912	Developing a Research Grant	3
HSMP 7603	Advanced Public Health Strategic Planning and Management: Theory and Practice	3
EHOH 7405	Advanced Communication Skills for Public Health Impact	3
Required Epidemiology Courses (12 credits)		
EPID 7631	Advanced Epidemiology 1	3
EPID 7632	Advanced Epidemiology 2	3
EPID 7605	Research Methods with Secondary Data Sources	3
BIOS 6611	Biostatistical Methods I	3
BIOS 6612	Biostatistical Methods II	3
Selective Courses (9 credits)		9
Directed Reading (2 credits)		
EPID 7030	DrPH Directed Reading	1-2
DrPH Practicum (4 credits)		
PUBH 6850	DrPH Practicum	2-4
Dissertation (9 credits)		
EPID 8991	DrPH Dissertation work in Epidemiology	1-10
Total Hours		55

Public Health: Master of Science (MS)

Overview

We offer the Master of Science (MS) degree at our CU Anschutz Medical Campus location, a leading health sciences campus, where you can take your research and analysis skills to the next level. The MS program focuses on diving deeply into the science of your chosen area of public health. This 36-43 credit hour program is designed to be completed in two to three years. As part of your degree, you'll complete a thesis, so you'll get practical experience with scientific thinking and processes that can help propel your career.

Programs

The following Master of Science programs are available through the Colorado School of Public Health:

- Biostatistics (MS) (p. 157)
- Epidemiology (MS) (p. 158)

Biostatistics (MS)

Overview

This program emphasizes the applied and theoretical nature of biostatistics. In addition to courses in theory, statistical computing, consulting, analysis of clinical trials, and longitudinal and survival data, you'll be exposed to a wide variety of research areas including statistical genetics and genomics, causal inference, infectious disease, and cancer research. During the program, you'll get involved in research with a faculty mentor as part of your thesis or research paper. You'll also have the opportunity to specialize in one of two minor areas within the MS—Statistical Genomics and Data Science Analytics.

This program will prepare you for in-depth study and research in statistics as it applies to healthcare and biological settings. You'll get a balance between theory, methods, and hands-on practical and research experience. Our required courses include applied and theoretical statistics, statistical computing, consulting, and advanced statistical modeling. Plus, you can choose elective coursework ranging from analysis of clinical trials to survival analysis to statistical 'omics. You'll also complete a Master's research paper or thesis.

In addition, we offer two minor areas of specialization within the MS—Statistical Genomics and Data Science Analytics. We recommend planning out the minor in your first year to ensure timely graduation and availability of electives.

Curriculum

Code	Title	Hours
Required Biostatistics MS Courses (20 credits)		
BIOS 6618	Advanced Biostatistical Methods I	4
BIOS 6619	Advanced Biostatistical Methods II	4
BIOS 6621	Statistical Consulting	2
BIOS 6624	Advanced Statistical Methods and Analysis	4
BIOS 6631	Statistical Theory I	4
BIOS 6632	Statistical Theory II	4
BIOS 6643	Analysis of Longitudinal Data	3
Required Public Health Courses (6 credits)		
PUBH 6600	Foundations in Public Health	2
EHOH 6601	Public Health Concepts for Non-MPH	1
EPID 6630	Epidemiology	3
Electives (6 credits from the following courses):		6
BIOS 6641	Causal Inference	3
BIOS 6642	Introduction to Python Programming	3
BIOS 6646	Survival Analysis	3
BIOS 6655	Statistical Methods for Genetic Association Studies	3
MS Thesis or MS Research Paper (4 credits)		4
BIOS 6651	BIOS MS Research Paper	1-6
or BIOS 6950	Masters Thesis: Biostatistics	
Total Hours		41

Epidemiology (MS)

Overview

In this program, you'll learn about the causes, distribution, and control of diseases in populations, with an emphasis on methodology. In epidemiology, we're passionate about providing the scientific evidence that can save lives. And as a student in the department, you'll have access to faculty with a wide range of expertise—from food safety, to diabetes, to gene-environment interactions, we do it all.

In this 38-credit program, you'll take courses in epidemiology, biostatistics, research ethics and methods, and specific epidemiological topics. You'll also complete a 4-credit Master's research paper or Master's thesis based on work you'll do in collaboration with our world-class researchers.

Curriculum

Code	Title	Hours
Required Epidemiology Courses (12 credits)		
EPID 6626	Research Methods in Epidemiology	3
EPID 6630	Epidemiology	3
EPID 6631	Analytical Epidemiology	3
EPID 7631	Advanced Epidemiology 1	3
Required Biostatistics Courses (9 credits)		
BIOS 6611	Biostatistical Methods I	3
BIOS 6612	Biostatistical Methods II	3
BIOS 6680	Data Management Using SAS (OR)	3
EPID 6605 & EPID 6607	Introduction to R for Health Sciences and Data Management with R	
Required Public Health Courses (3 credits)		
PUBH 6600	Foundations in Public Health	2
EHOH 6601	Public Health Concepts for Non-MPH	1
Topic-Based Epidemiology Courses (7 credits from the following courses):		
EPID 6624	Public Health Surveillance	2
EPID 6629	Clinical Epidemiology	2
EPID 6634	Applied Global Health Epidemiology	2
EPID 6635	Infectious Disease Epidemiology	2
EPID 6636	Chronic Disease Epidemiology	3
EPID 6637	Injury and Violence Epidemiology and Prevention	2
EPID 6640	Investigation of Disease Outbreaks	2
EPID 6641	Epidemiology of Foodborne and Diarrheal Diseases	2
EPID 6642	Genetics in Public Health	2
EPID 6643	Epidemiology and Prevention of TB/HIV/STDs	2
EPID 6644	Maternal Child Health Epidemiology	3
EPID 6646	Methods for Conducting Systemic Review and Meta-Analysis	2
EPID 7605	Research Methods with Secondary Data Sources	3
EPID 7615	Pharmacoepidemiology	2
Required Ethic in Research Course (1 credit)		
CLSC 7150	Ethics and Responsible Conduct of Research	1
Electives (2 credits)		2
MS Thesis or MS Research Paper (4 credits)		4
EPID 6651	EPID MS Research Paper	1-6

or EPID 6950 Masters Thesis

Total Hours**42**

Graduate Medical Education (GME) Program

Overview

The Graduate Medical Education (GME) Office is under the leadership and direction of Dr. Geoffrey Connors, Associate Dean for GME/Designated Institutional Official (DIO) for the Accreditation Council for Graduate Medical Education (ACGME) and an Associate Professor of Medicine in the Division of Pulmonary Sciences & Critical Care.

The GME Office is responsible for the oversight of the ACGME accreditation, the educational environment across all campus and hospital partners as well as payroll & benefits for the ~230 CUSOM GME Residency & Fellowship training programs.

Mission: CUSOM GME provides leadership, education, and support to ensure that the Residents and Fellows who train here continue the standards of excellence in patient care, teaching, & research that have been established by CUSOM GME training programs.

Vision: CUSOM GME will achieve the highest level of ACGME accreditation for the CUSOM institution, and Residency & Fellowship training programs.

Values:

- Clinical Excellence
- Innovation
- Service
- Leadership
- Accountability
- Transparency
- Equity
- Fairness
- Diversity
- Inclusion
- Collaboration
- Promoting Resident & Fellow Wellbeing

The GME Office implements policies which are vetted and reviewed by the Graduate Medical Education Committee (GMEC) of the School of Medicine. The ACGME charges the GMEC with responsibility for monitoring and advising on all aspects of Residency and Fellow education, including compliance with ACGME work hours, patient safety and quality improvement requirements, and maintaining a rich and collegial learning environment.

The GMEC is composed of Program Directors, GME Faculty Liaisons from the affiliated teaching hospitals & members of the housestaff themselves. GMEC reports to the Dean of the School of Medicine through the Associate Dean for GME & Senior Associate Dean for Education. The GME website is: <https://medschool.cuanschutz.edu/graduate-medical-education> (<https://medschool.cuanschutz.edu/graduate-medical-education/>).

Application Process

- To apply for a CUSOM GME Residency or Fellowship, applicants must meet the minimum selection criteria described in the GME Eligibility and Selection Policy, located here (https://medschool.cuanschutz.edu/docs/librariesprovider101/gme-document-librar/gme-policies-procedures/eligibilityandselection.pdf?sfvrsn=341d4cb9_4).
- Recruitment is coordinated by each training program. Inquiries & details about the process should be directed to the specific residency or fellowship. For the list of CUSOM GME Residencies and Fellowships, refer to the GME Program Directory (<https://medschool.cuanschutz.edu/graduate-medical-education/programs/>).
- Many CUSOM GME Residencies & Fellowships participate in the National Residency Matching Program (<http://www.nrmp.org/>), Electronic Residency Application System (<http://www.aamc.org/students/eras/start.htm>) and/or the San Francisco Central Application System (<https://www.sfmarch.org/>).
- All residents in GMEC approved programs are required to successfully complete the USMLE Step 1 or COMLEX Step 1 examinations, and USMLE Step 2 (CK) or COMLEX Level 2 (CE and PE) examinations, as evidenced by obtaining a passing grade for that examination, prior to starting a residency. Original transcripts must be provided 6 weeks prior to the incoming Resident's start date.
- All residents in GMEC approved programs are required to successfully complete the USMLE Step 3 examination or COMLEX Level 3 examination, as evidenced by obtaining a passing grade for that examination, prior to the mid-point of the second post-graduate year (PGY2).
- All fellows entering GMEC approved programs must have successfully completed the USMLE Step 3 examination or COMLEX Level 3 examination or the Canadian LMCC examination, as evidenced by obtaining a passing grade for that examination prior to starting a fellowship.
- **International Medical Graduates**, must meet the following criteria:
 - Have a valid **ECFMG Certificate**.
 - Residents in our program must be a U. S. citizen, lawful permanent resident, refugee, asylee, or possess the appropriate documentation to allow residents to legally train at the University of Colorado Denver School of Medicine.

- Minimum **selection criteria**.
- Any other criteria as determined by the program.

Training Programs

Contact information for CUSOM GME Residencies & Fellowships can be found at on the GME website: <https://medschool.cuanschutz.edu/graduate-medical-education/programs/program-directory> (<https://medschool.cuanschutz.edu/graduate-medical-education/programs/program-directory/>) .

Department of Anesthesiology

Department	Program Name	Type	ACGME	Non-ACGME
Anesthesiology	Adult Cardiothoracic Anesthesiology	Fellowship	X	
Anesthesiology	Advanced Fellowship in Pediatric Perioperative Quality Improvement	Instructor Fellow	X	
Anesthesiology	Anesthesiology	Residency	X	
Anesthesiology	Critical Care Medicine	Fellowship	X	
Anesthesiology	Critical Care Medicine (Emerg. Med. 2nd Yr.)	Fellowship		X
Anesthesiology	Multidisciplinary Anesthesiology	Fellowship		X
Anesthesiology	Neuroanesthesia Fellowship	Instructor Fellow	X	
Anesthesiology	Obstetric Anesthesiology	Fellowship	X	
Anesthesiology	Pediatric Anesthesiology	Fellowship	X	
Anesthesiology	Pediatric Cardiac Anesthesiology	Fellowship	X	
Anesthesiology	Perioperative Management of Liver Transplantation for Anesthesiologist Fellowshi	Instructor Fellow	X	
Anesthesiology	Regional Anesthesiology & Acute Pain Management	Instructor Fellow	X	

Department of Dermatology

Department	Program Name	Type	ACGME	Non-ACGME
Dermatology	Dermatology	Residency	X	
Dermatology	Immunodermatology	Fellowship		X
Dermatology	Mircographic Surgery and Dermatologic Oncology	Fellowship	X	
Dermatology	Pediatric Dermatology	Fellowship	X	

Department of Emergency Medicine

Please refer to the Department of Emergency Medicine Fellowship Programs website (<https://medschool.cuanschutz.edu/emergency-medicine/education/fellowships/>) for more information.

Department of Family Medicine

Department	Program Name	Type	ACGME	Non-ACGME
Family Medicine	Addiction Medicine Fellowship	Fellowship	X	
Family Medicine	Family Medicine Junior Faculty Development Fellowship	Instructor Fellow	X	
Family Medicine	Hospice and Palliative Medicine	Fellowship	X	
Family Medicine	Occupational and Environmental Medicine	Residency	X	
Family Medicine	Public Health & General Preventative Medicine	Residency	X	
Family Medicine	Sports Medicine (Family Medicine)	Fellowship	X	
Family Medicine	University Hospital Family Medicine	Residency	X	

Family Medicine	University Hospital Family Medicine Rural Training Track	Residency	X
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Department of Medicine

Department	Program Name	Type	ACGME	Non-ACGME
Medicine	Adult Congenital Heart Disease Fellowship	Fellowship	X	
Medicine	Advanced Cardiac Imaging	Fellowship		X
Medicine	Advanced Heart Failure and Transplant Cardiology	Fellowship	X	
Medicine	Advanced Interventional Cardiology	Fellowship		X
Medicine	Advanced Nephrology	Fellowship		X
Medicine	Advanced Pulmonary Fellowship in Interstitial Lung Disease	Fellowship		X
Medicine	Advanced Research Program in Infectious Diseases	Fellowship		X
Medicine	Advanced Therapeutic Endoscopy	Fellowship		X
Medicine	Allergy and Immunology-Adult	Fellowship	X	
Medicine	Allergy and Immunology-Adult Research	Fellowship		X
Medicine	Cardiology Research	Fellowship		X
Medicine	Cardiovascular Disease	Fellowship	X	
Medicine	Clinical Cardiac Electrophysiology	Fellowship	X	
Medicine	Developmental Therapeutics	Fellowship		X
Medicine	Diabetes Fellowship	Fellowship		X
Medicine	Endocrine Research	Fellowship		X
Medicine	Endocrinology, Diabetes & Metabolism	Fellowship	X	
Medicine	Gastroenterology	Fellowship	X	
Medicine	Gastrointestinal Cancer Clinical/Translational Research	Fellowship		X
Medicine	Geriatric Medicine	Fellowship	X	
Medicine	Hematology and Oncology	Fellowship	X	
Medicine	Infectious Disease	Fellowship	X	
Medicine	Inflammatory Bowel Disease (IBD)	Fellowship		X
Medicine	Internal Medicine	Residency	X	
Medicine	Internal Medicine Chiefs	Fellowship		X
Medicine	Internal Medicine/Pediatrics	Residency	X	
Medicine	Interventional Cardiology	Fellowship	X	
Medicine	Thoracic Oncology	Fellowship		X
Medicine	Nephrology	Fellowship	X	
Medicine	Obesity Medicine Fellowship	Fellowship		X
Medicine	Pulmonary Disease and Critical Care Medicine	Fellowship	X	
Medicine	Pulmonary Sciences and Critical Care Research	Fellowship		X
Medicine	Rheumatology	Fellowship	X	
Medicine	Rheumatology Research	Fellowship		X
Medicine	Sleep Medicine	Fellowship	X	
Medicine	Thyroid Oncology Fellowship Program	Fellowship		X
Medicine	Transplant Hepatology	Fellowship	X	
Medicine	Transplant Nephrology (effective 7-1-2025)	Fellowship		X
Medicine	Transplant Pulmonology	Fellowship		X
Medicine	Vascular Medicine	Fellowship		X

Department of Neurological Surgery

Department	Program Name	Type	ACGME	Non-ACGME
Neurological Surgery	Complex Spinal Surgery Fellowship	Fellowship		X
Neurological Surgery	Endovascular Neurosurgery/Neurointerventional Radiology Fellowship	Fellowship		X

Neurological Surgery	Neurological Surgery	Residency	X
Neurological Surgery	Neurological Surgery Critical Care	Fellowship	X
Neurological Surgery	Neurosurgery Stereotactic & Functional Fellowship	Fellowship	X
Neurological Surgery	Neurosurgical Oncology Fellowship	Fellowship	X
Neurological Surgery	Pediatric Neurological Surgery	Fellowship	X
Neurological Surgery	Skull Base Fellowship	Fellowship	X

Department of Neurology

Department	Program Name	Type	ACGME	Non-ACGME
Neurology	Adult Epilepsy	Fellowship	X	
Neurology	Behavioral Neurology and Neuropsychiatry	Instructor Fellow	X	
Neurology	Child Neurology	Residency	X	
Neurology	Clinical Neuromuscular Pathology Fellowship	Instructor Fellow	X	
Neurology	Headache Fellowship	Instructor Fellow	X	
Neurology	Movement Disorders	Instructor Fellow	X	
Neurology	Multiple Sclerosis	Instructor Fellow	X	
Neurology	Neuro-Infectious Diseases & Autoimmune Neurology	Instructor Fellow	X	
Neurology	Neuro-Ophthalmology	Instructor Fellow	X	
Neurology	Neurohospitalist Fellowship Program	Instructor Fellow	X	
Neurology	Neurology	Residency	X	
Neurology	Neuromuscular Medicine	Fellowship	X	
Neurology	NeuroOncology	Instructor Fellow	X	
Neurology	Pediatric Epilepsy	Fellowship	X	
Neurology	Vascular Neurology	Fellowship	X	

Department of Obstetrics and Gynecology

Department	Program Name	Type	ACGME	Non-ACGME
Obstetrics and Gynecology	Complex Family Planning	Fellowship	X	
Obstetrics and Gynecology	Gynecologic Oncology	Fellowship	X	
Obstetrics and Gynecology	Maternal-Fetal Medicine	Fellowship	X	
Obstetrics and Gynecology	Obstetrics and Gynecology	Residency	X	

Obstetrics and Gynecology	Obstetrics and Gynecology Hospitalist Fellowship	Instructor Fellow	X
Obstetrics and Gynecology	Pediatric & Adolescent Gynecology	Fellowship	X
Obstetrics and Gynecology	Reproductive Endocrinology & Infertility	Fellowship	X
Obstetrics and Gynecology	Urogynecology and Reconstructive Pelvic Surgery	Fellowship	X

Department of Ophthalmology

Department	Program Name	Type	ACGME	Non-ACGME
Ophthalmology	ASOPRS Fellowship in Oculofacial Plastic & Orbital Surgery	Instructor Fellow	X	
Ophthalmology	Cornea, External Disease and Refractive Surgery	Instructor Fellow	X	
Ophthalmology	Glaucoma Fellowship	Instructor Fellow	X	
Ophthalmology	Ophthalmology	Residency	X	
Ophthalmology	Pediatric Ophthalmology and Strabismus Fellowship	Instructor Fellow	X	
Ophthalmology	Uveitis	Instructor Fellow	X	
Ophthalmology	Vitreoretinal Diseases & Surgery Fellowship	Instructor Fellow	X	

Department of Orthopedic Surgery

Department	Program Name	Type	ACGME	Non-ACGME
Orthopedic Surgery	Adolescent and Young Adult Pelvic and Hip Preservation Surgery	Fellowship		X
Orthopedic Surgery	Hip Preservation Fellowship	Fellowship		X
Orthopedic Surgery	Orthopedic Adult Reconstruction	Instructor Fellow	X	
Orthopedic Surgery	Orthopedic Foot & Ankle Fellowship	Instructor Fellow	X	
Orthopedic Surgery	Orthopedic Hand Surgery	Fellowship	X	
Orthopedic Surgery	Orthopedic Shoulder & Elbow Fellowship	Instructor Fellow	X	
Orthopedic Surgery	Orthopedic Spinal Surgery Fellowship	Instructor Fellow	X	
Orthopedic Surgery	Orthopedic Sports Medicine	Fellowship	X	
Orthopedic Surgery	Orthopedic Sports Medicine-Steadman Hawkins Clinic-Denver	Fellowship	X	
Orthopedic Surgery	Orthopedic Surgery	Residency	X	
Orthopedic Surgery	Pediatric Orthopedic Surgery	Fellowship	X	

Department of Otolaryngology

Department	Program Name	Type	ACGME	Non-ACGME
Otolaryngology	Otolaryngology	Residency	X	
Otolaryngology	Pediatric Otolaryngology	Fellowship	X	
Otolaryngology	Facial Plastic and Reconstructive Surgery Fellowship (effective 7/1/2026)	Instructor Fellow	X	
Otolaryngology	Neurorhinology (effective 7/1/2026)	Instructor Fellow	X	
Otolaryngology	Neurotology (effective 7/1/2026)	Fellowship	X	

Department of Pathology

Department	Program Name	Type	ACGME	Non-ACGME
Pathology	Blood Banking/Transfusion Medicine	Fellowship	X	
Pathology	Cytopathology	Fellowship	X	
Pathology	Dermatopathology	Fellowship	X	
Pathology	Forensic Pathology	Fellowship	X	
Pathology	Gastrointestinal & Liver Pathology	Fellowship		X
Pathology	Hematopathology	Fellowship	X	
Pathology	Molecular Genetic Pathology	Fellowship	X	
Pathology	Pathology- Anatomic and Clinical	Residency	X	
Pathology	Pediatric Pathology	Fellowship	X	
Pathology	Surgical Pathology	Fellowship		X
Pathology	Surgical Pathology - Soft Tissue/Bone	Fellowship		X
Pathology	Surgical Pathology - Breast & Gynecological Pathology	Fellowship		X

Department of Pediatrics

Department	Program Name	Type	ACGME	Non-ACGME
Pediatrics	Adolescent Medicine	Fellowship	X	
Pediatrics	Advanced Pediatric Allergy & Immunology-CHCO	Instructor Fellow	X	
Pediatrics	Advanced Pediatric Allergy & Immunology-NJH	Fellowship		X
Pediatrics	Advanced Pediatric Cardiology	Fellowship		X
Pediatrics	Allergy and Immunology-Pediatric CHCO	Fellowship	X	
Pediatrics	Allergy and Immunology-Pediatric NJH	Fellowship	X	
Pediatrics	Bone Marrow Transplant and Cellular Therapeutics Clinical Fellowship	Fellowship		X
Pediatrics	Child Abuse Pediatrics	Fellowship	X	
Pediatrics	Clinical Biochemical Genetics	Fellowship	X	
Pediatrics	Developmental-Behavioral Pediatrics	Fellowship	X	
Pediatrics	Laboratory Genetics & Genomics	Fellowship	X	
Pediatrics	Medical Biochemical Genetics	Fellowship	X	
Pediatrics	Medical Genetics & Genomics	Residency	X	
Pediatrics	Neonatal-Perinatal Medicine	Fellowship	X	
Pediatrics	Pediatric Cardiac Intensive Care Fellowship (effective 7-1-2025)	Fellowship		X
Pediatrics	Pediatric Cardiology	Fellowship	X	
Pediatrics	Pediatric Clinical Hematology	Fellowship		X
Pediatrics	Pediatric Clinical Nutrition	Instructor Fellow		X
Pediatrics	Pediatric Critical Care Medicine	Fellowship	X	
Pediatrics	Pediatric Critical Care Medicine Research	Instructor Fellow	X	
Pediatrics	Pediatric Electrophysiology Fellowship		Instructor Fellow	Fellowship

Pediatrics	Pediatric Emergency Medicine	Fellowship	X	
Pediatrics	Pediatric Endocrinology	Fellowship	X	
Pediatrics	Pediatric Endocrinology Research	Fellowship		X
Pediatrics	Pediatric Experimental Therapeutics	Fellowship		X
Pediatrics	Pediatric Gastroenterology	Fellowship	X	
Pediatrics	Pediatric Gastroenterology Research	Fellowship		X
Pediatrics	Pediatric Heart Failure & Transplant	Instructor Fellow	X	
Pediatrics	Pediatric Hematology-Oncology	Fellowship	X	
Pediatrics	Pediatric Hematology-Oncology Research	Fellowship		X
Pediatrics	Pediatric Hospital Medicine	Fellowship	X	
Pediatrics	Pediatric Infectious Diseases	Fellowship	X	
Pediatrics	Pediatric Interventional and Congenital Cardiology	Fellowship		X
Pediatrics	Pediatric Nephrology	Fellowship	X	
Pediatrics	Pediatric Nephrology	Fellowship	X	
Pediatrics	Pediatric Neuro-Immunology	Instructor Fellow	X	
Pediatrics	Pediatric Neuro-Oncology	Instructor Fellow	X	
Pediatrics	Pediatric Precision Genetic Medicine (effective 7-1-2025)	Fellowship		X
Pediatrics	Pediatric Pulmonology Medicine	Fellowship	X	
Pediatrics	Pediatric Pulmonology Research Pathway	Fellowship		X
Pediatrics	Pediatric Rheumatology	Fellowship	X	
Pediatrics	Pediatric Transplant Hepatology	Fellowship	X	
Pediatrics	Pediatrics	Residency	X	
Pediatrics	Pediatrics/Medical Genetics & Genomics	Residency	X	

Department of Physical Medicine and Rehabilitation

Department	Program Name	Type	ACGME	Non-ACGME
Physical Medicine & Rehabilitation	Pain Medicine	Fellowship	X	
Physical Medicine & Rehabilitation	Pediatric Rehabilitation	Fellowship	X	
Physical Medicine & Rehabilitation	Pediatrics/Physical Medicine & Rehabilitation	Residency	X	
Physical Medicine & Rehabilitation	Physical Medicine and Rehabilitation	Residency	X	
Physical Medicine & Rehabilitation	Spinal Cord Injury Medicine	Fellowship	X	

Department of Psychiatry

Department	Program Name	Type	ACGME	Non-ACGME
Psychiatry	Addiction Psychiatry	Fellowship	X	
Psychiatry	Child and Adolescent Psychiatry	Fellowship	X	
Psychiatry	Consultation-Liaison Psychiatry	Fellowship	X	
Psychiatry	Forensic Psychiatry	Fellowship	X	
Psychiatry	Psychiatry	Residency	X	

Psychiatry	Reproductive Psychiatry (effective 7-1-2026)	Instructor Follow	X	
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Department of Radiation Oncology

Department	Program Name	Type	ACGME	Non-ACGME
Radiation Oncology	Radiation Oncology	Residency	X	

Department of Radiology

Department	Program Name	Type	ACGME	Non-ACGME
Radiology	Abdominal Imaging	Instructor Fellow	X	
Radiology	Breast Imaging	Instructor Fellow	X	
Radiology	Cardiothoracic Imaging	Fellowship		X
Radiology	Emergency & Trauma Radiology (effective 7/1/2025)	Fellowship		X
Radiology	Fetal-Cardiac Imaging	Fellowship		X
Radiology	Interventional Radiology (Independent)	Fellowship	X	
Radiology	Interventional Radiology (Integrated)	Residency	X	
Radiology	Musculoskeletal Imaging and Intervention	Fellowship		X
Radiology	Neuroradiology	Fellowship	X	
Radiology	Nuclear Radiology	Fellowship	X	
Radiology	Pediatric Neuroradiology Fellowship	Instructor Fellow	X	
Radiology	Pediatric Radiology	Fellowship	X	
Radiology	Radiology-Diagnostic	Residency	X	

Department of Surgery

Department	Program Name	Type	ACGME	Non-ACGME
Surgery	Breast Surgical Oncology Fellowship (effective 8/1/2027)	Instructor Fellow	X	
Surgery	Burn Fellowship	Fellowship		X
Surgery	Cardiac Transplant & Mechanical Circulatory Support (Pediatric)	Fellowship		X
Surgery	Colon & Rectal Surgery	Fellowship	X	
Surgery	Congenital Cardiac Surgery	Fellowship	X	
Surgery	Extracorporeal Membrane Oxygenation Fellowship	Fellowship		X
Surgery	Hepatopancreatobiliary International Fellowship	Fellowship		X
Surgery	Microsurgery (effective 7-1-2025)	Instructor Fellow	X	
Surgery	Minimally Invasive Surgery	Fellowship		X
Surgery	Pediatric Colorectal Surgery Fellowship	Fellowship		X
Surgery	Pediatric Surgery	Fellowship	X	
Surgery	Pediatric Surgery Research	Fellowship		X
Surgery	Pediatric Urology	Fellowship	X	
Surgery	Plastic Surgery	Fellowship	X	
Surgery	Plastic Surgery (Integrated)	Residency	X	
Surgery	Reconstructive Urology	Instructor Fellow	X	
Surgery	Surgery-General	Residency	X	
Surgery	Surgical Critical Care (Burn)	Fellowship	X	
Surgery	Surgical Critical Care-Adult	Fellowship	X	
Surgery	Surgical Critical Care-Pediatric	Fellowship	X	
Surgery	Thoracic Surgery	Fellowship	X	

Surgery	Thoracic Transplant	Fellowship	X
Surgery	Transplant Surgery	Fellowship	X
Surgery	Trauma and Acute Care	Fellowship	X
Surgery	Urology	Residency	X
Surgery	Vascular Surgery	Fellowship	X
Surgery	Vascular Surgery (Integrated)	Residency	X

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The GME Staff Directory can be found on the GME website: <https://medschool.cuanschutz.edu/graduate-medical-education/about-gme/contact>
(<https://medschool.cuanschutz.edu/graduate-medical-education/about-gme/contact/>)

Graduate School

Overview

The Graduate School at the University of Colorado Anschutz Medical Campus oversees, facilitates, and enhances graduate education, while encouraging excellence in research, creative and scholarly work. We offer master's degrees, doctoral degrees, graduate certificates, and non-degree options in a wide variety of programs. Disciplines include Biomedical Sciences, Modern Human Anatomy, Genetic Counseling, Palliative Care, Nursing, Pharmaceutical Sciences, and Public Health. The Anschutz Medical Campus (CU Anschutz) is the largest academic health center in the Rocky Mountain region. The campus combines interdisciplinary teaching, research and clinical facilities to prepare the region's future health care professionals and be a national leader in life sciences research.

Diversity, Equity, & Inclusion

The Graduate School is committed to diversity and equity in the recruitment and retention of students. We actively seek persons from underrepresented populations, which include, but are not limited to, ethnic groups underrepresented in STEM, individuals with a disability, and those students who are economically disadvantaged, from rural areas, or first-in-family college graduates.

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Courses

ANAT 6111 - Human Gross Anatomy (8 Credits)

The Human Gross Anatomy course examines the form and function of the human body at a macroscopic level. Systems-based and regional anatomy lectures are complemented by full-body cadaver dissection. Medical imaging labs provide the opportunity to learn ultrasound skills. Requirements: Must be a degree-seeking student in MS Modern Human Anatomy program. Grading Basis: Letter Grade Typically Offered: Spring.

ANAT 6205 - Imaging and Modeling (4 Credits)

This course covers major medical and scientific imaging modalities with an emphasis on 3D scientific and medical visualization. Students will also receive instruction in advanced digital image processing and 3D modeling using industry-standard software such as MATLAB and Maya. Prerequisite: Only ANAT degree-seeking students Grading Basis: Letter Grade A-GRAD Restricted to graduate students only. Typically Offered: Fall.

ANAT 6208 - Foundations in 3D Modeling for Anatomical Sciences (1 Credit)

An introduction to the applications and techniques necessary for 3D scanning, modeling, and printing. This lab-based course will provide students with hands-on experience on acquiring and processing surface scan data along with strategies for printing and finishing objects using fused-deposition modeling and stereo lithography. Pre-requisite: ANAT 6205 Grading Basis: Letter Grade Typically Offered: Fall, Spring, Summer.

ANAT 6210 - Autodesk Maya for Anatomical Science (2 Credits)

Autodesk Maya for Anatomical Sciences teaches students to create professional animations illustrating concepts inherent in the study of medical science using Autodesk Maya. Pre-requisite: ANAT 6208. Grading Basis: Letter Grade Typically Offered: Fall, Summer.

ANAT 6220 - Unreal Engine for the Anatomical Sciences (2 Credits)

This course builds upon the foundational 3D modeling skills learned in ANAT 6260 and provides students with the practical experience, inspiration, and confidence to incorporate the Unreal Engine into their capstone. Students will deploy an app built with Unreal Engine. Pre-requisite: ANAT 6208 Prerequisite; ANAT-MS student or instructor permission.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

ANAT 6310 - Neuroanatomy (4 Credits)

Structure & Function in the Human Nervous System. Basic neuroanatomy & neural systems with workshop focus employing facilitated discussions & problem-oriented cases. Laboratory sessions will employ brain specimens, models & image sets. Team-based projects are in-depth exploration of topics with development of collaborative presentations. Requisite: Restricted to ANAT students only.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANAT 6321 - Human Histology (4 Credits)

Histology is the study of the tissues. By exploring the human structure, function and organization at the histological level, students will gain important pattern recognition skills to integrate microscopic knowledge with macroscopic gross anatomy and other foundational anatomical sciences. (Will replace ANAT 6320) Prereq: Restricted to ANAT students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6330 - Human Embryology (3 Credits)

This graduate level, introductory human embryology course will emphasize developmental aspects of adult anatomy and congenital malformations. Educational value of three-or-four-dimensional models and other ancillary learning resources for human embryology will also be explored. Requisite: Restricted to ANAT students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

ANAT 6412 - Foundations of Teaching (1 Credit)

This course will provide students with training, practice, and constructive feedback in effective teaching skills in order to be successful in the biomedical professions. Topics include learning objectives, the neurobiology of learning, assessments, and effective communication within and outside the classroom.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6490 - Advanced Teaching in Anatomical Sciences (3 Credits)

This course offers a hands-on, supervised experience as an anatomical sciences educator. Readings and discussions will enhance your understanding of educational pedagogy. You will apply these skills as you develop and deliver lecture and lab content in a classroom setting. Instructor consent required.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

ANAT 6600 - Experimental Design and Research Methods (1 Credit)

In this course, students will foster and apply strategies that enable critical evaluation of any published research (including basic, clinical, and educational), as well as develop the skills necessary to conduct and appropriately analyze their own research data.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Summer.

ANAT 6750 - Special Topics: Modern Human Anatomy (1-6 Credits)

This course is offered in a variety of technical and thematic areas in modern human anatomy. The specific topics vary from year to year. Note: This course includes lectures, discussions and workshops.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6840 - Independent Study (1-6 Credits)

This course enables the student to pursue an investigation in a modern human anatomical field of choice toward completion of a capstone project with relatively minor supervision from faculty advisors.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6910 - Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Prereq.: ANAT 6412. Course restricted to ANAT majors.

Grading Basis: Satisfactory/Unsatisfactory

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6911 - Advanced Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Pre-requisite: ANAT degree-seeking student; ANAT 6412

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6931 - MSMHA Internship (1-6 Credits)

The internship provides hands-on learning opportunities and practical experience for graduate students in institutions related to anatomical sciences, imaging, technology/biotechnology, innovation, and entrepreneurship. Restricted to ANAT students only

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

ANAT 6950 - MSMHA Capstone Project (1-12 Credits)

The Capstone project is a scholarly and/or research-based pursuit of knowledge and content development in the area of anatomical sciences, modern imaging and modeling technologies, and educational science completed as part of the MS in Modern Human Anatomy. Prerequisite: Must be ANAT degree-seeking student.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

BEHH 5010 - Foundations of Bioethics & Humanities in Health (3 Credits)

This course combines two essential areas of study: The first eight weeks focus on the foundations of bioethics, examining moral frameworks used in medical and health settings and their application to clinical, organizational, and population-based cases. The second eight weeks explore the foundations of narrative practice in medicine through engagement with various texts and other materials. Each section maintains its distinct focus while providing students with complementary perspectives on health and health care.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5210 - The Art of Observation (1 Credit)

The Art of Observation is designed to sharpen the perceptual and analytical skills, which are essential for excellence in clinical practice in dentistry, medicine, and other professional fields. Participants will engage with a selection of visual art pieces and photographic works. Through guided interaction with these materials, students will hone their observational acuity, practice articulating their perceptions and insights, and engage in collaborative analysis reminiscent of differential diagnosis processes. This course teaches Visual Thinking Strategies (VTS), a protocol for facilitating group discussions around visual materials. Students will master the methodology of VTS, including careful material selection, silent observation periods, strategic questioning, neutral facilitation, and effective paraphrasing. The skills cultivated in this course directly translate to clinical scenarios, where the ability to pinpoint key clinical indicators, recognize symptomatic patterns, and interpret patient data flexibly and accurately is paramount for effective patient care. The goals are to increase compassion and empathy, encourage tolerance for ambiguity and diversity, recognize biases in interpretation and foster reflection and honest communication using the arts to gain these skillsets.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5211 - The Art of Listening: Music and Medicine (1 Credit)

The Art of Listening is an innovative course that explores the profound intersection of musical and clinical listening skills to enhance practice in medicine, dentistry, and other healthcare fields. Drawing upon the unique resources of the Anschutz Campus, including a live performance by the Campus Chorus and/or Orchestra, this course develops healthcare professionals' abilities to listen deeply, empathetically, and analytically. Through immersive musical experiences and clinical scenarios, participants will develop a heightened awareness of auditory nuances, rhythms, and harmonies that parallel the complexities of human health and disease. The course emphasizes how musical immersion - can inform and enhance clinical listening skills. Students will learn to apply these techniques to medical contexts, developing their ability to hear both what is said and unsaid, recognize patterns, and maintain focused attention during patient encounters. Participants will explore how musical narratives unfold, mirroring the way patient histories are constructed and understood in clinical settings. Special attention is paid to the emotional and cultural aspects of music, encouraging students to reflect on how these elements influence perception and interpretation in healthcare. This approach fosters empathy and cultural competence, crucial attributes in today's diverse healthcare landscape. By combining experiential learning with practical clinical applications, the course aims to cultivate not just better listeners, but more attentive, empathetic, and perceptive healthcare professionals. Students will develop advanced listening skills essential for excellence in patient-centered care, while gaining a deeper appreciation for the role of music in healing and human connection.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5212 - Pain and Dentistry in the History of Western Art (1 Credit)

If you run a basic search for historical images of pain in Western art since 1500, a curiosity emerges: A significant proportion of the results relate to dentistry and dental pain. In other words, the history of dentistry and the history of pain form overlapping iconography in the history of Western art. Given the near universality of dental pain in human experience, the frequency of its representation is no mystery. However, one of the many paradoxes of pain is that although pain is universal, it is also quintessentially subjective: my pain is different from your pain, even if the cause of the pain is identical. Literature scholar Elaine Scarry notes another paradox: pain is simultaneously one of the most privately certain and publicly doubted experiences. In addition, some who experience pain do not seem to suffer, while others who suffer do not seem to experience pain. This interdisciplinary short course uses the dual iconography of pain and dentistry as a vehicle to explore the history of pain and its relationship to dentistry in the early modern and modern eras. Learners will acquire historical fluency in key themes and issues related to dental practice and patient experience that they can apply to contemporary dental medicine.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5213 - Reflections on Incarceration and Well-Being (1 Credit)

This discussion-based course focuses on understanding incarceration as a structural determinant of health. Through engaging with written work from incarcerated writers, as well as critical theories and empirical texts, students will explore issues related to how the system of incarceration affects individual, community, and societal health and well-being. Weekly discussions will include topics such as health and mortality data collection and communication, healthcare access and delivery, and conditions of confinement. They also include topics along axes of identity including birthing and parenting, aging inside, and incarceration of transgender individuals. Students will apply their learnings in-class to a final paper.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5214 - From Burned Out & Extracted to Regenerative Healing: William Carlos Williams' The Doctor Stories (1 Credit)

"Burnout is a Surrender," said Dr. Martin Luther King. Reflecting on this Robert Coles writes that those who are burned out can "use such low points to become more realistic and reflective and, in the long run, sturdier." In this spirit, spend a semester surrendering to the joys, hazards, and complexities of a life attending to patients by sitting with *The Doctor Stories* by William Carlos Williams. The goal of this course will be to provide opportunities for close presence to these stories. In doing so you may acquire a knack for what John Launer calls "a radical facilitative presence" - both for your own healing soul and for your patients. Each week you will read one story and follow a standard template to reflect on how the story provoked movement inside of you. Then throughout the week you will be asked to take 5 minutes each day to write down how a specific clinical encounter connects to the week's story. We will meet in person to casually commune over our shared experience with these stories.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5215 - Global Health Humanities (1 Credit)

"Global Health Humanities" offers a unique interdisciplinary exploration of health, illness, and healing across cultures through the lens of the humanities. Participants will investigate how universal human experiences of health and illness are interpreted and expressed differently across diverse cultural contexts. Through analysis of narratives, historical accounts, and artistic representations, we will explore questions such as: How do cultural beliefs and practices influence perceptions of what is considered healthy or pathological in oral health? In what ways do storytelling and artistic expression reveal the lived experiences of mental illness in different societies? How have colonial legacies and global power dynamics shaped health inequities? A key focus will be on amplifying marginalized voices in global health. Students will engage with works by authors, artists, and thinkers from the Global South, as well as from historically underrepresented communities within the Global North. This approach will highlight how diverse cultural perspectives can enrich our understanding of health and contribute to more equitable and effective global health strategies.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5250 - Topics in Media, Medicine and Society (3 Credits)

This interdisciplinary course will explore the interconnections and intersections between medicine and media, investigating a significant collaborative enterprise that characterizes American culture.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5310 - Ethical Care in Patient's Living with Dementia (1 Credit)

The population in the United States aged 65 and older is expected to increase 47% by 2050. Advancements in technology and improvements in care have enabled our population to experience increased age-related disease because of an extended lifespan. Currently, nearly 55 million people worldwide are living with Dementia, with the number predicted to increase to 78 million in 2030. Individuals living with Dementia are often assumed to lack decision-making capacity. However, decision-making capacity is time and decision specific, so individuals with Dementia often have a wide range of decision-making capabilities. Patients in our care with limited capacity are often still able to express preferences and desires. This condition is complicated by the large transition to a model of aging in place. Aging in place refers to the ability of older individuals to live independently in their homes as they age, rather than moving to an assisted living or nursing facility. This model emphasizes creating a safe and supportive environment that allows individuals to maintain their autonomy and quality of life through connection to community resources, home modifications, support services, and technology. This course provides an in-depth examination of the ethical considerations surrounding the care of patients living with dementia. Participants will explore key concepts such as autonomy, informed consent, and the challenges of decision-making in the context of cognitive decline. Through case studies and interactive discussions, the course will address the balance between respecting patient rights and ensuring their safety and well-being. Participants will learn best practices for communicating with patients, involving families in care decisions, methods to improve the care setting and navigating complex ethical dilemmas. By the end of the course, participants will be equipped with knowledge and skills to deliver compassionate, ethical care that honors the dignity and individual

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5311 - Moral Distress in Healthcare (1 Credit)

As technology has continued to develop throughout the world and our ability to artificially sustain life has improved, the instances of ethical dilemmas and moral distress have only increased. When an ethics issue arises in healthcare, the ethics issue is typically known but the correct direction of action is unclear or not delineated. This frequently arises in the way of conflicting obligations. For example, a pregnant woman with decision making capacity is in our care and is denying medical interventions to save the fetus. Do we respect patient autonomy and the patient's right to decide for themselves, or do we prioritize the good of the fetus? Moral distress is experienced by workers that encounter an ethics issue where the correct direction for action is clear, but the individual is unable to act. This can be due to institutional constraints, role constraints or even legal constraints based on the location of practice. Moral distress leads to emotional discomfort experienced by healthcare professionals when they are unable to act in accordance with their ethical beliefs and becomes especially apparent when conflict is faced between personal values, institutional policies, patient wishes, or resource constraints. When individuals come together and recognize issues of moral distress, we can work more effectively as a team to support one another. Since ethical dilemmas have the potential to lead to moral distress, it's important that medical professionals have some degree of ethical competence to recognize when issues may arise. This course explores the complex issue of moral distress in the healthcare setting, where professionals confront ethical dilemmas that challenge their values and principles. Participants will examine the causes of moral distress, including systemic issues, institutional policies, and personal beliefs, and recognize the influence of moral distress.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5350 - Narrative Principles and Practices in Healthcare (3 Credits)

This course introduces students to the intellectual and clinical discipline of narrative work in healthcare. Students will explore the theoretical foundations of narrative in healthcare and participate in structured workshops to improve close reading of texts and writing skills. Requisite: 008754

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5410 - Research Methods in Health Humanities (3 Credits)

The Health Humanities Research Methods course provides comprehensive training in qualitative and interpretive research approaches used to understand lived experiences of health, illness, and healthcare through humanities and social science perspectives. Students will gain theoretical foundations in phenomenology, narrative inquiry, ethnography, discourse analysis, and arts-based methods, with particular attention to ethical approaches for working with vulnerable populations in healthcare settings. The course emphasizes how different methodological traditions - from literary analysis to visual ethnography to oral history - can reveal unique insights into how people make meaning of health experiences and navigate healthcare systems. Through hands-on research exercises, students will practice multiple data collection methods including semi-structured interviews, participant observation, close reading, visual analysis, and participatory arts-based approaches. The course pays special attention to power dynamics in healthcare research, trauma-informed practices, and methods for amplifying traditionally marginalized voices. Students will develop practical skills in research design, data collection, interpretation, and presentation while considering how different methodological choices align with research questions about lived experiences of health and illness.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5450 - Addressing Health Stigma in Social Contexts (3 Credits)

This interdisciplinary course will equip students with the tools needed to understand health stigma, to construct an explanation as to why it is so common and to explain what, if anything, should be done to address such stigma. Requisite: 008754

Grading Basis: Letter Grade

Typically Offered: Spring.

BEHH 5550 - Independent Study in Health Humanities & Health Ethics (1-3 Credits)

This independent study will permit students to pursue specialized topics and/or previously studied topics in health humanities and health ethics in greater depth and with more flexible scheduling. Requisite: 008754

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

BEHH 5655 - Introduction to Public Health Ethics (3 Credits)

This course provides learners with an introduction to public health ethics. The material explores differences between public health ethics & health care ethics, important frameworks used in public health ethical analysis, and significant practice in analyzing public health ethics cases.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5750 - Pain, Its Paradoxes & the Human Condition (3 Credits)

This course explores the lived experiences of pain, its paradoxes, and the extent to which it is a key feature of the human condition. Analyses will be drawn from history, religious studies, philosophy, literature, poetry, public health, medicine, and law.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5850 - Clinical Ethics (3 Credits)

The purpose of this course is to introduce students to the theory, methods, history, and application of clinical ethics. Course sessions will include instructor- and student-led didactics. Students will be expected to discuss issues and cases in clinical ethics and critically analyze ethical topics and cases in oral and written formats.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5910 - Race, History and Health in Brazil (3 Credits)

Brazil has a long and extensive history of African enslavement, and in the coastal city of Salvador, African influences are strong and palpable. A large diaspora from different regions of Africa was formed during the colonial period, and this has led to the constant expression—and celebration—of an African heritage in Salvador. Today, Afro-Brazilian cultural elements in music, religion, and capoeira, an Afro-Brazilian art form, are now realities around the world. Brazil's legacies of slavery, colonialism, and segregation, along with its stark socio-economic inequalities, have disproportionately affected the health and well-being of its Afro-Brazilian communities. At the same time, the country is known for its leadership in universalizing access to healthcare, including life-saving HIV treatments. Grassroots activists and organizations operate both alongside of and in opposition to state responses to ongoing epidemics, including COVID-19. Brazil's therapeutic landscape is further complicated by a sophisticated system of traditional medicine that serves as alternative and complementary treatments to widespread biomedical options. The country—and especially the city of Salvador—is thus a critical location for the study of race, history, and health. This course is a 10-day study abroad program in which students will be immersed in the history, culture, and everyday lives of Afro-Brazilians in Salvador, Brazil. The program combines homestays with Brazilian families with classroom and field experiences. Guest lectures from Brazilian experts will discuss topics such as the nation's history, health, politics, music, religion, education, and Carnival. Activities will focus on the interplay of race and health to better understand the lived experiences and rich past of Afro-Brazilians.

Grading Basis: Letter Grade

Typically Offered: Spring.

BEHH 5911 - Medicine, Nazism, & the Holocaust Study Abroad Course (3 Credits)

This immersive course explores the complex and challenging history of medicine, Nazism and the Holocaust – including site visits to Krakow, the Plasow concentration camp, and the Auschwitz-Birkenau concentration and extermination camps – and the legacy of this history for health care and society today. Its central goal is to foster a deeper comprehension of this history and how it continues to affect contemporary medical and public health research, practice and policy. Through this lens, and in ways only accessible through the power of being present in the place where historical events unfolded, learners will gain invaluable insights into the potential impacts of racism, antisemitism, and authoritarian ideologies on health care and society. The transformative experience of visiting Krakow and Auschwitz with historians, health professionals and colleagues will equip learners with essential skills for personal and professional identity formation, including critical thinking, cross-cultural communication, and ethical reasoning in healthcare. Brief Course Description: This course includes pre-work and 2 pre-trip synchronous sessions, and then it centers around a 4-day immersive study abroad visit to Krakow, Poland. The onsite experiences include (1) a full-day walking tour with an historian of Krakow and the Plasow concentration camp, (2) a full day at the Auschwitz-Birkenau camps, conducted in collaboration with the Auschwitz-Birkenau Memorial and Museum, (3) a day-long international conference featuring experts on the history of medical involvement in Nazism and the Holocaust, and (4) a day of workshops. Each day ends with an opportunity for group debriefing and unpacking the often-intense experiences of that day. Learners will engage in classroom and field activities led by international experts to unpack the complex interplay of medicine, public health, science and ethics during the Nazi regime and the Holocaust.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6060 - Special Topics in Biomedical Science & Biotech (1-3 Credits)

Special topics of interest to graduate students in the biomedical sciences and biotechnology fields.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

Typically Offered: Fall, Spring, Summer.

BSBT 6061 - Project Management (2 Credits)

Provides training in initiating, executing & closing a project, including the management of scope, time, cost, human resources, communication, risk and more. Highly interactive intensive course prepares students for Certified Project Management exam (internationally recognized certification). Taught by Project Management Professional.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6064 - Scientific Writing (1 Credit)

Taught by a biomedical researcher and a professional writing instructor, this 15-hour (3-week) course focuses on developing a framework for successful scientific writing practices, including how to effectively structure arguments, how to write grant proposals and more.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6065 - Case Studies in Responsible Conduct of Research (1 Credit)

Anyone conducting research using federal funding must study RCR.

You'll learn expectations and regulations that permeate science. You'll understand consequences of violations to individuals and society. We'll explore misconduct through interactive video, written and video case studies, and other engaging activities.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6067 - Statistics for Biomedical Sciences (2 Credits)

Learn how and when to apply statistical procedures to answer scientific questions relevant to biomedicine, and how to critically assess statistical data for validity.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6068 - Laboratory Research in Structural Biology (1-6 Credits)

The Course BSBT 6068, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on structural biology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

BSBT 6069 - Laboratory Research in Immunology and Microbiology (1-6 Credits)

The Course BSBT 6069, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on immunology and microbiology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

BSBT 6070 - Mini-Research Rotations (1-3 Credits)

The Course BSBT 6070, Mini-Research Rotations, with allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

BSBT 6071 - Introduction to R Programming (1 Credit)

Introduction to the statistical programming language R geared primarily to biomedical science students with little to no previous programming experience. Basic features of R as a programming language and as scientific computing platform. Basics of data cleaning, visualization, and analysis.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6072 - Foundations in Biochemistry (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in biochemistry including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6073 - Foundations in Molecular Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in molecular biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6074 - Foundations in Cell Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in cell biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6075 - Foundations in Genetics (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in genetics including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6076 - Research Explorations (1 Credit)

This course allows for exploration of SBB research labs in a "mini-rotation" format, through meeting faculty, reading literature and participating in lab group meetings and research in order to choose a research lab and prepare a short research proposal.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6078 - Seminar in Immunology and Microbiology (1 Credit)

This course provides students in the Bioinformatics in Immunology/Microbiology program an integration of didactic knowledge with research approaches to outstanding questions in the field. Students will attend department weekly seminar followed by structured discussion.

Prerequisites - IDPT 7810 & IMMU 7630

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6079 - Leadership in a Global Environment (3 Credits)

The Leadership in a Global Environment course seeks to offer students a foundation for understanding the intricate and complex relationship between language, culture, communicative practices, and the role we play as individuals in the globalized work environment of today. In particular, this course is geared to emerging and developing global leaders. Today's leaders must be incredibly versatile. In fact, the entire management team needs to be able to link their industry science with value in the marketplace and tell a compelling story about what makes not just the innovation but also the company itself, special. Sometimes investors are very focused on the science of the products, and sometimes on the finance, so company leaders have to be prepared to talk about either or both. Today's leaders must be transversal: highly strategic and operational while able to understand and connect clinical, market access, commercial, finance, and strategy. The Leadership in a Global Environment course seeks to offer students a foundation for understanding the intricate and complex relationship between language, culture, communicative practices, and the role we play as individuals in the globalized work environment of today. In particular, this course is geared to emerging and developing global leaders. Today's leaders must be incredibly versatile. In fact, the entire management team needs to be able to link their industry science with value in the marketplace and tell a compelling story about what makes not just the innovation but also the company itself, special. Sometimes investors are very focused on the science of the products, and sometimes on the finance, so company leaders have to be prepared to talk about either or both. Today's leaders must be transversal: highly strategic and operational while able to understand and connect clinical, market access, commercial, finance, and strategy.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6110 - Introduction to Biocomputing (3 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic data set. Prerequisite: Undergraduate degree in science, technology, business, engineering or math.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

BSBT 6111 - Introduction to Biomedical Data Practices (2 Credits)

This course provides students with advance knowledge and topics in every aspects of data science.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

BSBT 6112 - Introduction to Biocomputing (2 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic dataset. Requisite: Must be simultaneously enrolled in BSBT 6113.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6113 - Data Science with R (1 Credit)

In this 4 weeks semi-independent study course, you will learn how to use the “tidyverse” programming paradigm to perform data science operation using the programming language R. At the end of the course, you will learn the basic understanding of the fundamental elements of data science, including; wrangling, exploration, visualization and modeling.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6310 - Practical Clinical Research Informatics (3 Credits)

This course provides students with hands on experience in clinical research informatics involving secondary use of electronic health record (EHR) data, clinical informatics databases, and basic clinical data science as preparation for more advanced informatics or data science coursework. Requisite: 008754 A-GRAD

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6801 - Biomedical Entrepreneurship (3 Credits)

The course addresses the essential elements of bioscience and health innovation and entrepreneurship. Prerequisites: An undergraduate degree in science, technology, business, engineering or math. Cross-listed with ENTP 6801

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

BSBT 6804 - Bioinnovation Regulations (3 Credits)

This course is designed to familiarize biomedical scientists and those interested in the business of science with the fundamentals of U.S. and international regulatory affairs regarding drug discovery and medical devices. Focus is the development of products, such as drugs, devices, diagnostic tests, and health information software, to receive U.S. and international regulatory clearance or approval for commercialization.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6805 - Bioinformatics (4 Credits)

This course will simultaneously introduce students to coding principles (using R) applied to common problems in bioinformatics and data analysis. To this end, students will learn how to import high-throughput data into R, pre-process that data to account for technical anomalies resulting from the acquisition modality (e.g., RNA-Seq, ChIP-Seq), and perform a sequence of statistical analysis (e.g., ANOVA) and data visualization (e.g., heatmaps). At the completion of this course, students will be equipped with coding templates in R that they can apply to data analysis for their own research purposes. Students will also be exposed to more advanced principles of data analysis, such as training machine learning algorithms. These include unsupervised and supervised algorithms, which are commonly used for general data exploration and training diagnostic/prognostic models, respectively. Prereq: • Mathematical Foundations: Students are expected to have a solid understanding of calculus and matrix algebra. These mathematical principles are essential for comprehending common data analysis techniques used in bioinformatics. • Programming Skills: Coding experience in any programming language is preferred but not required. The course will teach bioinformatics and coding concepts simultaneously, primarily using R as the programming language.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6806 - Communication Skills (3 Credits)

Position yourself for success biomedical research and industry careers where effective communication is essential. Learn and practice the fundamentals of effective public speaking, presenting, interviewing, and personal branding. This is a graduate level course designed for individuals in research and industry fields who are looking to refine their communication skills.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6939 - Internship - Technology and Innovation (3-6 Credits)

The internship provides hands-on learning opportunities for graduate students in institutions related to technology/biotechnology, computer science, engineering, innovation and entrepreneurship. Requisite: Enrollment with permission only. Instructor consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

BSBT 6950 - Laboratory Thesis Research (1-6 Credits)

Laboratory Thesis Research with allow graduate students to engage in laboratory research training in the biomedical science.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

BSBT 7646 - Tissue Biology and Disease Mechanism (1 Credit)

This course provides an overview of organ systems and through 1) a survey of the major systems, including the cellular and molecular mechanisms underlying their function and repair, integrated with 2) common diseases, current therapies, and their mechanistic basis. Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci Core Courses).

Grading Basis: Letter Grade

Typically Offered: Fall.

CAND 6940 - Candidate for Degree (1 Credit)

Prereq: Consent of Instructor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

CHPM 7001 - Comm-Based Hospice and Pall Med Fellowship - A (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

CHPM 7002 - Comm-Based Hospice and Pall Med Fellowship - B (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite PALC 6511/12

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

CHPM 7003 - Comm-Based Hospice and Pall Med Fellowship - C (4 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

CHPM 7004 - Comm-Based Hospice and Pall Med Fellowship - D (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

CHPM 7005 - Comm-Based Hospice and Pall Med Fellowship - E (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

CHPM 7006 - Comm-Based Hospice and Pall Med Fellowship - F (4 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

CLSC 6060 - Analysis Modeling and Design (3 Credits)

Collaborative offering with Denver Campus, emphasizing information requirements analysis, logical system specification, detailed system design. Topics include structured system development methodologies, prototyping, file design, systems architecture, systems testing, software design strategies. Students use case tool to develop system specifications.. Crosslisted: ISMG 6060.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

CLSC 6080 - Database Management Systems (3 Credits)

Offered as a collaborative offering with UCD, this course focuses on the development and management of database systems to support business operations. Important subjects include semantic data modeling, normalization, SQL, fourth generation languages, and client-server database applications. Crosslisted: ISMG 6080.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

CLSC 6210 - Research Seminars in Clinical Science (1 Credit)

This course provides an overview of the types of clinical translational studies being conducted by senior CLSC doctoral students. The interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages of training, mentors and faculty.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 3.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

CLSC 6211 - Immersion in Community Engagement (3 Credits)

The course focuses on community-based participatory research, community engagement and understanding health disparities through a community immersion experience. Restrictions: Students need to contact the CLSC program prior to registering.
Grading Basis: Letter Grade
Typically Offered: Summer.

CLSC 6260 - Conducting Clinical Trials for Investigators (2 Credits)

Course is for investigators conducting clinical trials. Course covers good clinical practices/regulations that surround setting up and running clinical trials. Clinical studies and popular press articles highlighting what can go wrong in clinical trials will be reviewed and discussed.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Summer.

CLSC 6270 - Critical Appraisal Seminars in Clinical Science (1 Credit)

This course provides an overview of the approaches for critically appraising common study designs published in the clinical and translational sciences literature, as well as other sources of information.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

CLSC 6300 - Scientific Grant Review Process: CCTSI Proposals MS (1 Credit)

Students will understand and participate in the process of scientific review of human subject research protocols submitted to the University of Colorado Denver Clinical Translational Research Centers at University Hospital and The Children's Hospital. Prereq: BIOS 6601, BIOS 6602 (or BIOS 6611, BIOS 6612) & CLSC 7500.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring.

CLSC 6460 - Rare Diseases Translational Research and Clinical Trial Applications (1 Credit)

The purpose of this course is to deepen understanding of human rare diseases and the translational research approaches to rare disease research. The course will broadly cover rare disease epidemiology, patient/subject identification and registries, data extraction from databases, subject recruitment, rare disease clinical trial designs, pediatric considerations, and grant funding. Prerequisites: Familiarity with biostatistics and study design is recommended.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

CLSC 6560 - Designs and Mixed Methods in Implementation Research (3 Credits)

This course provides an in-depth examination of study designs, comparative effectiveness research, and qualitative, quantitative and mixed methods approaches to dissemination and implementation research. The focus is application to health care and public health settings. Prerequisite: CLSC 7653.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CLSC 6580 - Qualitative and Mixed Methods in Health Research (3 Credits)

This course provides an in-depth examination of qualitative and mixed methods approaches that are pertinent to health research.

Grading Basis: Letter Grade

Typically Offered: Spring.

CLSC 6650 - Guided Research Tutorial - Masters (1-3 Credits)

An independent study course developed by the student and the appropriate faculty member based on the area of study. Students meet regularly with the selected course instructor, the student and course instructor will develop a course plan prior to registration.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6653 - Key Concepts in Neurodevelopmental Disabilities I (2 Credits)

Course represents part one of two-part interdisciplinary course series focused on systems, options for diagnosis/assessment and alternatives for service provision related to children/youth/young adults with neurodevelopmental and related disabilities and their families to address this population's special health care needs. Prereq: A degree in healthcare profession or related field or instructor consent.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 6654 - Key Concepts in Neurodevelopmental Disabilities II (2 Credits)

This course represents part two of a two-part interdisciplinary course series focused on service provision, intervention strategies and service provision related to children/youth/young adults with neurodevelopmental and related disabilities and their families to address this population's special health care needs. Prereq: A degree in health care profession or related field or instructor consent and completion of CLSC 6653.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CLSC 6661 - Leadership Dialogues I (2 Credits)

This interdisciplinary leadership course focuses on leadership strategies needed for providing family-centered, culturally competent, community-based services for children with special needs and their families. Prereq: A degree in health care profession or related field or instructor consent.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6662 - Leadership Dialogues II (1 Credit)

This interdisciplinary leadership course focuses becoming change agents to better provide family-centered, culturally competent, community-based services for children with special needs and their families. Prereq: a degree in health care profession or related field or instructor consent.

CLSC 6661

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CLSC 6663 - Intervention for Individuals with Developmental Disabilities (3 Credits)

This interdisciplinary course reviews evidence-based practices in intervention for children with autism and other neurodevelopmental disorders, presented through lectures, critical readings of the literature, case discussions, and case presentations. Prereq: Degree in health care profession or related field or consent of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6668 - Screening/Assessment for Children/Youth with Autism/Neurodevelopmental Disabilities (3 Credits)

This interdisciplinary course presents best practices in screening/assessment for autism, focusing on: identification of symptoms of autism; differentiation of autism from other disorders; recognition of symptoms; examination of culture on clinical presentation; and approaches to share observations. prereq: a degree in health care profession or related fields (or consent of instructor).

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6699 - Masters Research Project: Publishable Paper (1-6 Credits)

During course students working with his/her research mentor and research project committee to plan, execute, write Final Research Project in form of a publishable paper. In addition, students prepare for Final Research Project Examination. This is a capstone course. Prerequisite: Consent of program. BIOS 6601 and BIOS 6602 or BIOS 6611 and BIOS 6612, CLSC 7150, EPID 6630.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

CLSC 6750 - Designing for Dissemination, Sustainability, and Equity (2 Credits)

This course provides an introduction to designing for the dissemination and sustainability of health innovations in clinical and translational research and practice, using a co-creation engagement approach, and with a focus on equity.

Grading Basis: Letter Grade

Typically Offered: Fall.

CLSC 6770 - Implementation Science Grant and Article Funding (2 Credits)

This course provides an in-depth examination of issues in submitting successful grant proposals in Dissemination & Implementation research. The course will build upon good general practices in grant and manuscript preparation and submission. Prerequisite: CLSC 7653

Grading Basis: Letter Grade

Typically Offered: Summer.

CLSC 6850 - Adv Topics: Dissemination and Implementation Sci (1 Credit)

Provides an overview of intermediate and advanced dissemination and implementation (D&I) science research methods in a small group discussion format. This interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages.

Prerequisite: CLSC 7653.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

CLSC 6950 - Masters Research Project: Thesis (1-6 Credits)

During this course students plan, execute, and write the Final Research Project in the form of a Masters thesis. In addition, students will prepare for the Final Research Project Examination. This is a capstone course.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

CLSC 7101 - Grant Writing I (1 Credit)

The purpose of this course is to develop and improve your skills in writing successful grant applications and participating in the critique and review process of grants. Prerequisites: BIOS 6601 and EPID 6630. Course Restrictions: CLSC students, unless written approval of Course Director.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CLSC 7102 - Grant Writing II (1 Credit)

The purpose of this course is to develop and improve your skills in writing successful grant applications and participating in the critique and review process of grants. Prerequisites: BIOS 6601, EPID 6630, CLSC 7101. Course Restrictions: CLSC students, unless written approval of Course Director.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CLSC 7150 - Ethics and Responsible Conduct of Research (1 Credit)

Course provides overview of the field of ethics in clinical research. Topics include historical background, current regulations, IRB requirements on human subjects protection issues. Students will learn how to develop approaches to conduct ethical human subjects research in an optimal manner.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 7152 - Ethics and Responsible Conduct of Research in the Digital Age (1 Credit)

This course will provide an overview of the evolving ethical issues in clinical, translational and public health research involving digital data and technologies.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

CLSC 7202 - Clinical Outcomes and Applications (2 Credits)

The Clinical Outcomes and Applications course introduces students to key concepts and methods in health outcomes research, focusing on how to measure, analyze, and apply outcomes data in research and health policy. Through a mix of lectures, case studies, and hands-on activities, students will learn to design research questions, evaluate study designs, and explore the real-world impact of outcomes research on healthcare delivery. Prereq: BIOS 6601 and BIOS 6602 or BIOS 6611 and EPID 6630.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 7300 - Scientific Grant Review Process: CCTSI Proposals (1 Credit)

Students will understand and participate in the process of scientific review of human subject research protocols submitted to the University of Colorado Denver Clinical Translational Research Centers at University Hospital and the Children's Hospital. Prereq: BIOS 6601 BIOS 6602 or BIOS 6611 and BIOS 6612.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CLSC 7650 - Guided Research Tutorial - Doctoral (1-3 Credits)

This is an independent study course developed by student and appropriate faculty member based on area of study. Students meet regularly with selected course instructor. The student and course instructor will develop course plan prior to registration of the course. Prereq: Consent of program approved course plan closed registration.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 7653 - Dissemination and Implementation Research in Health (3 Credits)

Introduces dissemination and implementation (D&I) research and practice in the context of health (i.e. translational research in health). This is a graduate level course and students should have a working understanding of study designs and statistics.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CLSC 7663 - Context & Adaptation in D&I Research (2 Credits)

This course covers concepts, frameworks, and methods for understanding and assessing context and guiding adaptations as relevant to dissemination and implementation (D&I) health research and practice. Prerequisite - CLSC 7653.

Grading Basis: Letter Grade

Typically Offered: Spring.

CLSC 8990 - Doctoral Thesis (1-10 Credits)

This course involves the student working with his/her research mentor and research project committee develop, design and execute a clinical science doctoral study as well as to write up the project as a thesis. Prerequisite: Program consent. BIOS 6601 or BIOS 6611, BIOS 6602 or BIOS 6680 and HSMP 6617, CLSC 7150, EPID 6630, BIOS 6648 or EPID 6626 or HSMP 6670. Restrictions: Only CLSC PhD students or collaborative CLSC and CSPH Health Services Research Students.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

GENC 6101 - Psychosocial Aspects of Genetic Counseling I (2 Credits)

This is the first course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal, pediatric and adult clinical settings. Coreq: GENC 6105, GENC 6110. Restrictions: Matriculated students in Genetic Counseling MS Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6102 - Psychosocial Aspects of Genetic Counseling II (2 Credits)

This is the second course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal pediatric and adult clinical settings. Prereq: GENC 6101. Co-Req: GENC 6105, GENC 6110. Restrictions: matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6105 - Basic Interviewing Skills (1 Credit)

This course covers fundamental theories and principles of effective patient/client interviewing in genetic counseling practice. Lectures are combined with hands-on role plays and interviews so that students may gain applied experience and receive feedback to foster skills development throughout course. Coreq: GENC 6101, GENC 6110.

Restriction: Matriculated student in Genetic Counseling M.S. Program

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6110 - Topics in Medical Genetics I (3 Credits)

First course in a two-part course sequence regarding principles of clinical genetics and genetic counseling and development of clinical skills used in various medical genetics settings. Fall semester focuses on principles important in pediatric and general genetics settings.

Restriction: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6111 - Topics in Medical Genetics II (2 Credits)

Second course in two-course sequence regarding principles of clinical genetics and genetic counseling used in various medical genetics settings, and development of critical skills. Spring semester focuses on prenatal and adult genetics clinic settings. Prereq: GENC 6110.

Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6120 - Clinical Cytogenetics and Molecular Genetics (3 Credits)

This course provides integrated instruction regarding human cytogenetic and molecular genetic principles, techniques, and diagnostic testing approaches used in clinical evaluation and risk assessment for genetic disorders/predispositions in prenatal and postnatal patient populations.

Coreq: GENC 6121. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6121 - Laboratory in Clinical Cytogenetics and Molecular Genetics (2 Credits)

Course provides introduction to specific methodologies and interpretation of studies used in diagnostic cytogenetics and molecular genetics laboratories. Principles discussed in the co-requisite clinical cytogenetics and molecular genetics course will be applied through demonstrations, hands-on experiments, discussion of illustrative cases. Coreq: GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6123 - Applied Laboratory Genetic Counseling (1 Credit)

A required rotation in genetic testing laboratories. Genetic counseling students learn about the professional practice of laboratory-based genetic counselors and specific skills such as test ordering, variant interpretation, results report writing, communication with clients, and collaboration with other members of laboratory teams. Prereq: GENC 6120, GENC 6121. Restriction: Matriculated student in M.S. Genetic Counseling Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

GENC 6130 - Cancer Genetics and Genetic Counseling (2 Credits)

Course in providing genetic counseling services to clients with or at risk for hereditary cancer predisposition. Topics include clinical oncology, epidemiology, molecular biology of cancer, risk assessment, genetic testing, ethical/legal issues, clinical research considerations, psychosocial impact/support, specific genetic counseling approaches.

Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6140 - Human Inborn Errors of Metabolism (2 Credits)

Course provides systematic review of major metabolic disorders, including their clinical phenotypes, diagnosis, and management. Physiological and laboratory testing principles important to understanding these disorders will be reviewed. Psychosocial impact of metabolic disorders and genetic counseling approaches will be discussed. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6150 - Congenital Malformations and Disorders of the Newborn (1 Credit)

This survey course covers common major malformations and non-metabolic genetic disorders identified by newborn screening programs. Clinical phenotypes, diagnosis, management and etiology are addressed. Psychosocial impact of these conditions and genetic counseling approaches will be discussed. Prereq: GENC 6110. Co-Req: GENC 6111. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6170 - Introduction to Clinical Research for Genetic Counseling Students (1 Credit)

An introduction to clinical research including an overview of ethical principles, study methods and designs, practical execution, data analysis and presentation of results. Possible roles of a genetic counselor in the conduct of clinical research will be a course focus. Restrictions: Matriculated student in MS Genetic Counseling Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6201 - Advanced Psychosocial Genetic Counseling (2 Credits)

This course examines advanced genetic counseling techniques as they relate to psychosocial theories, specific client characteristics and the client/counselor dynamic. Critical discussion of core topics and readings and case analysis will be used for instruction. Prereq: GENC 6101 and GENC 6102. Restrictions: Matriculated second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6210 - Professional Issues in Genetic Counseling I (2 Credits)

First course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Fall semester course focuses on professional standards, professional ethics, legal principles and health systems and policy issues relevant to genetic counselors. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6211 - Professional Issues in Genetic Counseling II (2 Credits)

Second course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Spring semester course focuses on disability issues, cultural competency, public health genetics, research methods in genetic counseling, and professional roles. Prereq: GENC 6210. Restrictions: Second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6250 - Risk Calculation in Genetic Counseling (1 Credit)

This course covers pedigree analysis and risk calculation principles used by genetic counselors in clinical practice. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6910 - Applied General Genetics Clinic (3 Credits)

This is a clinical rotation for Genetic Counseling M.S. students through a general genetics clinic serving a variety of referral indications. Students will learn and practice case management, history taking, risk assessment, counseling and client advocacy skills. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6911 - Applied Prenatal Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a prenatal diagnosis and genetics clinic. Students will learn/practice history taking, risk assessment, patient education and genetic counseling, case management, as well as observe prenatal diagnosis procedures. Prerequisites: GENC 6101, GENC 6105, GENC 6110.

Restriction: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6912 - Applied Metabolic Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a genetics clinic for inborn errors of metabolism. Students will work with patients referred for diagnostic evaluation, medical/nutritional management of specific conditions, and follow-up of positive newborn metabolic screening results. Prereq: GENC 6101, GENC 6105, GENC 6110.

Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6913 - Applied Regional & Specialties Genetics Clinics (1-2 Credits)

This is a clinical rotation for genetic counseling students through regional outreach (telehealth) genetics clinics and specialty/multidisciplinary clinics serving patients with various genetic conditions. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6914 - Applied Hereditary Cancer Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through adult and pediatric hereditary cancer clinics for individuals seeking genetic counseling and testing for genetic cancer predisposition syndromes. Section 01 - Adult I, Section 02 - Adult II, Section 05 - Pediatric. Program.

Prereq: GENC 6105, GENC 6110, GENC 6120, GENC 6130

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6915 - Applied Adult Medical Genetics Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through a medical genetics clinic and clinical research settings providing diagnosis, management, risk assessment and genetic counseling for adults. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6919 - Applied Medical Genetics Clinic - Clinical Elective (1-3 Credits)

This is an elective clinical rotation for genetic counseling students desiring to arrange training in outside of core required clinical rotations or an additional, advanced rotation. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6920 - Applied Medical Genetics-Laboratory Genetic Counseling Elective (1 Credit)

An elective rotation for students desiring an advanced, applied training experience with genetic counselors based in a genetics diagnostic laboratory. Restrictions: Matriculated student in GENC program who has completed required prerequisite courses listed; Permission of instructor. Prereq: GENC 6120; GENC 6121; GENC 6122

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6940 - Capstone in Genetic Counseling (1 Credit)

Students will develop a proposal and complete an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling. GENC matriculated student with 2 semesters required coursework completed. Permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GERI 6810 - Foundations in Geriatrics (2.5 Credits)

This course is designed for health professions graduate students who seek to obtain multidisciplinary knowledge of the aging process. The content provides an overview of the biological, psychological, and social dimensions of aging as they relate to best practices in geriatric healthcare.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6811 - Foundations in Geriatrics - 2 (2.5 Credits)

This course is designed for health professions graduate students who seek to obtain multidisciplinary knowledge of the aging process. The content provides an overview of the biological, psychological, and social dimensions of aging as they relate to best practices in geriatric healthcare.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6820 - Mini-Clinical Rotations (1 Credit)

This course is designed to provide health professions graduate students with knowledge of current diagnostic and treatment approaches appropriate for aging patients within a multidisciplinary environment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6821 - Mini-Clinical Rotations - 2 (1 Credit)

This course is designed to provide health professions graduate students with knowledge of current diagnostic and treatment approaches appropriate for aging patients within a multidisciplinary environment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6830 - Quality Improvement Learning Project (4 Credits)

This course is designed to empower health professions graduate students to lead Age-Friendly Health System transformation. The course will consider research findings and relevant evidence in a clinical geriatrics topic and guide students in a systematic approach to completing a Quality Improvement project, resulting in a scholarly product.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6840 - Independent Study (1 Credit)

This course is designed to provide health professions graduate students with an opportunity to enhance their knowledge and clinical understanding of aging and/or to explore an area of interest related to gerontological research in depth.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

MIMS 6062 - Introduction to Science Communication (1 Credit)

This introductory course in science communication is designed to introduce the skills to effectively convey complex scientific concepts to diverse audiences, including the public, policymakers, and fellow scientists from different fields. Through a combination of brief lectures, in-class activities and practical assignments, students will learn key principles of clear and accurate scientific communication, the ethics of public science discourse, and strategies for engaging written, media and digital platforms. Emphasis is placed on adapting messages for different target audiences, crafting compelling narratives, and developing visual aids. By the end of the course, students will be prepared to communicate their research effectively across a range of platforms.

Grading Basis: Letter Grade

Typically Offered: Spring.

MIMS 6063 - Scientific Literature Analysis (1 Credit)

This course for Immunology and Microbiology Masters students will instruct in how to think critically about scientific literature with particular emphasis on how data is presented used to construct scientific arguments. Students will have practice both analyzing existing literature and scientific presentations, as well as presenting their own work.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

MIMS 6070 - Mini-Research Rotations (1-3 Credits)

The course MIMS 6070, Mini-Research Rotations, will allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MIMS 6071 - Introduction to R Programming for Immunologists and Microbiologists (1 Credit)

Introduction to the R programming language geared towards Immunology and Microbiology students with no prior programming experience. This course will provide instruction in R language syntax, data structures and visualization techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MIMS 6950 - Laboratory Thesis Research (1-6 Credits)

Laboratory Thesis Research with allow Immunology and Microbiology masters students students to engage in mentored laboratory research training ultimately producing a masters thesis based on their work.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

PALC 6110 - Basic Pain Assessment & Management: IDT Care (3 Credits)

This course reviews basic pain pathophysiology, assessment, non-pharmacological interventions, and non-opioid and opioid pharmacological pain management. Integrated with IDT topics related to pain such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6120 - Advanced Concepts in Pain Management (3 Credits)

This course focuses on methadone, opioid infusions, interventional pain management, and other complex modalities. This class focuses on ethics and psychosocial issues including pain in the face of addiction and public policy around opioids and REMS. Prerequisites: PALC 6110 and 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6210 - IDT Care for Symptoms: Part A (3 Credits)

Course covers the assessment and management of eight common non-pain symptoms (e.g. anorexia, asthenia, constipation and nausea/vomiting). Integrated with IDT topics related to symptom assessment/management such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6220 - IDT Care for Symptoms: Part B (3 Credits)

This course covers the assessment and management of eight different common non-pain symptoms (e.g. dyspnea, cough, and insomnia). Integrated with IDT topics related to symptom assessment/management such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6310 - Advanced Illness in Special Settings: Part A (3 Credits)

Assessment\ management of 8 chronic illnesses (cardiopulmonary, end stage liver and renal diseases) emphasis on early PC combined with disease focused therapy. Attention: prognostication and transitions into palliative/hospice care or discontinuing treatments including bioethical review and IDT support. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6320 - Advanced Illness in Special Settings: Part B (3 Credits)

Assessment/management of cancer and HIV as chronic illness with emphasis on early palliative care combined with disease focused therapy. Attention to prognostication, transition into palliative/hospice care.

Paired with Spiritual Care review of challenging spiritual issues, hope, miracles and rituals. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6330 - Advanced Illness in Special Settings: Part C (3 Credits)

Assessment/management of neurodegenerative disorders as chronic illness with emphasis on early palliative care combined with disease focused therapy. Attention to prognostication and transitions into palliative/hospice care. Paired with bioethical review and comfort care for the imminently dying. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6410 - Death & Dying: Unique Role of the AHP (3 Credits)

This course focuses on methadone, opioid infusions, interventional pain management, and other complex modalities. This class focuses on ethics and psychosocial issues including pain in the face of addiction and public policy around opioids and REMS. For AHP students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6510 - Palliative Care Core Concepts - Principles, & Communication (3 Credits)

Online and on-campus intensive (some physical presence required) on palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Requirement: Restricted to PALC MS or certificate students

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6511 - Online: Core Concepts, Principles & Commun. Skills (2 Credits)

Online discussion of palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Co-Requisite: PALC 6512

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6512 - Intensive: Core Topics, Principles & Commun. Skills (1 Credit)

On-campus, in-person intensive (physical presence required) discussion of palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Co-Requisite: PALC 6511

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6520 - Communication Skill Refinement: IDT Collaboration (3 Credits)

Online and on-campus intensive (some physical presence require). Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho-social-spiritual assessment integrated in treatment plans with simulated patients\ families.

Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6521 - Online: Comm. Skill Refinement: IDT Collaboration (2 Credits)

Online. Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients/families. Co-Requisite: PALC 6522

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6522 - Intensive: Comm. Skill Refinement: IDT Collaboration (1 Credit)

On-campus, in-person intensive (physical presence required). Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients/families. Co-Requisite: PALC 6521

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6531 - Online: Palliative Care Integrated in Your Community (2 Credits)

Online. Demonstrate advanced PC communications skills & management of complex pain and symptoms; apply ethical training and practical experience with supportive interventions to help preserve dignity, achieve closure and have peace at life's end. Co-Requisite: PALC 6532

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6532 - Intensive: Pall Care Integrated in Your Community (1 Credit)

On-campus, in-person intensive (physical presence required). Demonstrate advanced PC communications skills & management of complex pain and symptoms; apply ethical training and practical experience with supportive interventions to help preserve dignity, achieve closure and have peace at life's end. Co-Requisite: PALC 6531

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6910 - Systems Topics: Preparation to Capstone (3 Credits)

Palliative Care Research, Quality Improvement, Health Care Policy and Advocacy and Palliative Care Program development including institutional needs assessment and program planning. Instruction to become a PC Educator, development of professional resilience and role of medical humanities. Prerequisite: PALC 6511/PALC 6512

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6950 - Capstone Project (3 Credits)

MS Palliative Care Capstone Project. Students will design, implement, evaluate, and present the result of a research, QI, education, advocacy, or medical humanities project during year 2 with mentorship from faculty. Results presented at final on-campus course (PALC 6530). Prerequisites: PALC 6910 and PALC 6520

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Spring.

PALC 6960 - Masters Thesis in Palliative Care (1-3 Credits)

Masters thesis work in Palliative Care. Final results presented at final on-campus course (PALC 6530). Prerequisite: PALC 6910 and 6520

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

TRAD 6210 - Translational Research - Alzheimer's Disease/Dementias (4 Credits)

The course will facilitate a solid understanding of translational research in Alzheimer's Disease and Alzheimer's Disease Related Dementias, including neuropsychological and neuropathological disease features, genetic risk factors, biomarkers and brain imaging tools, statistical analyses, therapeutical approaches and clinical trial design.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

TRAD 6211 - Research/Development in Alzheimer's Disease/Dementias (1 Credit)

The course will discuss with industrial experts a wide variety of issues in connection with research and developments on Alzheimer's Disease and Alzheimer's Disease Related Dementias in an industrial setting.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

TRAD 6212 - Mini-Rotations AD/ADRD Translational Research (1 Credit)

The course will facilitate short three week mini-rotations in facilities that conduct translational research connected with Alzheimer's Disease or Alzheimer's Disease Related Dementias in academic or industrial settings.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BMSC 7650 - Research in Biomedical Sciences (1-3 Credits)

Research rotation for students in the biomedical sciences in PhD program. Prereq: Consent of Instructor. Previously offered as IDPT 7650

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 20.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)

Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

BMSC 7811 - Responsible Conduct of Research (1 Credit)

This course provides training in the responsible conduct of biomedical research. It is geared towards early PhD graduate students and meets NIH guidelines. Ethical issues associated with specific topics commonly encountered by graduate students are presented and discussed.

Grading Basis: Letter Grade

Typically Offered: Fall.

BMSC 7812 - Rigor and Responsibility in Biomedical Research (1 Credit)

Course will integrate the concepts of rigor, repeatability and reproducibility by combining both wet and dry lab components focused on teaching these concepts and laboratory skills. We will seek to make these concepts routine considerations during the design and execution of any type of experiment. Instructor consent required.

Grading Basis: Satisfactory/Unsatisfactory

Typically Offered: Spring.

IDPT 7850 - Independent Study in Bioethics, Medical Humanities or Health Law (1-6 Credits)

Course is designed to meet the needs of students interested in conducting advanced studies of issues and topics in bioethics, medical humanities, or health law. Students will work under the direction of the course director on a specific research topic. Course Restrictions: Permission of the instructor. Repeatable for credit within the degree program, but not within the same term. Max credits - 6.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IDPT 8890 - Clinical Experience for CTSI PhD Students (1 Credit)

Each student will identify a clinician mentor who will develop/direct clinical experience tailored to student's thesis research. It may include participation in relevant clinical conferences, a direct clinical experience, clinical research, and preparation of a clinical research protocol. Prereq: IDPT 7805 & 7646, EPID 6630, BIOS 6601 or equivalent. Restrictions: PhD Graduate Students.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6110 - Basic Pain Assessment & Management: IDT Care (3 Credits)

This course reviews basic pain pathophysiology, assessment, non-pharmacological interventions, and non-opioid and opioid pharmacological pain management. Integrated with IDT topics related to pain such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6120 - Advanced Concepts in Pain Management (3 Credits)

This course focuses on methadone, opioid infusions, interventional pain management, and other complex modalities. This class focuses on ethics and psychosocial issues including pain in the face of addiction and public policy around opioids and REMS. Prerequisites: PALC 6110 and 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6210 - IDT Care for Symptoms: Part A (3 Credits)

Course covers the assessment and management of eight common non-pain symptoms (e.g. anorexia, asthenia, constipation and nausea/vomiting). Integrated with IDT topics related to symptom assessment/management such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6220 - IDT Care for Symptoms: Part B (3 Credits)

This course covers the assessment and management of eight different common non-pain symptoms (e.g. dyspnea, cough, and insomnia). Integrated with IDT topics related to symptom assessment/management such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6310 - Advanced Illness in Special Settings: Part A (3 Credits)

Assessment/management of 8 chronic illnesses (cardiopulmonary, end stage liver and renal diseases) emphasis on early PC combined with disease focused therapy. Attention: prognostication and transitions into palliative/hospice care or discontinuing treatments including bioethical review and IDT support. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6320 - Advanced Illness in Special Settings: Part B (3 Credits)

Assessment/management of cancer and HIV as chronic illness with emphasis on early palliative care combined with disease focused therapy. Attention to prognostication, transition into palliative/hospice care. Paired with Spiritual Care review of challenging spiritual issues, hope, miracles and rituals. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6330 - Advanced Illness in Special Settings: Part C (3 Credits)

Assessment/management of neurodegenerative disorders as chronic illness with emphasis on early palliative care combined with disease focused therapy. Attention to prognostication and transitions into palliative/hospice care. Paired with bioethical review and comfort care for the imminently dying. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6410 - Death & Dying: Unique Role of the AHP (3 Credits)

This course focuses on methadone, opioid infusions, interventional pain management, and other complex modalities. This class focuses on ethics and psychosocial issues including pain in the face of addiction and public policy around opioids and REMS. For AHP students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6510 - Palliative Care Core Concepts - Principles, & Communication (3 Credits)

Online and on-campus intensive (some physical presence required) on palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Requirement: Restricted to PALC MS or certificate students
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

PALC 6511 - Online: Core Concepts, Principles & Commun. Skills (2 Credits)

Online discussion of palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Co-Requisite: PALC 6512
Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PALC 6512 - Intensive: Core Topics, Principles & Commun. Skills (1 Credit)

On-campus, in-person intensive (physical presence required) discussion of palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Co-Requisite: PALC 6511
Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PALC 6520 - Communication Skill Refinement: IDT Collaboration (3 Credits)

Online and on-campus intensive (some physical presence require). Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients/families. Prerequisite: PALC 6510
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

PALC 6521 - Online: Comm. Skill Refinement: IDT Collaboration (2 Credits)

Online. Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients/families. Co-Requisite: PALC 6522
Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PALC 6522 - Intensive: Comm. Skill Refinement: IDT Collaboration (1 Credit)

On-campus, in-person intensive (physical presence required). Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients/families. Co-Requisite: PALC 6521
Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PALC 6531 - Online: Palliative Care Integrated in Your Community (2 Credits)

Online. Demonstrate advanced PC communications skills & management of complex pain and symptoms; apply ethical training and practical experience with supportive interventions to help preserve dignity, achieve closure and have peace at life's end. Co-Requisite: PALC 6532
Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PALC 6532 - Intensive: Pall Care Integrated in Your Community (1 Credit)

On-campus, in-person intensive (physical presence required). Demonstrate advanced PC communications skills & management of complex pain and symptoms; apply ethical training and practical experience with supportive interventions to help preserve dignity, achieve closure and have peace at life's end. Co-Requisite: PALC 6531
Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PALC 6910 - Systems Topics: Preparation to Capstone (3 Credits)

Palliative Care Research, Quality Improvement, Health Care Policy and Advocacy and Palliative Care Program development including institutional needs assessment and program planning. Instruction to become a PC Educator, development of professional resilience and role of medical humanities. Prerequisite: PALC 6511/PALC 6512
Grading Basis: Letter Grade with IP
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

PALC 6950 - Capstone Project (3 Credits)

MS Palliative Care Capstone Project. Students will design, implement, evaluate, and present the result of a research, QI, education, advocacy, or medical humanities project during year 2 with mentorship from faculty. Results presented at final on-campus course (PALC 6530). Prerequisites: PALC 6910 and PALC 6520
Grading Basis: Letter Grade with IP
A-GRAD Restricted to graduate students only.
Additional Information: Report as Full Time.
Typically Offered: Spring.

PALC 6960 - Masters Thesis in Palliative Care (1-3 Credits)

Masters thesis work in Palliative Care. Final results presented at final on-campus course (PALC 6530). Prerequisite: PALC 6910 and 6520
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 12.
A-GRAD Restricted to graduate students only.
Additional Information: Report as Full Time.
Typically Offered: Fall, Spring, Summer.

RPSC 7802 - Reproductive Development (1 Credit)

Focus of course is developmental biology of reproductive systems. Sex determination, fertilization, implantation, development of placenta and mammary glands will be covered in lectures and discussions of current literature. Course is designed to follow Endocrinology and Metabolism in Spring semester. Prereq: Core Courses IDPT 7811, 7812, 7813, 7814, 7815.
Grading Basis: Letter Grade
Typically Offered: Spring.

RPSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Reproductive Science. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Academic Grievance and Appeals Process

The following procedures address those student appeals and grievances arising from suspension, termination/dismissal based on unsatisfactory academic performances as reported to the Graduate School by affiliated graduate programs. The Graduate School cannot reverse academic decisions made by programs, schools or colleges. The Graduate School is not involved in grievance processes related to issues not related to suspensions or dismissals, but will be happy to assist with mediating discussions or grievances between students and programs or schools/colleges.

The intent of the academic appeal procedure is to assure fairness and due process to all involved parties. Good faith efforts should always be made by students, faculty, and administration to settle all appeals, complaints, and grievances on an informal basis. These efforts will include conferences between those people who are directly involved in the conflict as well as others who are perceived as possibly helpful for solving the issue at hand.

Definitions

Suspensions and Terminations can be issued for a variety of reasons (see below) including lack of progress

Lack of Progress: Students failing to meet program progression criteria, such as failure to pass courses, not completing remaining work related to grades of incomplete in time, or some other programmatic issues, would fall into this category. Students in this category may be suspended or terminated/dismissed as defined by the corresponding criteria below.

- **Suspension:** Removal of the student from the graduate program for a defined period of time and/or the specification that a student must fulfill certain requirements before readmission or re-instatement will be considered. While suspended, the student is not entitled to attend classes, use University facilities, participate in University activities, or be employed as a student by the University. Special conditions may be stipulated for reinstatement at the conclusion of suspension. The student is not in good standing with the University during the term of the suspension. Per this policy, students terminated have the right to appeal their suspension in writing within one week.
- **Termination/Dismissal:** Terms used synonymously to refer to a student being withdrawn from a graduate program and Graduate School. Official notification is sent to students by email, on request or as necessary. Per this policy, students terminated have the right to appeal their dismissal in writing within one week. As with a suspension, the student is no longer entitled to attend classes, use University facilities, participate in University activities, or be employed by the University as a student.

Graduate programs and students should be in continuous communication. To assist this process, graduate programs have developed programmatic handbooks and students are responsible for

following the policies and procedures outlined in program handbooks and in the Graduate School's Policies and Procedures. Ignorance of the guidelines and procedures will not constitute an affirmative defense in an appeals process.

General procedures

1. Students should be informed in writing by the relevant instructor, faculty committee, Program Director, or appropriate Dean that he/she is not meeting the academic requirements to continue in the graduate program. Written notices of course failures, unsatisfactory program progress, and intent to request dismissal or suspension from the Graduate School are distributed by the specific Program Director to the involved student, the student's academic advisor, the program progression's committee (if available), and appropriate Deans.
2. Should the student disagree with the decision to terminate progression in the program based on unsatisfactory academic performance, the student should initiate a conference with the involved person(s) to determine if the disagreement can be resolved within 2 weeks.
3. If the results of the first conference are not acceptable to the student, the student informs the involved faculty within 1 week and requests a conference with the involved faculty and Program Director or school administrator. NOTE: This step is required only in situations in which the Program Director and/or school administrator have not already approved or concurred with the initial notice of failure or intent to suspend or dismiss from the program. If the student still does not agree with the decision of the graduate program, the student should follow whatever grievance or appeal procedures are in place within the school or college housing the program. The Graduate School Dean can be called on to advise in this process.
4. If the consensus of the program is still that the student should be terminated/dismissed or suspended, the Program Director or Chairperson notifies the Graduate School and appropriate school Dean and recommends the student's dismissal or suspension. The email or letter should outline the reason for the dismissal or suspension and steps taken up to that date. If suspension is recommended, the recommendation also includes specific criteria for the term of the suspension and requirements for reinstatement.
5. The Graduate School and appropriate school/college Deans will review the student's academic record and the information submitted by the program to ensure that the student has received due process. If the student's academic record and/or submitted information support termination/dismissal, the student will be dismissed from the program and the Graduate School. If suspension is recommended and supported by the academic record and submitted information, the student will be suspended per the request. The student will be notified of any termination/dismissal or suspension decisions by the program via email with delivery and read receipts.

Written Appeal Procedure

1. Should the student wish to appeal the Graduate School's decision, the student should submit a written response to the Dean of the Graduate School within 1 week of receiving the written notice of suspension or termination/dismissal. The appeal should include rationale for the appeal and desired outcome. The student may meet with the Office of Student Affairs and working with them, request a personal interview with the Graduate School Dean to discuss the situation after they have submitted their written appeal.
2. The final decision rests with the Dean of the Graduate School. At the Dean's discretion, he/she may discuss the Graduate School Dean's

decision with the involved faculty and student's program, as well as any other persons affected by the recommended resolutions.

3. The Dean of the Graduate School will notify the student of final decision by email with delivery and read receipts. This will normally be within 10 working days of submission of the appeal or interview with the student (whichever falls last). In cases where consultation with others to mediate the outcome are necessary, this process could take longer and the Dean will notify the student of the reasons and timeline, when known. The decision of the Dean of the Graduate School is final.
4. The Dean shall notify the appropriate CU Registrar of the change in the student's academic status and order the Registrar to suspend the student's registration.

Academic Honor Code

Academic Integrity Expectations

Please refer to the Academic Honor and Conduct Code definitions at the CU Anschutz Medical Campus Catalog Website (<https://catalog.cuanschutz.edu/cu-anschutz/university-policies/>).

This campus-wide policy statement on student academic honor and conduct at the University of Colorado Denver | Anschutz Medical Campus was developed in consultation with faculty and student representatives from each health sciences school, and representatives of the campus-wide Faculty Council and Student Senate. It provides general policies for all students on campus, in accordance with the Regents' resolution of March 17, 1988, while at the same time it directs the schools to develop specific procedures to implement the policy in accordance with their unique programs and student populations. While the process for resolving honor code violations may vary from school to school, the elements listed below will remain uniform. The health professions are based on a high degree of trust by the individuals they serve. Students entering the health professions have a particular obligation, therefore, to conduct themselves at all times in a manner that reflects honesty, integrity, and respect for others.

A. Academic Honor and Conduct Code:

Education at the University of Colorado Denver | Anschutz Medical Campus is conducted under the honor system. All students who have entered health professional programs should have developed the qualities of honesty and integrity, and each student should apply these principles to his or her academic and subsequent professional career. All students are also expected to have achieved a level of maturity which is reflected by appropriate conduct at all times.

Although it is not possible to list every situation that violates the University of Colorado Denver | Anschutz Medical Campus academic honor and conduct code, the following examples will provide a reference point.

- **Academic Honesty** - Students should adhere to the highest standards of academic honesty and integrity. Examples of behavior which violates these standards include: plagiarism (including improper use of web information), cheating, illegitimate possession and/or use of examinations, and falsification of official records.
- **Professional Conduct** - As future health professionals, students should also adhere to the highest standards of professionalism. Examples of unprofessional conduct include: misrepresentation of effort, credentials or achievement in either the academic or clinical setting; any action which compromises the quality of patient care;

violation of patient confidentiality; and other conduct unbefitting a health professional.

- **Alcohol and Drug Use** - Alcohol and/or drug abuse compromises the student's ability to learn and to practice as a health provider and, thus, is considered unprofessional conduct. Students who have a problem with alcohol and/or drugs should seek assistance from services available on campus. The sale of drugs or the possession of non-prescribed narcotics or other controlled substances is against the law. In order to minimize the potential for alcohol abuse at campus functions, students must work with University and/or their program administration to ensure compliance with the policies and procedures regarding functions where alcohol may be served.
- **Respect for the Rights and Property of Others** - Students should conduct themselves in a manner which recognizes the rights and property of others. Examples of inappropriate behavior include theft, damage to University facilities, harassment or physical assault, and any conduct which threatens the health or safety of others.

The primary responsibility for reporting violations of the student honor and conduct code rests with the individual student who has violated them. However, fellow students and members of the faculty also share in this responsibility.

B. Relationship of Honor and Conduct Code to Local, State, and Federal Laws

The University adheres to all appropriate local, state, and federal laws, and cooperates with law officials in all matters. Any alleged violation of local, state, or federal laws will be referred to the appropriate law enforcement agency, and such laws have precedence over the provisions of this policy.

C. Honor and Conduct Committee

Each school will have a standing Student Honor and Conduct Committee and, as appropriate, individual programs may have standing committees. The composition of the committee will include faculty and student representatives, with the exact composition of the committee to be determined by the dean in consultation with the school's faculty and student governance groups. The primary function of this committee will be to examine alleged violations of the honor and conduct code, and to make recommendations to the dean on these matters as appropriate.

D. Check individual school policies for school-specific procedures.

Student Conduct

"By enrolling as a student in the university, a person shall assume obligations of performance and behavior established by the university relevant to its lawful missions, processes, and functions. As members of the academic community, students have responsibility, equivalent to that of the faculty, for study, learning, academic integrity, and protecting the university as a forum for the free expression of ideas."

(Laws of the Regents 7B Standards of Conduct)

Conflict of Interest Policy

Conflict of Interest Policy for Graduate Students who Hold Other Positions at CU Anschutz

Graduate students may hold employment positions within the University of Colorado Anschutz Medical Campus in addition to their positions as graduate students at CU Anschutz. When this situation occurs, there is

the potential for conflicts of interest to arise. This policy governs such situations.

- A graduate student may not also be a regular faculty member (Instructor or above) in the same program in which s/he is enrolled as a student.
- If two individuals exist in a student-faculty relationship in a graduate program, they may not both hold faculty (Instructor or above) appointments in the same graduate program, even though that graduate program is different from the one in which the student is enrolled.
- Recent graduates can be granted a graduate faculty appointment in the graduate program from which they graduated. In this situation, the new faculty member must not direct courses taken by individuals who were students when the new faculty member was also a student. (In programs where independent student cohorts exist, then the new faculty member must not direct a course taken by students from his/her cohort.) The new faculty member may not serve on an examination committee of any individual who was a student in the program (regardless of cohort) when the new faculty member was still a student.
- A faculty member who employs a graduate student as a PRA:
 - Can be an "in" graduate faculty member of the student's program and can serve on the student's graduate degree examination committee(s) with the approval of the Graduate Program Director; or
 - Can serve as an additional (but not sole) "outside" graduate faculty member of the student's program and examination committee with the approval of the Graduate Program Director; but
 - Cannot serve as Chair of the student's examination committee(s).
- Despite the allowable participation on examination committees described above (#4), the Graduate School discourages such involvement and suggests that the employer not serve on the committee, but attend all committee meetings as an invited guest.

Student Email Policy

Purpose of the Policy

There is an expanding reliance on electronic communication among students, faculty, staff and administration at the University of Colorado Denver, Graduate School and in other schools on campus. Because of this increasing reliance and acceptance of electronic communication, email is considered an official means for communication within UCD Graduate School.

Implementation of this policy ensures that students have access to this critical form of communication. For the majority of students, this will not represent any change from what is currently done; it will, however, ensure that all students can access, and be accessed by, email as the need arises.

Scope

The student email policy provides guidelines regarding the following aspects of email as an official means of communication:

- University use of email;
- Assignment of student email addresses;
- Student use of and responsibilities associated with assigned email addresses; and

- Expectations of email communication between faculty and student and staff and student.

Policy

• University use of email

Email is an official means for communication within UCD Graduate School. Therefore, the University of Colorado Denver Graduate School has the right to send communications to students via email and the right to expect that those communications will be received and read in a timely fashion.

• Assignment of student email address

Information Systems (IS) will assign all students an official University email address. It is to this official address that the University of Colorado Denver Graduate School will send email communications; this official address will be the address listed in the University's Global Address List for that student.

• Redirecting of email

UCD email cannot be electronically redirected to another email address. Support is available for setting email clients to read multiple accounts. Please go to the Health Sciences Library for information on how to set up your computer to receive multiple email accounts. The University will not be responsible for the handling of email by outside vendors or by departmental servers.

• Expectations regarding student use of email

Not reading email does not absolve a student from the responsibilities associated with communication sent to his or her official email address. Students are expected to check their official email address on a frequent and consistent basis in order to stay current with University communications (at a minimum, once a week). Students have the responsibility to recognize that certain communications may be time critical. "I didn't check my email," error in forwarding email, or email returned to the University with "Mailbox Full" or "User Unknown" are not acceptable excuses for missing University communication sent via email.

• Educational uses of email

Faculty will determine how email will be used in their classes. It is highly recommended that if faculty have email requirements and expectations they specify these requirements in their course syllabus. Faculty can make the assumption that students' official email addresses are being accessed, and faculty can use email for their courses accordingly.

• Appropriate use of student email

a. All use of email including use for sensitive or confidential information, will be consistent with the Administrative Policy Statement on Use of Electronic Email. See <http://www.cusys.edu/policies/General/email.html>

b. Confidentiality regarding student records is protected under the Family Educational Rights and Privacy Act of 1974 (FERPA). All use of email, including use for sensitive or confidential information, will be consistent with FERPA.

- c. Email shall not be the sole method for any legal notification, action, or correspondence.

Procedures

The Office of the Assistant Vice Chancellor for Information Systems will review this policy as needed. Changes will be authorized by the approval of the Dean and the Assistant Dean.

References

This policy complies with the guidelines as found in:

- Family Educational Rights and Privacy Act, UCD Registrar
- CD's Information Technology Services, Rights and Responsibilities <http://www.UCHSC.edu/is/policies/aup.htm> (<http://www.UCHSC.edu/is/policies/aup.htm>)
- University of Colorado System, Use of Electronic Mail Policy: <http://www.cusys.edu/policies/General/email.html> (<http://www.cusys.edu/policies/General/email.html>)
- University of Colorado System, Student Rights to privacy of Educational Records: <http://www.cusys.edu/policies/Academic/studentrights.html>

Format Guidelines for Theses & Dissertations

Please reference the guide found on the Graduate School website, at <https://graduateschool.cuanschutz.edu/docs/librariesprovider138/denver-anschultz-graduate-school/resources/format-requirements-and-guidelines.pdf> (<https://graduateschool.cuanschutz.edu/docs/librariesprovider138/denver-anschultz-graduate-school/resources/format-guide.pdf>).

Graduate School Acceptable Use Policy

Introduction

The purpose of the acceptable use policy is to establish processes and guidelines to all staff members in **Graduate School**, including full time staff, part time staff, and temporary staff (includes contractors, temps and students). The user shall only be granted access to the minimum necessary data that they require to perform their duties.

Policy Statement

The use and access of **Graduate School** information systems is restricted to appropriately identified, validated and authorized individuals. The following subsections outline the requirements for gaining access to **Graduate School** information systems.

Workstation Use and Security

- Each workforce member must use a unique user name and strong password to access their workstation and subsequent data both locally and via server.
- Computer workstations accessing FERPA data must maintain security configurations that restrict access to data to only those workforce members that have been legitimately granted access. Recommended security configurations include, but are not limited to:
 - Enabling a password protected screen saver
 - Setting computers or applications to automatically terminate a computing session after a set period of idle time
 - The use of campus standard anti-virus products
 - Applying security patches to computer software applications and operating systems

- When Anschutz stores, shares, and syncs work files internally or externally, it is important that the confidentiality, integrity, and availability of that data be preserved. OneDrive can be used to store, share, and sync work files internally or externally with the following guidance.

- <https://www1.ucdenver.edu/offices/office-of-informationtechnology/software/how-do-i-use/onedrive> (<https://www1.ucdenver.edu/offices/office-of-informationtechnology/software/how-do-i-use/onedrive/>)
- https://www1.ucdenver.edu/docs/default-source/offices-oit-documents/how-to-documents/onedrive-stayingsecure.pdf?sfvrsn=668bb7b8_4 (https://www1.ucdenver.edu/docs/default-source/offices-oit-documents/how-to-documents/onedrive-stayingsecure.pdf?sfvrsn=668bb7b8_4)

Unit Responsibilities

- Unit educates their workforce members on the unit's specific procedures and requirements as necessary. Training requirements for gaining access to Unit Information Systems are listed below.
 - Required skillport courses in UCDAccess once beginning employment term:
 - CU: Information Security and Privacy Awareness (u00063)
 - CU: FERPA (u00049)
 - Per OIT's Active Directory compliance, users must create a password to meet OIT's standards for mail, AD, domain access, etc. This password is changed each quarter, and must be different from the previous 12 passwords. See password policy below:
- *Password must be at least 16 characters in length.*
- *Password must contain letters from at least three out of the following five categories: Uppercase alphabetic characters (A-Z); Lowercase alphabetic characters (a-z); Numerals (0-9); Non-alphanumeric characters (for example: !, \$, #, or %); Unicode characters.*
- *Password must not contain any of user ID, first name, or last name when their length is larger than 2.*
- *Password must not be one of the 12 previous passwords.*

User Responsibilities

- CU Denver|Anschutz workforce members must observe the CU Denver Information Systems' Appropriate Use Policy (AUP) which outlines expectations regarding the ethical and permissible use of CU Denver|Anschutz computing resources.
- CU Denver|Anschutz workforce members must follow the provisions of the CU Denver|Anschutz OIT Security Computing policy in regard to guarding against, detecting, and reporting malicious software
- CU Denver|Anschutz workforce members shall not attempt to alter audit records or avoid accounting for computing services. (See CU Denver Information Systems' Appropriate Use Policy (AUP))
- CU Denver|Anschutz workforce members shall not use CU Denver|Anschutz resources to develop or execute programs that could infiltrate the systems or alter the software components of the workstations.
- CU Denver|Anschutz workforce members must follow the Portable Media Security Policy. Portable media can include, but is not limited to, laptops, mobile devices such as personal digital assistants (PDAs) or other types of wireless handheld devices, USB flash drives, memory sticks, and any other portable device used to store or transport data.
- CU Denver|Anschutz workforce members must follow the Visitor Control guidelines outlined in the Access Control Policy when visitors

are on-site. g) All members of the CU Denver|Anschutz workforce are reminded to wear their badges while on University property.

Action

All suspected policy violations, workstation compromise, virus infections, and other conditions which might jeopardize CU Denver|Anschutz information systems, data, or business must be immediately reported to the OIT Security Office.

IT Access Control Policy

Introduction

The purpose of the access management section is to establish processes to control access and use of Graduate School information resources. Access management incorporates Role Based Access Controls (RBAC), privileged user access, access definitions, roles, and profiles. The user shall only be granted access to the minimum necessary information that they require to perform their duties.

Policy Statement

The use and access of Graduate School information systems is restricted to appropriately identified, validated and authorized individuals. The following subsections outline the requirements for gaining access to Graduate School information systems.

Additional Resources:

- OWASP Access Control Cheat Sheet: https://github.com/OWASP/CheatSheetSeries/blob/master/cheatsheets/Access_Control_Cheat_Sheet.md
- Access Control in Software Development: https://wiki.owasp.org/index.php/Category:Access_Control (https://wiki.owasp.org/index.php/Category:Access_Control/)
- OWASP Cheat Sheet Collection: <https://github.com/OWASP/CheatSheetSeries> (<https://github.com/OWASP/CheatSheetSeries/>)

Access Control Procedures

Systems must develop, adopt or adhere to a formal, documented access control procedure that addresses purpose, scope, roles, responsibilities, management commitment, coordination among organizational entities, and compliance.

Account Management-User Access

- Access management to information systems to be granted (ex. passwords, etc)
 - Graduate School relies on OIT authentication systems (AD, etc.) to authorize users of the University of Colorado Denver|Anschutz computing resources.
 - The GS IT Admin adjusts user permissions based on requests of their supervisors for server shares.
 - Default passwords are to be changed or disabled, replaced with secure passwords
- Responsible party for monitoring and reviewing access rights
 - GS IT Admin reviews access rights upon every new hire, every termination, and at a bi-annual schedule, after each semester.
- Access and use of systems resources and subsequent monitoring (project space/ application/storage, remote access, mobile devices, etc.)

- Systems are audited internally every semester, reviewing security groups and users on GS domain
- Users with edit access on web pages are also reviewed
- Remote access is limited to access via GlobalProtect VPN hosted by OIT
- Off-boarding process for users that are no longer working on the project, terminated, or have a change in job role.
 - User's supervisor notifies and submits request to GS IT Admin
 - GS IT Admin removes user from security groups, using the concept of least privilege, or removing altogether if terminated
- GAIA access has always been granted to Departmental and Program administrators upon request (desire to use GAIA for data storage and reporting). Users are only given as much access as required (typically level 4 for admins). Faculty are also given access, but with a lower level (2).

Workstation Use and Security

- Each workforce member must use a unique user name and strong password.
- Computer workstations must maintain security configurations that restrict access to only those workforce members that have been legitimately granted access. Recommended security configurations include, but are not limited to:
 - Enabling a password protected screen saver;
 - Setting computers or applications to automatically terminate a computing session after a set period of idle time;
 - The use of campus standard anti-virus products;
 - Applying security patches to computer software applications and operating systems.

Physical Access

- Facility Access Controls
 - Facility security consists of:
 - On both campuses, the Graduate School is locked down outside the hours of 8am-5pm, requiring approved card access.
 - Upon entry, each office and subsequent equipment is further protected by physical lock-and-key.
- Access Control
 - Access determinations must be based on the workforce member's role or function within the unit. Determinations of access should take into account at what time(s) access will occur and under what conditions.
 - Unit managers or supervisors will work with the Badging and Security Services Security Badging Office/Electronic Security Department to request and recommend access for each member of the unit workforce. For specific access forms, contact the Badging and Security Services Security Badging Office/Electronic Security Department at (303) 724-0399.
 - If a workforce member's access needs change or end, the unit manager or supervisor must work with the Electronic Security Department to modify or terminate the member's access.
 - Anschutz Medical Campus
 - Associate Dean works with Electronic Security Department to enable/disable access based on new employment, termination, or move within CU.
 - The supervisor or HR advisor submits the request to Associate Dean, who funnels all requests accordingly

- The unit manager or supervisor must ensure that access is limited to what is appropriate for the workforce member's job function.
- Validation Procedures
 - Once an individual's facility access has been determined and recommended by the individual's supervisor, validation of identity is performed by the Badging Office.
 - All members of the CU Denver/Anschutz workforce are reminded to wear their badges while on University property.
- Maintenance Records
 - The Badging and Security Services Security Badging Office/Electronic Security Department is responsible for maintaining records on all installations, repairs, or replacements of access control devices at a building or campus-level.

User Responsibilities

- Graduate School educates their workforce members on the Graduate School's specific procedures and requirements as necessary. Each Unit will educate users on the Acceptable Use Policy specific to their environment.
 - See Acceptable Use Policy, section E
- Please explain your unit's training requirements for gaining access to Graduate School Information Systems.
 - See Acceptable Use Policy, section D

Graduate School Access Review

Review accounts on a periodic basis, but no less than every 6 months.

Graduate School Policy Review

Review and update policy and procedures on an Annual basis.

Document Retention

All unit procedures, documentation of decisions made, information system activity reviews, and investigations conducted pursuant to this policy must be retained for a period of no less than six (6) years from the date the policy was last in effect or from the date the decision or investigation was made.

Graduate School Policies & Procedures

Please reference the documentation on the Graduate School website at https://graduateschool.cuanschutz.edu/docs/librariesprovider138/denver-anschutz-graduate-school/resources/gs-policies-and-procedures.pdf?sfvrsn=303d71bb_8

Inclement Weather Policy

Snow Policy

In the event of inclement weather the Graduate School staff, its faculty and students will follow the University closure announcements and schedule. If the university remains open, the faculty, administrators, and staff will be expected to make every reasonable effort to maintain their regular work schedules, but are advised to exercise their judgment and avoid undue risks in traveling. Employees who anticipate arriving late or not arriving at work at all should notify their immediate supervisor.

Delayed Opening

In the event of a delayed opening, the specific time of opening will be announced to the campus community through the local media and via <https://www.cuanschutz.edu/police/anschutz-alerts> (<https://www.cuanschutz.edu/police/anschutz-alerts/>). All faculty and staff are expected to arrive on campus by the delayed opening time. Students are expected to report to their regularly scheduled classes. In a delayed

opening, all classes scheduled prior to the set time of opening are cancelled for the day. Students will be responsible for any academic work missed due to absences caused by severe weather conditions. It is the individual student's responsibility to take the initiative to make up any missed class work. It is the faculty member's responsibility to provide a reasonable opportunity for students to complete assignments or examinations missed due to inclement weather. Faculty members have discretion in determining whether additional classes will be added for the class or if additional work is assigned due to a closure or delayed opening.

Early Closure

In the event that weather conditions become unfavorable during the day and necessitate the early closure of the campus or the school, classes will be cancelled for the remainder of the day. Should this decision be reached by the Graduate School Dean prior to a formal announcement being made for an early campus closure, an email will be sent to all graduate students, graduate program administrators, and notification posted on the Graduate School website regarding an early closure.

Vacation & Leave Policy

GRADUATE SCHOOL POLICY FOR PHD STUDENT VACATION AND LEAVE

The Graduate School at the University of Colorado Anschutz Medical Campus (CU Anschutz) has established the following leave policy for PhD students who receive full-support stipends from CU Anschutz PhD programs (hereafter referred to as "graduate students"). Full-time graduate students (as defined in the Graduate School Policies and Procedures (<https://graduateschool.cuanschutz.edu/docs/librariesprovider138/denver-anschutz-graduate-school/resources/gs-policies-and-procedures.pdf>)) in these programs are eligible for campus holidays, vacation, sick leave, and parental leave. Detailed below are the amounts of leave time allowable for students to maintain full-time student status, as well as leave reporting requirements.

LEAVE TYPES AND AMOUNTS

Vacation and Holidays. Graduate students shall receive all CU Anschutz campus holidays and may receive an additional 10 week days (excluding weekends) of vacation per academic year, with no year-to-year accrual. Graduate students shall continue to receive stipends during vacations and holidays. Graduate students taking courses are expected to attend all classes and take all exams as scheduled. The times between academic terms and the summers are all considered active parts of the training period and leave must be taken in accordance with this policy. Graduate students supported via extramurally funded projects or training grants must comply with sponsor requirements regarding effort.

Sick Leave. Graduate students may continue to receive stipends for 11 week days (excluding weekends and campus holidays) of sick leave per academic year, with no year-to-year accrual. Under exceptional circumstances, additional sick days may be granted following a written request from the student and approval by the student's thesis advisor (if determined) and graduate program director. Sick leave may be used for medical needs related to pregnancy and childbirth. Graduate students supported via extramurally funded projects or training grants must comply with sponsor requirements regarding effort.

Parental Leave. Graduate students may continue to receive stipends for 8 work weeks (excluding weekends and campus holidays) of parental leave per academic year for the adoption or the birth of a child. Either or both parents are eligible for parental leave. Graduate students must

provide advance notification to their thesis advisor (if determined) and graduate program director prior to taking parental leave. Sick leave may supplement parental leave under the circumstances noted above. Graduate students supported via extramurally funded projects or training grants must comply with sponsor requirements regarding effort.

Unpaid Leave. Individuals requiring more than 11 week days (excluding weekends and campus holidays) of sick leave or more than 8 work weeks (excluding weekends and campus holidays) of parental leave per academic year must seek approval from their thesis advisor and their graduate program director for an unpaid leave of absence. A leave of absence must be requested by the student and approved by their thesis advisor (if known) and program in advance of taking the leave of absence. The leave period and conditions must be documented at the times of leave and of re-entry into the program. A copy of this agreement must be submitted to the Graduate School in advance of the leave of absence. Graduate students supported via extramurally funded projects or training grants must comply with sponsor requirements regarding effort.

Unused Leave at Termination. Upon graduation or termination, a graduate student forfeits all unused vacation, sick, and parental leave; there is no payout for remaining leave balances. Remaining leave balances cannot be transferred to other positions within the University of Colorado system.

LEAVE REQUESTS AND REPORTING

Graduate students are required to report leave requests (vacation, sick, and parental leave) in accordance with program-defined reporting processes. Reporting processes may include reporting requests to 1) their thesis advisor, 2) the program in which they reside, and/or 3) their thesis advisor's home department or unit. It is the graduate student's responsibility to identify the process for reporting leave.

Graduate students who have not yet joined a thesis lab (e.g., first-year graduate students) are advised to discuss with potential dissertation advisor's expectations regarding vacation and leave. After a graduate student has selected their thesis advisor and joined the advisor's research program, they must request and receive approval for vacation leave from their thesis advisor in advance of taking vacation leave. The graduate student must make all necessary arrangements in advance to cover any responsibilities that the graduate student has for the research program or for maintaining their ongoing experiments and/or resources (e.g., cell lines, animals). In all cases, graduate students supported via extramurally funded projects or training grants must comply with sponsor requirements regarding effort.

LEAVE DISPUTES

All leave disputes between graduate students and their thesis advisor and/or program must be resolved by graduate program leadership and/or the program's home school/college.

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Graduate School Certificates

Overview

Graduate certificates are more narrowly defined credentials that may benefit working professionals who aren't ready or able to commit to a full degree or current degree-seeking students looking to gain and draw attention to proficiency in a topic. Graduate certificates are not degrees, and as such, are not typically eligible for financial aid. Some can be 'stacked' (taken over time) to meet the requirements of a Master's degree.

Detailed descriptions of each graduate certificate and admissions requirements can be found on the Certificate's page.

The following certificates are available through the Graduate School:

- Anatomical Sciences Education (Certificate) (p. 194)
- Bioethics & Humanities in Health (Certificate) (p. 196)
- Biomedical Science (Certificate) (p. 201)
- Community-Based Hospice & Palliative Medicine Fellowship (Certificate) (p. 203)
- Dissemination & Implementation Science (Certificate) (p. 206)
- Multidisciplinary Geriatrics (Certificate) (p. 208)
- Palliative Care (Certificate) (p. 210)
- Personalized & Genomic Medicine (Certificate) (p. 212)
- Research Management and Compliance (Certificate) (p. 214)
- Translational Research on Alzheimer's Disease (Certificate) (p. 216)

Anatomical Sciences Education (Certificate)

Overview

The anatomical sciences are an essential portion of education for health science professional programs; however, recent studies have shown a decrease in anatomy educators qualified and trained to teach anatomy in the United States. The Anatomical Sciences Education Certificate in the **Modern Human Anatomy Program (p. 239)** provides formalized coursework and instruction, which ensures that students graduating from the Modern Human Anatomy program (p. 239) with the certificate have the level of competence necessary to become university instructors or community college professors.

The Certificate in Anatomical Sciences Education within the Master of Science in Modern Human Anatomy (p. 239) curriculum provides students with the pedagogical foundations, mentoring, and practice necessary to become effective educators in the anatomical sciences. While the certificate curriculum and the Modern Human Anatomy Master of Science (p. 239) (parent program) share a common 1st year curriculum, the curricular differences occur in the 18-credit 2nd year required coursework. Certificate students must follow a 2nd year curriculum dedicated to the study, practice, and scholarship of anatomical education, including an 8-credit capstone project with an educational component. This focused certificate curriculum provides a direct pathway for students to become educators at the community college, university, and professional school levels.

Admissions Requirements

The Certificate in Anatomical Sciences Education is offered only to degree-seeking students in the Master of Science in Modern Human Anatomy (MHA) program. MHA students are required to apply to the certificate program.

Those interested in applying for the Certificate in Anatomical Sciences Education must complete the following requirements:

- Take and pass ANAT 6412 Foundations of Teaching (1) and at least 8 credits out of the following Fall semester courses: ANAT 6205 Imaging and Modeling (4), ANAT 6310 Neuroanatomy (4), ANAT 6321 Human Histology (4).
- Take and pass ANAT 6111 Human Gross Anatomy, and ANAT 6330 Human Embryology, in the Spring Semester. Please Note: decisions of admittance to the teaching certificate are usually made before the Spring Semester courses have been completed. Matriculation into the teaching certificate will be contingent on spring course performance.
- Complete the online application, which will be sent out by the Directors of the Certificate in Anatomical Sciences Education during the Spring Semester. The application consists of short essays detailing the student's motivation for pursuing the certificate and how participation in the certificate will contribute to the student's education and career goals.

Meeting the above requirements does not guarantee admission into the Teaching Certificate.

Certificate Requirements

Please note: Year 1 Summer, Year 2 Fall, and Year 2 Spring are flexible, and courses can be taken in many orders and combinations.

First Year

Year 1		Hours
Fall	ANAT 6412	Foundations of Teaching
		1
Hours		1
Spring		
N/A		
Hours		0
Summer		
ANAT 6950	MSMHA Capstone Project	2
		2
Hours		2
Total Hours		3

Second Year

Year 2		Hours
Fall	ANAT 6600	Experimental Design and Research Methods
		1
	ANAT 6911	Advanced Teaching Practicum
		3
ANAT 6950	MSMHA Capstone Project	3
		3
Hours		7
Spring		
ANAT 6490	Advanced Teaching in Anatomical Sciences	3
		3
ANAT 6950	MSMHA Capstone Project	3
		3
Certificate Approved Elective		3
Hours		9
Total Hours		16

Learning Objectives

The Anatomical Sciences Education Certificate trains graduate students to be capable and skilled educators who are successfully able to:

- 1) Understand and apply research-based pedagogical theory in the anatomical sciences
 - a. Discuss and analyze research-based pedagogy literature.
 - b. Understand frameworks for making curricular decisions.
 - c. Develop content-based instructional materials using pedagogical theory.
- 2) Teach anatomical sciences at a professional level
 - a. Develop content-based instructional and pedagogical skills.
 - b. Implement active learning techniques and investigate the impact of teaching for diversity in health science programs.
 - c. Apply pedagogical theories to practice in a professional program.
- 3) Develop professionally through structured mentorship by Academy of Medical Educators faculty
 - a. Incorporate faculty feedback in teaching methods.
 - b. Incorporate faculty feedback in educational materials.

Courses

ANAT 6412 - Foundations of Teaching (1 Credit)

This course will provide students with training, practice, and constructive feedback in effective teaching skills in order to be successful in the biomedical professions. Topics include learning objectives, the neurobiology of learning, assessments, and effective communication within and outside the classroom.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6490 - Advanced Teaching in Anatomical Sciences (3 Credits)

This course offers a hands-on, supervised experience as an anatomical sciences educator. Readings and discussions will enhance your understanding of educational pedagogy. You will apply these skills as you develop and deliver lecture and lab content in a classroom setting.

Instructor consent required.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

ANAT 6600 - Experimental Design and Research Methods (1 Credit)

In this course, students will foster and apply strategies that enable critical evaluation of any published research (including basic, clinical, and educational), as well as develop the skills necessary to conduct and appropriately analyze their own research data.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Summer.

ANAT 6911 - Advanced Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Pre-requisite: ANAT degree-seeking student; ANAT 6412

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6950 - MSMHA Capstone Project (1-12 Credits)

The Capstone project is a scholarly and/or research-based pursuit of knowledge and content development in the area of anatomical sciences, modern imaging and modeling technologies, and educational science completed as part of the MS in Modern Human Anatomy. Prerequisite: Must be ANAT degree-seeking student.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Bioethics & Humanities in Health (Certificate)

Overview

People working in health professional fields today face complex challenges that require diverse perspectives and innovative approaches. Whether you are navigating difficult conversations, making policy decisions, researching sensitive topics, or teaching the next generation, you need ways to engage thoughtfully with the human dimensions of this work.

Bioethics and Humanities in Health (BEHH) equips you with practical and critical approaches that blend ethical reasoning with humanistic insights. You'll learn to recognize ethical challenges in your daily work, understand diverse perspectives on illness and wellbeing, discover new ways to address burnout and moral distress, and deepen your understanding of health equity and social justice. Through a combination of real-world cases, reflective practices, and research approaches that bridge humanities and ethics, you'll become more effective in your current role while opening doors to new opportunities.

This graduate certificate program is offered by one of the nation's leading centers bridging bioethics and health humanities. Our renowned faculty draw on their expertise in clinical and public health ethics, empirical research, and community-engaged scholarship to address local and global health challenges. You'll join a group of professionals deeply connected to Colorado's diverse health landscape, building on CU Anschutz's long-standing commitment to inter-professional education. Our flexible program structure and competitive tuition rates—including qualifying for CU's tuition assistance benefits program for eligible employees—make it possible to advance your career while maintaining work-life balance. Whether you choose to take a single class, complete the entire graduate certificate, or build a foundation for advanced training, we offer pathways that fit your professional goals.

Admissions Requirements

To apply for admission applicants must submit the following:

1. **Online BEHH Application**
2. **Personal Statement:** In a 1-2 page essay, describe your specific interest in health humanities and ethics:
 - Explain how this program aligns with your professional goals
 - Share what you hope to contribute to and gain from the program
 - Discuss any relevant experience in any of these areas:
 - Ethics consultation or committee work
 - Public health or clinical work (e.g., direct patient care, population health programs, health education, disease prevention, healthcare delivery, community health initiatives)
 - Research (clinical, public health, social science, or humanities/arts-based research)
 - Service and community engagement
 - Leadership, policy, or administrative work
 - Teaching or mentoring
 - Creative arts and humanities-related work

3. Professional Resume or Curriculum Vitae:

Include all professional work experience since earning your bachelor's degree; Highlight relevant health-related research, teaching, practice, or other educational experiences; List any publications, presentations, or special projects related to healthcare, ethics, or humanities; Include volunteer work and professional memberships if applicable.

4. Official Academic Transcripts

Submit official transcripts from all institutions where you earned a degree

5. International students must meet ALL of the requirements above and those required by International Admissions.

Certificate Requirements

A total of **12 credit hours** in approved courses is required to complete the Certificate in Bioethics and Humanities in Health.

All students must complete one required foundation course (**BEHH 5010**), which comprises 3 of the total required 12 credit hours.

Selections from the approved elective course list will satisfy the remaining 9 credit hours.

Code	Title	Hours
Core Course		
BEHH 5010	Foundations of Bioethics & Humanities in Health	3
Elective Courses		
BEHH 5210	The Art of Observation	1
BEHH 5211	The Art of Listening: Music and Medicine	1
BEHH 5212	Pain and Dentistry in the History of Western Art	1
BEHH 5213	Reflections on Incarceration and Well-Being	1
BEHH 5214	From Burned Out & Extracted to Regenerative Healing: William Carlos Williams' The Doctor Stories	1
BEHH 5215	Global Health Humanities	1
BEHH 5250	Topics in Media, Medicine and Society	3
BEHH 5310	Ethical Care in Patient's Living with Dementia	1
BEHH 5311	Moral Distress in Healthcare	1
BEHH 5350	Narrative Principles and Practices in Healthcare	3
BEHH 5410	Research Methods in Health Humanities	3
BEHH 5450	Addressing Health Stigma in Social Contexts	3
BEHH 5550	Independent Study in Health Humanities & Health Ethics	1-3
BEHH 5655	Introduction to Public Health Ethics	3
BEHH 5750	Pain, Its Paradoxes & the Human Condition	3
BEHH 5850	Clinical Ethics	3
BEHH 5910	Race, History and Health in Brazil	3
BEHH 5911	Medicine, Nazism, & the Holocaust Study Abroad Course	3

Learning Objectives

- Apply multiple analytical frameworks to complex health-related challenges
- Demonstrate cultural humility and emotional intelligence in professional contexts

- Analyze social determinants of health and systemic factors affecting health outcomes
- Evaluate and navigate competing priorities in health-related decision-making
- Apply engagement strategies that enhance professional effectiveness and meaning
- Design and conduct research incorporating humanities and ethics methodologies
- Develop tools and practices for professional resilience and wellness
- Demonstrate commitment to ethical principles and practices in health-related work

Courses

BEHH 5010 - Foundations of Bioethics & Humanities in Health (3 Credits)

This course combines two essential areas of study: The first eight weeks focus on the foundations of bioethics, examining moral frameworks used in medical and health settings and their application to clinical, organizational, and population-based cases. The second eight weeks explore the foundations of narrative practice in medicine through engagement with various texts and other materials. Each section maintains its distinct focus while providing students with complementary perspectives on health and health care.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5210 - The Art of Observation (1 Credit)

The Art of Observation is designed to sharpen the perceptual and analytical skills, which are essential for excellence in clinical practice in dentistry, medicine, and other professional fields. Participants will engage with a selection of visual art pieces and photographic works. Through guided interaction with these materials, students will hone their observational acuity, practice articulating their perceptions and insights, and engage in collaborative analysis reminiscent of differential diagnosis processes. This course teaches Visual Thinking Strategies (VTS), a protocol for facilitating group discussions around visual materials. Students will master the methodology of VTS, including careful material selection, silent observation periods, strategic questioning, neutral facilitation, and effective paraphrasing. The skills cultivated in this course directly translate to clinical scenarios, where the ability to pinpoint key clinical indicators, recognize symptomatic patterns, and interpret patient data flexibly and accurately is paramount for effective patient care. The goals are to increase compassion and empathy, encourage tolerance for ambiguity and diversity, recognize biases in interpretation and foster reflection and honest communication using the arts to gain these skillsets.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5211 - The Art of Listening: Music and Medicine (1 Credit)

The Art of Listening is an innovative course that explores the profound intersection of musical and clinical listening skills to enhance practice in medicine, dentistry, and other healthcare fields. Drawing upon the unique resources of the Anschutz Campus, including a live performance by the Campus Chorus and/or Orchestra, this course develops healthcare professionals' abilities to listen deeply, empathetically, and analytically. Through immersive musical experiences and clinical scenarios, participants will develop a heightened awareness of auditory nuances, rhythms, and harmonies that parallel the complexities of human health and disease. The course emphasizes how musical immersion - can inform and enhance clinical listening skills. Students will learn to apply these techniques to medical contexts, developing their ability to hear both what is said and unsaid, recognize patterns, and maintain focused attention during patient encounters. Participants will explore how musical narratives unfold, mirroring the way patient histories are constructed and understood in clinical settings. Special attention is paid to the emotional and cultural aspects of music, encouraging students to reflect on how these elements influence perception and interpretation in healthcare. This approach fosters empathy and cultural competence, crucial attributes in today's diverse healthcare landscape. By combining experiential learning with practical clinical applications, the course aims to cultivate not just better listeners, but more attentive, empathetic, and perceptive healthcare professionals. Students will develop advanced listening skills essential for excellence in patient-centered care, while gaining a deeper appreciation for the role of music in healing and human connection.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5212 - Pain and Dentistry in the History of Western Art (1 Credit)

If you run a basic search for historical images of pain in Western art since 1500, a curiosity emerges: A significant proportion of the results relate to dentistry and dental pain. In other words, the history of dentistry and the history of pain form overlapping iconography in the history of Western art. Given the near universality of dental pain in human experience, the frequency of its representation is no mystery. However, one of the many paradoxes of pain is that although pain is universal, it is also quintessentially subjective: my pain is different from your pain, even if the cause of the pain is identical. Literature scholar Elaine Scarry notes another paradox: pain is simultaneously one of the most privately certain and publicly doubted experiences. In addition, some who experience pain do not seem to suffer, while others who suffer do not seem to experience pain. This interdisciplinary short course uses the dual iconography of pain and dentistry as a vehicle to explore the history of pain and its relationship to dentistry in the early modern and modern eras. Learners will acquire historical fluency in key themes and issues related to dental practice and patient experience that they can apply to contemporary dental medicine.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5213 - Reflections on Incarceration and Well-Being (1 Credit)

This discussion-based course focuses on understanding incarceration as a structural determinant of health. Through engaging with written work from incarcerated writers, as well as critical theories and empirical texts, students will explore issues related to how the system of incarceration affects individual, community, and societal health and well-being. Weekly discussions will include topics such as health and mortality data collection and communication, healthcare access and delivery, and conditions of confinement. They also include topics along axes of identity including birthing and parenting, aging inside, and incarceration of transgender individuals. Students will apply their learnings in-class to a final paper.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5214 - From Burned Out & Extracted to Regenerative Healing: William Carlos Williams' The Doctor Stories (1 Credit)

"Burnout is a Surrender," said Dr. Martin Luther King. Reflecting on this Robert Coles writes that those who are burned out can "use such low points to become more realistic and reflective and, in the long run, sturdier." In this spirit, spend a semester surrendering to the joys, hazards, and complexities of a life attending to patients by sitting with *The Doctor Stories* by William Carlos Williams. The goal of this course will be to provide opportunities for close presence to these stories. In doing so you may acquire a knack for what John Launer calls "a radical facilitative presence" - both for your own healing soul and for your patients. Each week you will read one story and follow a standard template to reflect on how the story provoked movement inside of you. Then throughout the week you will be asked to take 5 minutes each day to write down how a specific clinical encounter connects to the week's story. We will meet in person to casually commune over our shared experience with these stories.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5215 - Global Health Humanities (1 Credit)

"Global Health Humanities" offers a unique interdisciplinary exploration of health, illness, and healing across cultures through the lens of the humanities. Participants will investigate how universal human experiences of health and illness are interpreted and expressed differently across diverse cultural contexts. Through analysis of narratives, historical accounts, and artistic representations, we will explore questions such as: How do cultural beliefs and practices influence perceptions of what is considered healthy or pathological in oral health? In what ways do storytelling and artistic expression reveal the lived experiences of mental illness in different societies? How have colonial legacies and global power dynamics shaped health inequities? A key focus will be on amplifying marginalized voices in global health. Students will engage with works by authors, artists, and thinkers from the Global South, as well as from historically underrepresented communities within the Global North. This approach will highlight how diverse cultural perspectives can enrich our understanding of health and contribute to more equitable and effective global health strategies.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5250 - Topics in Media, Medicine and Society (3 Credits)

This interdisciplinary course will explore the interconnections and intersections between medicine and media, investigating a significant collaborative enterprise that characterizes American culture.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5310 - Ethical Care in Patient's Living with Dementia (1 Credit)

The population in the United States aged 65 and older is expected to increase 47% by 2050. Advancements in technology and improvements in care have enabled our population to experience increased age-related disease because of an extended lifespan. Currently, nearly 55 million people worldwide are living with Dementia, with the number predicted to increase to 78 million in 2030. Individuals living with Dementia are often assumed to lack decision-making capacity. However, decision-making capacity is time and decision specific, so individuals with Dementia often have a wide range of decision-making capabilities. Patients in our care with limited capacity are often still able to express preferences and desires. This condition is complicated by the large transition to a model of aging in place. Aging in place refers to the ability of older individuals to live independently in their homes as they age, rather than moving to an assisted living or nursing facility. This model emphasizes creating a safe and supportive environment that allows individuals to maintain their autonomy and quality of life through connection to community resources, home modifications, support services, and technology. This course provides an in-depth examination of the ethical considerations surrounding the care of patients living with dementia. Participants will explore key concepts such as autonomy, informed consent, and the challenges of decision-making in the context of cognitive decline. Through case studies and interactive discussions, the course will address the balance between respecting patient rights and ensuring their safety and well-being. Participants will learn best practices for communicating with patients, involving families in care decisions, methods to improve the care setting and navigating complex ethical dilemmas. By the end of the course, participants will be equipped with knowledge and skills to deliver compassionate, ethical care that honors the dignity and individual

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5311 - Moral Distress in Healthcare (1 Credit)

As technology has continued to develop throughout the world and our ability to artificially sustain life has improved, the instances of ethical dilemmas and moral distress have only increased. When an ethics issue arises in healthcare, the ethics issue is typically known but the correct direction of action is unclear or not delineated. This frequently arises in the way of conflicting obligations. For example, a pregnant woman with decision making capacity is in our care and is denying medical interventions to save the fetus. Do we respect patient autonomy and the patients right to decide for themselves, or do we prioritize the good of the fetus? Moral distress is experienced by workers that encounter an ethics issue where the correct direction for action is clear, but the individual is unable to act. This can be due to institutional constraints, role constraints or even legal constraints based on the location of practice. Moral distress leads to emotional discomfort experienced by healthcare professionals when they are unable to act in accordance with their ethical beliefs and becomes especially apparent when conflict is faced between personal values, institutional policies, patient wishes, or resource constraints. When individuals come together and recognize issues of moral distress, we can work more effectively as a team to support one another. Since ethical dilemmas have the potential to lead to moral distress, it's important that medical professionals have some degree of ethical competence to recognize when issues may arise. This course explores the complex issue of moral distress in the healthcare setting, where professionals confront ethical dilemmas that challenge their values and principles. Participants will examine the causes of moral distress, including systemic issues, institutional policies, and personal beliefs, and recognize the influence of moral distress.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5350 - Narrative Principles and Practices in Healthcare (3 Credits)

This course introduces students to the intellectual and clinical discipline of narrative work in healthcare. Students will explore the theoretical foundations of narrative in healthcare and participate in structured workshops to improve close reading of texts and writing skills. Requisite: 008754

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5410 - Research Methods in Health Humanities (3 Credits)

The Health Humanities Research Methods course provides comprehensive training in qualitative and interpretive research approaches used to understand lived experiences of health, illness, and healthcare through humanities and social science perspectives. Students will gain theoretical foundations in phenomenology, narrative inquiry, ethnography, discourse analysis, and arts-based methods, with particular attention to ethical approaches for working with vulnerable populations in healthcare settings. The course emphasizes how different methodological traditions - from literary analysis to visual ethnography to oral history - can reveal unique insights into how people make meaning of health experiences and navigate healthcare systems. Through hands-on research exercises, students will practice multiple data collection methods including semi-structured interviews, participant observation, close reading, visual analysis, and participatory arts-based approaches. The course pays special attention to power dynamics in healthcare research, trauma-informed practices, and methods for amplifying traditionally marginalized voices. Students will develop practical skills in research design, data collection, interpretation, and presentation while considering how different methodological choices align with research questions about lived experiences of health and illness.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5450 - Addressing Health Stigma in Social Contexts (3 Credits)

This interdisciplinary course will equip students with the tools needed to understand health stigma, to construct an explanation as to why it is so common and to explain what, if anything, should be done to address such stigma. Requisite: 008754

Grading Basis: Letter Grade

Typically Offered: Spring.

BEHH 5550 - Independent Study in Health Humanities & Health Ethics (1-3 Credits)

This independent study will permit students to pursue specialized topics and/or previously studied topics in health humanities and health ethics in greater depth and with more flexible scheduling. Requisite: 008754

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

BEHH 5655 - Introduction to Public Health Ethics (3 Credits)

This course provides learners with an introduction to public health ethics. The material explores differences between public health ethics & health care ethics, important frameworks used in public health ethical analysis, and significant practice in analyzing public health ethics cases.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5750 - Pain, Its Paradoxes & the Human Condition (3 Credits)

This course explores the lived experiences of pain, its paradoxes, and the extent to which it is a key feature of the human condition. Analyses will be drawn from history, religious studies, philosophy, literature, poetry, public health, medicine, and law.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5850 - Clinical Ethics (3 Credits)

The purpose of this course is to introduce students to the theory, methods, history, and application of clinical ethics. Course sessions will include instructor- and student-led didactics. Students will be expected to discuss issues and cases in clinical ethics and critically analyze ethical topics and cases in oral and written formats.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5910 - Race, History and Health in Brazil (3 Credits)

Brazil has a long and extensive history of African enslavement, and in the coastal city of Salvador, African influences are strong and palpable. A large diaspora from different regions of Africa was formed during the colonial period, and this has led to the constant expression—and celebration—of an African heritage in Salvador. Today, Afro-Brazilian cultural elements in music, religion, and capoeira, an Afro-Brazilian art form, are now realities around the world. Brazil's legacies of slavery, colonialism, and segregation, along with its stark socio-economic inequalities, have disproportionately affected the health and well-being of its Afro-Brazilian communities. At the same time, the country is known for its leadership in universalizing access to healthcare, including life-saving HIV treatments. Grassroots activists and organizations operate both alongside of and in opposition to state responses to ongoing epidemics, including COVID-19. Brazil's therapeutic landscape is further complicated by a sophisticated system of traditional medicine that serves as alternative and complementary treatments to widespread biomedical options. The country—and especially the city of Salvador—is thus a critical location for the study of race, history, and health. This course is a 10-day study abroad program in which students will be immersed in the history, culture, and everyday lives of Afro-Brazilians in Salvador, Brazil. The program combines homestays with Brazilian families with classroom and field experiences. Guest lectures from Brazilian experts will discuss topics such as the nation's history, health, politics, music, religion, education, and Carnival. Activities will focus on the interplay of race and health to better understand the lived experiences and rich past of Afro-Brazilians.

Grading Basis: Letter Grade

Typically Offered: Spring.

BEHH 5911 - Medicine, Nazism, & the Holocaust Study Abroad Course (3 Credits)

This immersive course explores the complex and challenging history of medicine, Nazism and the Holocaust – including site visits to Krakow, the Plaszow concentration camp, and the Auschwitz-Birkenau concentration and extermination camps – and the legacy of this history for health care and society today. Its central goal is to foster a deeper comprehension of this history and how it continues to affect contemporary medical and public health research, practice and policy. Through this lens, and in ways only accessible through the power of being present in the place where historical events unfolded, learners will gain invaluable insights into the potential impacts of racism, antisemitism, and authoritarian ideologies on health care and society. The transformative experience of visiting Krakow and Auschwitz with historians, health professionals and colleagues will equip learners with essential skills for personal and professional identity formation, including critical thinking, cross-cultural communication, and ethical reasoning in healthcare. Brief Course Description: This course includes pre-work and 2 pre-trip synchronous sessions, and then it centers around a 4-day immersive study abroad visit to Krakow, Poland. The onsite experiences include (1) a full-day walking tour with an historian of Krakow and the Plaszow concentration camp, (2) a full day at the Auschwitz-Birkenau camps, conducted in collaboration with the Auschwitz-Birkenau Memorial and Museum, (3) a day-long international conference featuring experts on the history of medical involvement in Nazism and the Holocaust, and (4) a day of workshops. Each day ends with an opportunity for group debriefing and unpacking the often-intense experiences of that day. Learners will engage in classroom and field activities led by international experts to unpack the complex interplay of medicine, public health, science and ethics during the Nazi regime and the Holocaust.

Grading Basis: Letter Grade

Typically Offered: Fall.

Policies

All students taking a BEHH class (except for CSPH) must enroll in the Graduate School as a BEHH Graduate Certificate student, regardless of the student's intent to take one class or complete the certificate program. For any questions about this policy, please contact laurie.munro@cuanschutz.edu.

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Biomedical Science (Certificate)

Overview

The one-year Graduate Certificate Program in Biomedical Sciences (BiSC) is composed of 12 graduate credits that will have to be earned through four required courses plus two elective credits. The courses cover topics in the biomedical sciences, statistics, R programming, plus an elective science course. Furthermore, students will be required to attend a course on Case Studies in Responsible Conduct of Research.

These courses are an integral part of the Master's Program in Biomedical Sciences and Biotechnology; therefore, if a graduate certificate student would later like to enter the Master's Program in Biomedical Sciences and Biotechnology, all certificate credits can be transferred into that program.

Admissions Requirements

- A bachelor's degree with a minimum GPA of 3.0
- Complete transcripts of undergraduate work and any previous graduate work
- A completed application to Graduate Studies
- Two academic letters of recommendation
- Prior training in biochemistry, molecular biology and genetics

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Personal Statement: A one-page personal statement describing the applicant's career goals and purpose for studying biomedical sciences and biotechnology
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Personal statement.
 - Three recommendation letters from people who know your professional, academic and/or personal achievements or qualities well.
- Application Fee: A nonrefundable application fee of \$75.00 (U.S. dollars). Checks or money orders should be made payable to the University of Colorado.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:
 - Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu (preferred)
 - If sending a physical transcript, please mail to:

University of Colorado Anschutz Medical Campus
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Certificate Requirements

Code	Title	Hours
BSBT 6072	Foundations in Biochemistry	1.5
BSBT 6073	Foundations in Molecular Biology	1.5
BSBT 6074	Foundations in Cell Biology	1.5
BSBT 6075	Foundations in Genetics	1.5
<i>The above 4 courses are taught sequentially one after the other, and students should enroll in all 4 courses in the Fall semester.</i>		
BSBT 6065	Case Studies in Responsible Conduct of Research	1
BSBT 6067	Statistics for Biomedical Sciences	2
BSBT 6071	Introduction to R Programming	1
Science Elective (from selected list) ^{Any semester}		2
Total Hours		12

Electives

Code	Title	Hours
BMSC 7810	Core Topics in Biomedical Science (Select from approved topics)	2
BIOL 6764	Biological Data Analysis	4
ENVS 6230	Environmental Epidemiology	3
BIOE 5074	Introduction to Laboratory Animal Research	3
CANB 7610	Pathobiology of Cancer Mini-Course	1
CANB 7620	Histophysiology	3
CSDV 7605	Stem Cells and Development: An Integrated Approach	3-4
EPID 6630	Epidemiology	3
HMGP 7600	Survey of Human Genetics	3-4
NRSC 7610	Fundamentals of Neurobiology	3
PHSC 7345	Nanotechnology & Drug Delivery	2
PHSC 7651	Pharmaceutical Biotechnology	3
STBB 7609	Biophysics & Spectroscopy	1.5
TXCL 7751	Neurotoxicology	2
BIOL 5144	Medical Microbiology	3

Learning Objectives

Upon successful completion of their studies, students enrolled in the Biomedical Sciences Graduate Certificate program will be able to:

1. Apply principles of experimental design and problem solving in four focus areas of biomedical sciences.
2. Employ basic tools of R programming.
3. Classify data and use statistical tools to test hypotheses.
4. Recognize and manage ethical challenges related to the responsible conduct of research.

Courses

BSBT 6065 - Case Studies in Responsible Conduct of Research (1 Credit)

Anyone conducting research using federal funding must study RCR. You'll learn expectations and regulations that permeate science. You'll understand consequences of violations to individuals and society. We'll explore misconduct through interactive video, written and video case studies, and other engaging activities.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6067 - Statistics for Biomedical Sciences (2 Credits)

Learn how and when to apply statistical procedures to answer scientific questions relevant to biomedicine, and how to critically assess statistical data for validity.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6071 - Introduction to R Programming (1 Credit)

Introduction to the statistical programming language R geared primarily to biomedical science students with little to no previous programming experience. Basic features of R as a programming language and as scientific computing platform. Basics of data cleaning, visualization, and analysis.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6072 - Foundations in Biochemistry (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in biochemistry including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6073 - Foundations in Molecular Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in molecular biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6074 - Foundations in Cell Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in cell biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6075 - Foundations in Genetics (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in genetics including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Community-Based Hospice & Palliative Medicine Fellowship (Certificate)

Overview

The Fellowship in Community Hospice and Palliative Care Certificate is for physicians who have completed at least the first year of the Master of Science Degree in Palliative Care and are on schedule to complete their degree. Physicians that successfully complete the MSPC and the Community Hospice and Palliative Medicine Fellowship Certificate will be Board Eligible to take the HPM Certification Exam and become Board Certified in HPM. The aim of the MSPC and the certificate is to ease suffering worldwide through exemplary palliative care education.

This program's purpose is to develop Board Certified Hospice and Palliative Care physician specialists through innovative educational pedagogies designed to facilitate learning for physicians in up-to-date, evidence-based, interdisciplinary palliative care concepts using a hybrid learning environment that offers flexible online and live application-based approaches. The participants will receive educational support through the University of Colorado faculty and do their clinical work at their unique participating sites.

Program courses are delivered in a virtual and live learning environment that enriches and informs the fellows' palliative clinical work. The program focuses on advancing clinical knowledge; developing clinical wisdom; building an evidence-based palliative care practice; enhancing communication skills; and addressing physical, psychological, social, and spiritual suffering.

Admissions Requirements

DOMESTIC APPLICATION DEADLINE: Varies, please reach out to Bailee at Palliative Care AMC palliativecareamc@cuanschutz.edu (<http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/graduate-school/graduate-school-certificates/community-based-hospice-palliative-medicine-fellowship/palliativecareamc@cuanschutz.edu>) for the application deadline

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Personal Statement: A one-page personal statement describing the applicant's career goals and purpose for studying palliative care.
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Educational Goals statement.
 - Two recommendations: to be completed by people who know your professional, academic and/or personal achievements or qualities well. As such, references must be from professional contacts, such as employers, supervisors, former faculty, preceptors, or professional colleagues. References from clergy, family members, friends or politicians will not be accepted.
- Licenses and Certificates: A notarized copy of the applicant's current professional license and a copy of the photo identification used in the license notary process or online verification of the applicant's current professional license. (Biomedical Track only)

- Driver's License: A copy of the applicant's driver's license or state-issued ID.
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars). Checks or money orders should be made out to the University of Colorado.
- Interview: After the application is complete a telephone or video interview will be arranged with the applicant and two faculty members. This interview will afford the program the opportunity to understand the needs of the applicant and for the candidate to ask questions. The interview process is designed to assess the applicant's knowledge of the profession, communication, and ability to perform in a positive, professional manner when working with others. To be considered for admission, applicants must participate in the interview process.
- Transcripts: Unofficial copies of all degree-bearing transcripts from post-secondary colleges and/or universities.

International students are not eligible for this certificate program.

Certificate Requirements

MD or DO degree is required, and at least 5 years of clinical experience preferred.

Fellows in the MSPC/HPM track will spend 30-50% of their time over a minimum of 2 years engaged in the MSPC and meeting the requirements for their clinical practice portfolio. Fellowship rotations will occur on an interrupted and part-time schedule in order to accommodate other professional, academic and personal responsibilities. A part-time schedule will include interrupted weeks, or parts of weeks, of clinical rotations. In accordance with ACGME program requirements, Fellows will complete the equivalent of at least 12 months of training in the subspecialty of HPM.

Required Coursework

First Year

Fall		Hours
CHPM 7001	Comm-Based Hospice and Pall Med Fellowship - A	8
Hours		8
Spring		
CHPM 7002	Comm-Based Hospice and Pall Med Fellowship - B	8
Hours		8
Summer		
CHPM 7003	Comm-Based Hospice and Pall Med Fellowship - C	4
Hours		4

Second Year

Fall		
CHPM 7004	Comm-Based Hospice and Pall Med Fellowship - D	8
Hours		8
Spring		
CHPM 7005	Comm-Based Hospice and Pall Med Fellowship - E	8
Hours		8

Summer

CHPM 7006	Comm-Based Hospice and Pall Med Fellowship - F	4
Hours		4
Total Hours		40

Clinical Requirements for Graduation

- Palliative Medicine New Patient Consultations- a minimum of at least 80 **initial consultations** which are submitted and reviewed by faculty.
- **Continuity of Care patient:** see 60 patients across a variety of settings including LTC, ICU, Acute Care, Outpatient, Home Hospice, telehealth visits.
- Hospice Care- This requirement includes Home Hospice visits, Inpatient Hospice Experience and Long-term Care.
 - **Inpatient Hospice/Palliative Care Unit 80 hours (Hours to be tracked in your log)**
 - **25 Home Hospice Visits** (Medicare Certified Hospice Program)
 - **50 IDT meetings** (meetings with people from other disciplines about your patients, one-on-one count, could be IDT in the hospital, LTC or home hospice or you can start your own, these can also be duplicated from new inpatient or continuity if other disciplines present)
- Pediatric Palliative Care (See Pediatric Palliative Care Tab in Patient Log)
 - **5 Pediatric cases**
 - **Observation of a Pediatric Palliative Care program for 1 week**
- During the course, you will participate in **every other week 2-hour nightly seminar** with oral presentation of cases in at least ½ of these sessions. Attendance in 90% of seminars is mandatory.
- **Other scholarly course work** including a mixture of reading, asynchronous video role plays, journal clubs and professional development reflections due every other week.
- 2 360 Evaluations from both Colleagues per course (12 total over 2 years).
- 2 Patient/Family satisfaction surveys from patients (12 total over 2 years).
- At least 1 elective is strongly encouraged. This includes observation of and reflection on at least one experience that adds to fellow's portfolio and supports palliative care practice.

Learning Objectives**Communication Skills**

The PC CHPM physician demonstrates expertise in relationship centered communication theory and skills to gather and share information, negotiate shared decision making and plans of care, and sustain relationships with palliative care patients/families and healthcare providers.

Expert Symptom Management Skills (Pain and Non-pain)

The PC CHPM physician demonstrates expert clinical judgment in performing a comprehensive patient assessment, leading to diagnosis development, implementation, and ongoing reassessment with modification of effective, evidence-based care plans utilizing the skills and expertise of the interdisciplinary team (IDT), for all distressing pain and non-pain symptoms experienced by patients with any serious illness.

Ethics, Advocacy, and Legal Aspects of Care

The PC CHPM physician incorporates knowledge of ethical and legal aspects of palliative care into practice by exhibiting the highest

professional standards and by advocating for the rights of patients/families to access optimal palliative care.

Spiritual, Religious and Existential Aspects of Care

As part of the IDT, the PC CHPM physician Specialist demonstrates and promotes spiritually sensitive care, respecting diversity in all forms, for patients/families and other health care professionals.

Social and Cultural Aspects of Care

As part of the IDT, the PC CHPM physician demonstrates respect for diverse communities through culturally sensitive skills, recognizing how social and economic barriers and challenges impact the delivery of health care services.

Psychological Aspects of Care

As part of the IDT, the PC CHPM physician effectively addresses psychological concerns, and promotes access to expanded resources for all patients/families living with any serious illness.

Integration of Palliative Care for patients throughout the course of any serious illness in all venues

The PC CHPM physician effectively advocates to provide evidence-based palliative care for patients/families and supports and develops expanded resources for all patients/families living with any serious illness.

Effective Palliative Care Educator

The PC CHPM physician demonstrates knowledge, skills, and applies adult learning principles when providing palliative care education to patients, families, healthcare professionals, and the community.

Systems Thinking

The PC CHPM physician Specialist demonstrates understanding of the healthcare system to effectively manage and utilize resources to support patients/families living with any serious illness and advocates for the reform of healthcare systems to provide optimal palliative care.

Courses

CHPM 7001 - Comm-Based Hospice and Pall Med Fellowship - A (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

CHPM 7002 - Comm-Based Hospice and Pall Med Fellowship - B (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

CHPM 7003 - Comm-Based Hospice and Pall Med Fellowship - C (4 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

CHPM 7004 - Comm-Based Hospice and Pall Med Fellowship - D (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

CHPM 7005 - Comm-Based Hospice and Pall Med Fellowship - E (8 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

CHPM 7006 - Comm-Based Hospice and Pall Med Fellowship - F (4 Credits)

For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

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Dissemination & Implementation Science (Certificate)

Overview

Dissemination and Implementation (D&I) science is the study of methods and strategies to facilitate the spread, adoption, implementation, and sustainment of evidence-based practices, interventions and policies in real-world and diverse health settings. As a transdisciplinary scientific field, D&I science can address multiple cross-cutting research topics (e.g., reducing disparities in access to and quality of care; use of innovative technologies and data science to improve routine care) and health conditions (e.g., mental health, cancer and cardiovascular disease morbidity and mortality, geriatric care) of high priority. D&I Science also has the potential to make precision health more actionable and relevant and can make the translation of discoveries in this and other high priority areas more rapid.

The D&I Science Graduate Certificate Program is designed to provide pragmatic training to researchers who want to develop competencies in D&I science and practice which can be applied across multiple topic areas and settings in health services, clinical and community health, and public health research. The program is intended to provide researchers with solid foundational skills in D&I science, as well as intermediate and advanced skills in select D&I competency areas.

The D&I Science Graduate Certificate Program has three sponsoring units. The Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS) acts as the primary sponsor, and the Clinical Science Graduate Program at the University of Colorado Anschutz Medical Campus acts as the secondary sponsor. The Colorado Implementation Science Center for Cancer Control and Prevention (1 P50 CA244688-01) serves as an additional sponsor. It is coordinated through the ACCORDS Dissemination and Implementation Science Program.

Admission Requirements

Please visit the D&I Certificate website for admission information: <https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program> (<https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program/>)

- Degree: BA/BS
- GPA: minimum of 3.00 recommended

There is one application cycle per year with a start date in the **Fall** (August) semester. Please see website for additional requirements.

Certificate Requirements

Complete a total of **12 credit hours over a 3-year period**:

Code	Title	Hours
<i>Complete the following 8 credits:</i>		
CLSC 6750	Designing for Dissemination, Sustainability, and Equity	2
CLSC 7653	Dissemination and Implementation Research in Health	3
CLSC 6560	Designs and Mixed Methods in Implementation Research	3

Complete 4 Elective credits from the courses below:

CLSC 7663	Context & Adaptation in D&I Research	2
CLSC 6770	Implementation Science Grant and Article Funding	2
CLSC 6850	Adv Topics: Dissemination and Implementation Sci	1

Electives approved by Certificate Director (variable in length)

Learning Objectives

- Perform human research adhering to legal, ethical and regulatory principles and and guidelines
- Critically appraise existing literature and sources of information
- Apply evidence based practice principals
- Accurately select, use and interpret commonly used statistics
- Apply and use appropriate study designs and methods to address research questions/hypotheses
- Identify and measure clinically relevant and meaningful outcomes
- Design and conduct research studies
- Publish research-based manuscripts to peer-reviewed journals
- Prepare and submit grant proposals
- Provide constructive reviews and feedback to colleagues
- Demonstrate effective communication and leadership skills
- Participate in interdisciplinary collaboration

Courses

Please visit the D&I Certificate website for course information: <https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program> (<https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program/>)

CLSC 7653 - Dissemination and Implementation Research in Health (3 Credits)

Introduces dissemination and implementation (D&I) research and practice in the context of health (i.e. translational research in health). This is a graduate level course and students should have a working understanding of study designs and statistics.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CLSC 6560 - Designs and Mixed Methods in Implementation Research (3 Credits)

This course provides an in-depth examination of study designs, comparative effectiveness research, and qualitative, quantitative and mixed methods approaches to dissemination and implementation research. The focus is application to health care and public health settings. Prerequisite: CLSC 7653.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CLSC 6750 - Designing for Dissemination, Sustainability, and Equity (2 Credits)

This course provides an introduction to designing for the dissemination and sustainability of health innovations in clinical and translational research and practice, using a co-creation engagement approach, and with a focus on equity.

Grading Basis: Letter Grade

Typically Offered: Fall.

CLSC 7663 - Context & Adaptation in D&I Research (2 Credits)

This course covers concepts, frameworks, and methods for understanding and assessing context and guiding adaptations as relevant to dissemination and implementation (D&I) health research and practice. Prerequisite - CLSC 7653.

Grading Basis: Letter Grade

Typically Offered: Spring.

CLSC 6770 - Implementation Science Grant and Article Funding (2 Credits)

This course provides an in-depth examination of issues in submitting successful grant proposals in Dissemination & Implementation research. The course will build upon good general practices in grant and manuscript preparation and submission. Prerequisite: CLSC 7653

Grading Basis: Letter Grade

Typically Offered: Summer.

CLSC 6850 - Adv Topics: Dissemination and Implementation Sci (1 Credit)

Provides an overview of intermediate and advanced dissemination and implementation (D&I) science research methods in a small group discussion format. This interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages.

Prerequisite: CLSC 7653.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

Please visit the D&I Certificate website for contact information: <https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program/> (<https://medschool.cuanschutz.edu/accords/cores-and-programs/dissemination-implementation-science-program/d-i-certificate-program/>)

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Multidisciplinary Geriatrics (Certificate)

Overview

The Multidisciplinary Geriatrics Certificate Program is designed to provide pragmatic training to graduate students or practitioners in a relevant clinical health professions area (Advanced Practice Provider, Dentistry, Medicine, Nursing, Occupational Therapy, Pharmacy, Physical Therapy, Psychology, Social Work, or Speech-Language Pathology) who want to develop competencies in Geriatrics which can be applied across multiple professional settings. Trainees will complete geriatric-specific education requirements and clinical rotations for multidisciplinary didactic and hands-on experiential training.

Program courses will be delivered in an multidisciplinary learning environment that mirrors the geriatric care work setting. The didactic material focuses on coordinating care, using age-friendly medication, managing dementia and delirium, maximizing mobility and function, and aligning health outcome goals and care preferences among older adults.

Admissions Requirements

- This program is designed for those currently engaged in graduate study or clinical practice in a relevant health professions area (Advanced Practice Provider, Dentistry, Medicine, Nursing, Occupational Therapy, Pharmacy, Physical Therapy, Psychology, Social Work, or Speech-Language Pathology).
- Degree: BA/BS
- GPA: Minimum of 3.00 recommended

Certificate Requirements

Complete a total of **12 credit hours over a 1-year period**:

Code	Title	Hours
Complete the following 8 credits:		
GERI 6810	Foundations in Geriatrics	2.5
GERI 6811	Foundations in Geriatrics - 2	2.5
GERI 6820	Mini-Clinical Rotations	1
GERI 6821	Mini-Clinical Rotations - 2	1
GERI 6840	Independent Study	1
Complete an additional 4 credits:		4
Clinical transfer credit hours as approved by Certificate Director, OR		
GERI 6830	Quality Improvement Learning Project	
Total Hours		12

Learning Objectives

- Describe key points of health promotion and aging using the 5Ms of Age-Friendly Health Systems.
- Understand how to align care with older adults' specific health outcome goals and care preferences, across settings of care.
- Understand the reasons for and approach to using age-friendly medication that does not interfere with older adults' preferences, mobility, or mentation across settings of care.
- Understand how to prevent, identify, treat, and manage delirium across settings of care.

- Understand how to ensure that older adults move safely every day to maintain function and preferred health outcomes.
- Understand how to coordinate care among older adults with multiple chronic conditions.
- Articulate discipline-specific knowledge as it relates to the 5Ms of Age-Friendly Health Systems.
- Be conversant and knowledgeable of the process of research generation and Evidence-Based Practice (EBP).
- Critically critique and synthesize the relevant body of research literature.
- Develop clinical strategies for implementation of relevant research findings.
- Develop clinical knowledge, skills, and understanding of applying geriatrics-friendly concepts in varied clinical environments.

Courses

GERI 6810 - Foundations in Geriatrics (2.5 Credits)

This course is designed for health professions graduate students who seek to obtain multidisciplinary knowledge of the aging process. The content provides an overview of the biological, psychological, and social dimensions of aging as they relate to best practices in geriatric healthcare.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6811 - Foundations in Geriatrics - 2 (2.5 Credits)

This course is designed for health professions graduate students who seek to obtain multidisciplinary knowledge of the aging process. The content provides an overview of the biological, psychological, and social dimensions of aging as they relate to best practices in geriatric healthcare.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6820 - Mini-Clinical Rotations (1 Credit)

This course is designed to provide health professions graduate students with knowledge of current diagnostic and treatment approaches appropriate for aging patients within a multidisciplinary environment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6821 - Mini-Clinical Rotations - 2 (1 Credit)

This course is designed to provide health professions graduate students with knowledge of current diagnostic and treatment approaches appropriate for aging patients within a multidisciplinary environment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6830 - Quality Improvement Learning Project (4 Credits)

This course is designed to empower health professions graduate students to lead Age-Friendly Health System transformation. The course will consider research findings and relevant evidence in a clinical geriatrics topic and guide students in a systematic approach to completing a Quality Improvement project, resulting in a scholarly product.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6840 - Independent Study (1 Credit)

This course is designed to provide health professions graduate students with an opportunity to enhance their knowledge and clinical understanding of aging and/or to explore an area of interest related to gerontological research in depth.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Program Administrator

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Palliative Care (Certificate)

Overview

The Interprofessional Graduate Certificate in Palliative Care along with the Master of Science Degree in Palliative Care aim to ease suffering for those patients and families living with serious illness through exemplary palliative care education.

These programs develop Palliative Care Community Specialists through innovative educational pedagogies designed to facilitate learning for healthcare providers and allied health professionals in up-to-date, evidence-based, interdisciplinary palliative care concepts using an online virtual learning environment that offers flexible application-based approaches.

Program courses are delivered in an interprofessional learning environment that mirrors the palliative care work setting. The program focuses on advancing clinical knowledge; developing clinical wisdom; building an evidence-based palliative care practice; enhancing communication skills; and addressing physical, psychological, social, and spiritual suffering.

Admissions Requirements

PRIORITY DEADLINE: April 1

DOMESTIC APPLICATION DEADLINE: May 1

INTERNATIONAL APPLICATION DEADLINE: May 1

To apply for admission applicants must submit the following:

- **Online Graduate School application- select "school, program" to get to the right app**
 - **Personal Statement:** A one-page personal statement describing the applicant's career goals and purpose for studying palliative care.
 - **Resume:** The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - **Three recommendations:** to be completed by people who know your professional, academic and/or personal achievements or qualities well. As such, references must be from professional contacts, such as employers, supervisors, former faculty, preceptors, or professional colleagues. References from clergy, family members, friends or politicians will not be accepted. The contact information for these recommendations will be put into the application system.
- **Application Fee:** \$50 (domestic), \$75 (international).
- **Interview:** After the application is complete a telephone or video interview will be arranged with the applicant and two faculty/administration members. This interview will afford the program the opportunity to understand the needs of the applicant and for the candidate to ask questions. The interview process is designed to assess the applicant's knowledge of the profession, communication, and ability to perform in a positive, professional manner when working with others. To be considered for admission, applicants must participate in the interview process.
- **Transcripts:** An official transcript from the highest degree-bearing institution is required for the certificate application.
 - Please note: If you decide to apply to the masters degree in the future, all official transcripts from all post-secondary colleges

and/or universities attended must be submitted (even if a degree was not obtained). If courses show on transcript from a transfer institution, the official transcripts from the transfer institution must still be submitted.

Preferred Delivery Method:

Electronic Transcripts should be sent to:
graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

Graduate School
Mail Stop C296
Fitzsimons Building, W5107
13001 E. 17th Place
Aurora, CO 80045

International Applicants - Important Information

International students must meet ALL of the requirements above and those required by International Admissions.

Certificate Requirements

Year 1

Fall		Hours
PALC 6510	Palliative Care Core Concepts - Principles, & Communication	3
PALC 6110	Basic Pain Assessment & Management: IDT Care	3
	Hours	6
Spring		
PALC 6210	IDT Care for Symptoms: Part A	3
PALC 6220	IDT Care for Symptoms: Part B	3
	Hours	6
	Total Hours	12

Learning Objectives

Communication Skills

The PC Community Specialist demonstrates expertise in relationship centered communication theory and skills to gather and share information, negotiate shared decision making and plans of care, and sustain relationships with palliative care patients/families and healthcare providers.

Expert Symptom Management Skills

The PC Community Specialist demonstrates expert clinical judgment in performing a comprehensive patient assessment, leading to diagnosis development, implementation, and ongoing reassessment with modification of effective, evidence-based care plans utilizing the skills and expertise of the interdisciplinary team (IDT), for all distressing symptoms experienced by patients with any serious illness.

Ethics, Advocacy, and Legal Aspects of Care

The PC Community Specialist incorporates knowledge of ethical and legal aspects of palliative care into practice by exhibiting the highest professional standards and by advocating for the rights of patients/families to access optimal palliative care.

Spiritual, Religious and Existential Aspects of Care

As part of the IDT, the PC Community Specialist demonstrates and promotes spiritually sensitive care, respecting diversity in all forms, for patients/families and other health care professionals.

Social and Cultural Aspects of Care

As part of the IDT, the PC Community Specialist demonstrates respect for diverse communities through culturally sensitive skills, recognizing how social and economic barriers and challenges impact the delivery of health care services.

Psychological Aspects of Care

As part of the IDT, the PC Community Specialist effectively addresses psychological concerns, and promotes access to expanded resources for all patients/families living with any serious illness.

Integration of Palliative Care for patients throughout the course of any serious illness in all venues

The PC Community Specialist effectively advocates to provide evidence-based palliative care for patients/families and supports and develops expanded resources for all patients/families living with any serious illness.

Effective Palliative Care Educator

The PC Community Specialist demonstrates knowledge, skills, and applies adult learning principles when providing palliative care education to patients, families, healthcare professionals, and the community.

Systems Thinking

The PC Community Specialist demonstrates understanding of the healthcare system to effectively manage and utilize resources to support patients/families living with any serious illness and advocates for the reform of healthcare systems to provide optimal palliative care.

Courses

PALC 6510 - Core Concepts, Principles & Communication Skills (3 Credits)

Online. Mostly asynchronous, includes a synchronous online 3-day intensive held in late September. Topics include: communication skills (introduction/building rapport), philosophy/integration of PC, whole person assessment, the meaning of illness, spirituality in PC, resilience, goals of care conversations, decision-making capacity, and narrative medicine. Online synchronous intensive covers topics including: interdisciplinary teams, ethics, the role of PC community specialist, resilience, and communication assessment.

Grading Basis: Letter Grade

PALC 6110 - Basic Pain Assessment & Management: IDT Care (3 Credits)

Online. Asynchronous. Topics include: pain pathophysiology, assessment, integrative approaches, non-pharmacological interventions, and non-opioid and opioid pharmacological pain management, pain and anxiety, safe use of opioids and non-opioids, confidentiality, quality of life assessment, suicidal ideation, the social stigma of opioids, mindfulness, and family systems.

Grading Basis: Letter Grade

PALC 6210 - IDT Care for Symptoms: Part A (3 Credits)

Online. Mostly asynchronous, includes two synchronous communication sessions. Topics include: assessment and management of hematologic/metabolic/structural emergencies, depression, nausea/vomiting, fatigue, delirium, dysphagia, and GU issues, PTSD, grief, mental status exam

screening, financial issues and sexuality concerns. Communication skill building and assessments for family meetings.

Grading Basis: Letter Grade

PALC 6220 - IDT Care for Symptoms: Part B (3 Credits)

Online. Asynchronous. Topics include: assessment and management of skin issues, insomnia, GI symptoms, anorexia, liver dysfunction, dyspnea, cough, and care of the imminently dying, autonomy/dignity, group process, family conflict, caregiver issues, hastened death, and euthanasia.

Grading Basis: Letter Grade

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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MSPC/CHPM Principal Administrator of Student Affairs

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Personalized & Genomic Medicine (Certificate)

Overview

The Personalized & Genomic Medicine certificate program provides an opportunity for current and future healthcare professionals, researchers, and recent graduates of scientific programs to acquire knowledge and skills in the emerging field of personalized medicine.

Personalized medicine is an evolving scientific and clinical reality with the potential to transform healthcare and improve health outcomes. Personalized medicine requires the integration of numerous data sources, including clinical observations and imaging, -omics datasets (e.g., genomic, transcriptomic, epigenomic, metabolomic, and proteomic data), and electronic health records. This online certificate program focuses on genomics, including the genetic underpinnings of disease and treatment response as well as integration of genetic data with other -omics and electronic health data.

After completion of the certificate program, students will have the skills and knowledge to incorporate the principles of personalized medicine into their research, clinical, and industry careers.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Resume/CV: The applicant’s current resume or curriculum vitae, including professional work/practice experience since graduating with a bachelor’s degree (or equivalent).
 - Statement of Purpose (2 page maximum) addressing these questions:
 1. Why are you interested in obtaining a Graduate Certificate in Personalized and Genomic Medicine from the University of Colorado Anschutz Medical Campus?
 2. How will the Graduate Certificate in Personalized and Genomic Medicine help you reach your professional and career goals?
 3. Briefly describe your plan for completing the coursework online in regard to the time commitment for study and maintaining work/life balance.
 4. Briefly describe your previous experience with online courses and learning.
- Driver’s License: A copy of the applicant’s driver’s license or state-issued ID.
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars). Checks or money orders should be made out to the University of Colorado.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:

Electronic Transcripts (preferred) should be sent to: graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

University of Colorado Anschutz Medical Campus Graduate School

Mail Stop C296
Fitzsimons Building, W5107
13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Certificate Requirements

Year 1		
Fall		Hours
PMED 6010	Foundations in Personalized Health	3
PMED 6110	Pharmacogenomics	3
Hours		6
Spring		
PMED 6210	Multi-Omic Approaches in Personalized Medicine	3
PMED 6410 or PMED 6910	METHODS AND CHALLENGES IN OBSERVATIONAL HEALTH DATA ANALYSIS or Applications and Challenges in Personalized Medicine	3
Hours		6
Total Hours		12

Learning Objectives

1. Synthesize the knowledge base in personalized medicine, pharmacogenetics, and omic disciplines.
2. Apply the methods of personalized medicine to clinical and research problems.
3. Develop critical thinking skills to be able to examine issues and ideas, and to identify good and bad reasoning in a variety of fields with differing assumptions, contents and methods.

Courses

PMED 6010 - Foundations in Personalized Health (3 Credits)
PMED6010 introduces students to the field of personalized medicine and prepares students to integrate this field into a variety of health-related professions. Students will gain the foundational knowledge to successfully apply personalized medicine approaches to scientific research and clinical care.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

PMED 6110 - Pharmacogenomics (3 Credits)
PMED6110 introduces students to pharmacogenetics, which refers to how genetic factors influence drug metabolism and dosing. Students will gain the foundational knowledge to use pharmacogenetics in scientific research and clinical care. Co-Requisite - PMED 6010.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

PMED 6210 - Multi-Omic Approaches in Personalized Medicine (3 Credits)

PMED6210 introduces students to cutting-edge concepts, technologies, analytic methods, and databases for a wide-range of 'omics approaches that form the foundation of personalized medicine. Critical evaluation of literature utilizing 'omics methods for personalized medicine will also be emphasized. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PMED 6410 - METHODS AND CHALLENGES IN OBSERVATIONAL HEALTH DATA ANALYSIS (3 Credits)

In this hands-on course students will analyze real EHR data to answer COVID-19-related questions. There are no pre-requisites, and students will be introduced to coding and methods (including machine learning) via synchronous lectures, weekly assignments, and a course project.

Prerequisites: PMED6010 and PMED6210

Grading Basis: Letter Grade

Typically Offered: Spring.

PMED 6910 - Applications and Challenges in Personalized Medicine (3 Credits)

PMED6910 is the capstone experience for students enrolled in the Personalized and Genomic Medicine Graduate Certificate. Students will expand their knowledge of personalized medicine through exposure to real-world applications and in-depth research into the field. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

Elizabeth L Kudron, MD, MPH & Ivana V Yang, PhD

Program Co-Directors

PMED@cuanschutz.edu

Research Management and Compliance (Certificate)

Overview

The one-year Graduate Certificate Program in Research Management and Compliance (RMCC) is designed to provide students with focused training on central issues related to an effective research enterprise. Principal investigators are busy with mentoring trainees, writing, reviewing grants, and tending to other issues that require the attention of people with their expertise. Being able to hire professional research assistants who are familiar with the composition and requirements of writing IRB and IACUUC applications (BSBT 6804 Bioinnovation Regulations), basic components of tech transfer and innovation (BSBT 6801 Biomedical Entrepreneurship), Responsible Conduct of Research (BSBT 6065), as well as professional Project Management (BSBT 6061 Project Management) will be essential to a faculty's research enterprise. Knowledge in Statistics for Biomedical Sciences (BSBT 6067) is valuable for data analyses. Depending on the student's prior training, they will have to enroll in either Scientific Writing or in R programming. This knowledge and these skills will enable certificate holders to obtain positions as professional research assistants inside and outside academia.

Admission Requirements

- A bachelor's degree with a minimum GPA of 3.0
- Complete transcripts of undergraduate work and any previous graduate work
- A completed application to Graduate Studies
- Two academic letters of recommendation
- Prior science training and, ideally, some research experience

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Personal Statement: A one-page personal statement describing the applicant's career goals and purpose for studying biomedical sciences and biotechnology
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Personal statement.
 - Two recommendation letters from people who know your professional, academic and/or personal achievements or qualities well.
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars). Checks or money orders should be made payable to the University of Colorado.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:
 - Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu (preferred)
 - If sending a physical transcript, please mail to:

University of Colorado Anschutz Medical Campus
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place

Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Certificate Requirements

Code	Title	Hours
BSBT 6061	Project Management	2
BSBT 6065	Case Studies in Responsible Conduct of Research	1
BSBT 6067	Statistics for Biomedical Sciences	2
BSBT 6071	Introduction to R Programming	1
BSBT 6801	Biomedical Entrepreneurship	3
BSBT 6804	Bioinnovation Regulations	3
Total Hours		12

Learning Objectives

Upon successful completion of their studies, students enrolled in the Research Management and Compliance Graduate Certificate program will be able to:

1. Employ basic tools of R programming.
2. Classify data and use statistical tools to test hypotheses.
3. Explain the central components of successful business strategies in biotechnology and create a business plan.
4. Explain the scientific implications and issues of quality control and regulatory affairs related to drug development and create a project plan.
5. Recognize challenges in biomedical sciences and biotechnology in real-world settings and contribute to their solutions and advancements.
6. Understand and apply appropriate forms of management that are central for the successful completion of a project.

Courses

BSBT 6061 - Project Management (2 Credits)

Provides training in initiating, executing & closing a project, including the management of scope, time, cost, human resources, communication, risk and more. Highly interactive intensive course prepares students for Certified Project Management exam (internationally recognized certification). Taught by Project Management Professional.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6065 - Case Studies in Responsible Conduct of Research (1 Credit)

Anyone conducting research using federal funding must study RCR. You'll learn expectations and regulations that permeate science. You'll understand consequences of violations to individuals and society. We'll explore misconduct through interactive video, written and video case studies, and other engaging activities.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6067 - Statistics for Biomedical Sciences (2 Credits)

Learn how and when to apply statistical procedures to answer scientific questions relevant to biomedicine, and how to critically assess statistical data for validity.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6071 - Introduction to R Programming (1 Credit)

Introduction to the statistical programming language R geared primarily to biomedical science students with little to no previous programming experience. Basic features of R as a programming language and as scientific computing platform. Basics of data cleaning, visualization, and analysis.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6801 - Biomedical Entrepreneurship (3 Credits)

The course addresses the essential elements of bioscience and health innovation and entrepreneurship. Prerequisites: An undergraduate degree in science, technology, business, engineering or math. Cross-listed with ENTP 6801

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

BSBT 6804 - Bioinnovation Regulations (3 Credits)

This course is designed to familiarize biomedical scientists and those interested in the business of science with the fundamentals of U.S. and international regulatory affairs regarding drug discovery and medical devices. Focus is the development of products, such as drugs, devices, diagnostic tests, and health information software, to receive U.S. and international regulatory clearance or approval for commercialization.

Grading Basis: Letter Grade

Typically Offered: Fall.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Program Director

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Patricia Tanner

Program Administrator

BSBT.Program@cuanschutz.edu (BSBT.Program@cuanschutz.edu)

Translational Research on Alzheimer's Disease (Certificate)

Overview

The graduate certificate program in Translational Research on Alzheimer's Disease and Alzheimer's Disease Related Dementias can be completed in one year or over a maximum of three years. The extended time will be especially valuable for doctoral student and postdoctoral trainees who are actively involved in the research enterprise and might not have the flexibility to engage in more than one course in a semester.

The Program is designed to provide students with focused training related to central issues and techniques in Translational Research on Alzheimer's Disease and Alzheimer's Disease Related Dementias. To this end, the Program requires the successful completion of six courses for a total of 12 credits. The Graduate Certificate will facilitate a solid understanding of a wide variety of translational research on Alzheimer's Disease and Alzheimer's Disease Related Dementias (AD/ADRD), including neuropsychological and neuropathological disease features, genetic risk factors, biomarkers and brain imaging tools, biocomputational analyses as well as therapeutic approaches and clinical trial designs.

Admissions

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Personal Statement: A one-page personal statement describing the applicant's career goals and purpose for studying Translational Research on Alzheimer's Disease.
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars). Checks or money orders should be made out to the University of Colorado.
- Transcripts: Unofficial transcripts from all post-secondary colleges and/or universities should be sent directly to:
 - Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu (preferred)
 - If sending a physical transcript, please mail to:

University of Colorado Anschutz Medical Campus
Graduate School
Mail Stop C296
Fitzsimons Building, W5107
13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Certificate Requirements

Code	Title	Hours
TRAD 6210	Translational Research - Alzheimer's Disease/ Dementias	4
TRAD 6211	Research/Development in Alzheimer's Disease/ Dementias	1
TRAD 6212	Mini-Rotations AD/ADRD Translational Research	1

BSBT 6112	Introduction to Biocomputing	2
BSBT 6113	Data Science with R	1
PMED 6210	Multi-Omic Approaches in Personalized Medicine	3
Total Hours		12

Learning Objectives

Upon completion of the Graduate Certificate Program, students will be able to

1. Apply principles of experimental design and problem solving related to Translational Research on Alzheimer's Disease and Alzheimer's Disease Related Dementias
2. Employ basic tools of biocomputing and multi omics analysis with respect to problems in Translational Research on Alzheimer's Disease and Alzheimer's Disease Related Dementias
3. Compare and contrast the specific differences and opportunities in academic versus industrial research related to Translational Research on Alzheimer's Disease and Alzheimer's Disease Related Dementias.

Courses

TRAD 6210 - Translational Research - Alzheimer's Disease/Dementias (4 Credits)

The course will facilitate a solid understanding of translational research in Alzheimer's Disease and Alzheimer's Disease Related Dementias, including neuropsychological and neuropathological disease features, genetic risk factors, biomarkers and brain imaging tools, statistical analyses, therapeutical approaches and clinical trial design.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

TRAD 6211 - Research/Development in Alzheimer's Disease/ Dementias (1 Credit)

The course will discuss with industrial experts a wide variety of issues in connection with research and developments on Alzheimer's Disease and Alzheimer's Disease Related Dementias in an industrial setting.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

TRAD 6212 - Mini-Rotations AD/ADRD Translational Research (1 Credit)

The course will facilitate short three week mini-rotations in facilities that conduct translational research connected with Alzheimer's Disease or Alzheimer's Disease Related Dementias in academic or industrial settings.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6112 - Introduction to Biocomputing (2 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic dataset. Requisite: Must be simultaneously enrolled in BSBT 6113.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6113 - Data Science with R (1 Credit)

In this 4 weeks semi-independent study course, you will learn how to use the “tidyverse” programming paradigm to perform data science operation using the programming language R. At the end of the course, you will learn the basic understanding of the fundamental elements of data science, including; wrangling, exploration, visualization and modeling.

Grading Basis: Letter Grade

Typically Offered: Fall.

PMED 6210 - Multi-Omic Approaches in Personalized Medicine (3 Credits)

PMED6210 introduces students to cutting-edge concepts, technologies, analytic methods, and databases for a wide-range of ‘omics approaches that form the foundation of personalized medicine. Critical evaluation of literature utilizing ‘omics methods for personalized medicine will also be emphasized. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

Huntington Potter, PhD

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Director, Alzheimer's Disease Program, Linda Crnic Institute for Down Syndrome

AAAS Fellow

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Deanna Ragsdale

Program Assistant

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Graduate School Masters Programs

Overview

Master's programs offer students the opportunity to strengthen their academic preparation for medical or further graduate school, gain the skills necessary to advance or change careers, or enter careers where a Master's is the terminal degree. Most Master's degrees are self-funded and can be undertaken as full- or part-time endeavors.

Detailed descriptions of each program and their admissions requirements can be found on the Masters Program's page.

The following Masters programs are available through the Graduate School at the CU Anschutz Medical Campus:

- Biomedical Sciences & Biotechnology (MS) (p. 219)
- Biostatistics (MS) (p. 224)
- Clinical Science (MS) (p. 225)
- Epidemiology (MS) (p. 227)
- Genetic Counseling (MS) (p. 228)
- Immunology and Microbiology (MS) (p. 234)
- Modern Human Anatomy (MS) (p. 239)
- Palliative Care (MS) (p. 243)
- Pharmaceutical Sciences (MS) (p. 246)

Biomedical Sciences & Biotechnology (MS)

Biomedical Sciences & Biotechnology Overview

The Master's program in Biomedical Sciences and Biotechnology (BSBT) provides comprehensive education and training to prepare students for careers in research and research-related jobs in academia or industry and for further study in graduate or professional programs.

The BSBT Program was designed and is recognized by the National Professional STEM Master's Association (NPSMA) as a Professional STEM Master's Program (PSM), the first such program in the CU system. The program extends student knowledge beyond core STEM disciplines of biomedical sciences and biotechnology by requiring training in scientific writing, project management, business, and regulatory affairs.

Structural Biology Track Overview

The Structural Biology and Biochemistry track will provide students with graduate level training in structural biology, biophysics biochemistry with an emphasis on laboratory research. Students will acquire a solid foundation and specialized skills in biomedical, biophysical, and structural sciences that will be preparation for further education in graduate and professional programs as well as a career in academic research or industry. The curriculum includes 38 units of core course work, electives and participation in cutting-edge research in the laboratory of an STBB faculty member. Students will demonstrate original investigation showing critical judgment, as well as familiarity with tools and methods of research, through preparation of a dissertation that will be defended prior to obtaining the degree.

Admission Requirements

General Track Admission Requirements

- A bachelor's degree with a minimum GPA of 3.0
- Official General GRE or MCAT (both optional)
- Complete transcripts of undergraduate work and any previous graduate work
- A completed application to Graduate Studies
- Three academic letters of recommendation
- Letter of intent
- Training in biology, biochemistry, chemistry, biological chemistry, biophysics
- To apply for admission applicants must submit the following:

Online Graduate School application

- Personal Statement: A one-page personal statement describing the applicant's career goals and purpose for studying biomedical sciences and biotechnology
- Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
- Personal statement.
- Three recommendation letters from people who know your professional, academic and/or personal achievements or qualities well.

- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars). Checks or money orders should be made payable to the University of Colorado.

Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:

- Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu (preferred)
- If sending a physical transcript, please mail to:
University of Colorado Anschutz Medical Campus
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Structural Biology Track Admission Requirements

- A bachelor's degree with a minimum GPA of 3.0
- Official General GRE or MCAT (both optional)
- Complete transcripts of undergraduate work and any previous graduate work
- A completed application to Graduate Studies
- Three academic letters of recommendation
- Letter of intent
- Training in biology, biochemistry, chemistry, biological chemistry, biophysics

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- Three recommendation letters from people who know your professional, academic and/or personal achievements or qualities well.

Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars). Checks or money orders should be made payable to the University of Colorado.

Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:

- Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu (preferred)
- If sending a physical transcript, please mail to:
University of Colorado Anschutz Medical Campus
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place

Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Curriculum

The Professional STEM Master’s Program in Biomedical Sciences and Biotechnology requires a total of 38 credits that full-time students can earn in two years. However, students can also enroll part-time. Enrollment for a minimum of 5 credits is required for financial aid eligibility.

In addition to the science courses, in the General BSBT Program, students must enroll in professional development courses (Plus Courses) such as biomedical entrepreneurship, project management, and regulatory affairs. These Plus Courses provide additional training that employers inside and outside academia highly value.

The mandatory internship requires students to apply their base science and professional training in a hands-on, real-world setting. In consultation with the Program Director, students choose an internship that suits their future career aspirations. For example, students interested in a research career can pursue an internship in an academic lab or a company. Students can also intern in a biotech business setting, regulatory affairs, or technology transfer. Employers inside and outside academia often view the internship as an extended interview, and after graduation, quite a number of our graduates stayed at their internship site for employment. Some students have used our program successfully as a stepping stone towards medical or DO school or a PhD program.

The BSBT-PSM Program requires 38 credits for graduation, and graduate students must maintain an overall GPA of at least 3.0 (“B”). Courses with a grade of “C” are not accepted for graduation.

General Track

First Year

Year 1		
Fall		Hours
BSBT 6072	Foundations in Biochemistry	1.5
BSBT 6073	Foundations in Molecular Biology	1.5
BSBT 6074	Foundations in Cell Biology	1.5
BSBT 6075	Foundations in Genetics	1.5
Hours		6
Spring		
BSBT 6067	Statistics for Biomedical Sciences	2
BSBT 6071	Introduction to R Programming	1
BSBT 6806	Communication Skills	3
Hours		6
Summer		
BSBT 6065	Case Studies in Responsible Conduct of Research	1
Hours		1
Total Hours		13

Second Year

Year 2		
Fall		Hours
BSBT 6804	Bioinnovation Regulations	3
ENGL 5175	Writing in the Sciences	3
PHSC 7330	Development of Drugs and Biologics	3
Hours		9
Spring		
BSBT 6061	Project Management	2
BSBT 6801	Biomedical Entrepreneurship	3
BSBT 6939	Internship - Technology and Innovation Section 001	3-6
Hours		8-11
Total Hours		17-20

Structural Biology Track

First Year

Year 1		
Fall		Hours
BSBT 6072	Foundations in Biochemistry	1.5
BSBT 6073	Foundations in Molecular Biology	1.5
BSBT 6074	Foundations in Cell Biology	1.5
BSBT 6075	Foundations in Genetics	1.5
BSBT 6076	Research Explorations	1
STBB 7660	Structure Seminar	1
BMSC 7810	Core Topics in Biomedical Science 001; Core Topics A	2
Hours		10
Spring		
STBB 7608 or STBB 7609	Molecular Interactions or Biophysics & Spectroscopy	3
BSBT 6068	Laboratory Research in Structural Biology	1-6
STBB 7631	Molecular Structure A	1.5
BSBT 6076	Research Explorations	1
Hours		6.5-11.5
Summer		
BSBT 6065	Case Studies in Responsible Conduct of Research	1
Hours		1
Total Hours		17.5-22.5

Second Year

Year 2		
Fall		Hours
STBB 7631	Molecular Structure A Section 004	1.5
STBB 7660	Structure Seminar	1
BSBT 6068	Laboratory Research in Structural Biology	1-6
Hours		3.5-8.5
Spring		
BSBT 6068	Laboratory Research in Structural Biology	1-6
BSBT 6950	Laboratory Thesis Research	1-6

STBB 7660	Structure Seminar	1
	Hours	3-13
	Total Hours	6.5-21.5

Learning Objectives

Learning and Training Goals

Upon successful completion of their studies, students enrolled in the Biomedical Sciences and Biotechnology Master's Program will be able to:

- Apply principles of experimental design and problem solving in the biomedical sciences
- Apply statistical tools for data composition, mining and analysis
- Employ state-of-the-art techniques in biomedical sciences
- Design strategies for rational drug design
- Conduct research in an ethical manner
- Engage in critical analysis of the scientific literature
- Apply the principles of project management
- Understand and operate in the regulatory environment of life science innovation
- Analyze the process of biomedical entrepreneurship in academic, government, and corporate settings
- Write a well-supported, well-reasoned scientific or technical paper

Upon successful completion of their studies, students enrolled in the Biomedical Sciences Graduate Certificate program will be able to:

1. Apply principles of experimental design and problem solving in four focus areas of biomedical sciences.
2. Employ basic tools of R programming.
3. Classify data and use statistical tools to test hypotheses.
4. Recognize and manage ethical challenges related to the responsible conduct of research.

Courses

BSBT 6061 - Project Management (2 Credits)

Provides training in initiating, executing & closing a project, including the management of scope, time, cost, human resources, communication, risk and more. Highly interactive intensive course prepares students for Certified Project Management exam (internationally recognized certification). Taught by Project Management Professional.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6065 - Case Studies in Responsible Conduct of Research (1 Credit)

Anyone conducting research using federal funding must study RCR. You'll learn expectations and regulations that permeate science. You'll understand consequences of violations to individuals and society. We'll explore misconduct through interactive video, written and video case studies, and other engaging activities.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6067 - Statistics for Biomedical Sciences (2 Credits)

Learn how and when to apply statistical procedures to answer scientific questions relevant to biomedicine, and how to critically assess statistical data for validity.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6068 - Laboratory Research in Structural Biology (1-6 Credits)

The Course BSBT 6068, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on structural biology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

BSBT 6070 - Mini-Research Rotations (1-3 Credits)

The Course BSBT 6070, Mini-Research Rotations, with allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

BSBT 6071 - Introduction to R Programming (1 Credit)

Introduction to the statistical programming language R geared primarily to biomedical science students with little to no previous programming experience. Basic features of R as a programming language and as scientific computing platform. Basics of data cleaning, visualization, and analysis.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6072 - Foundations in Biochemistry (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in biochemistry including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6073 - Foundations in Molecular Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in molecular biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6074 - Foundations in Cell Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in cell biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6075 - Foundations in Genetics (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in genetics including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6076 - Research Explorations (1 Credit)

This course allows for exploration of SBB research labs in a “mini-rotation” format, through meeting faculty, reading literature and participating in lab group meetings and research in order to choose a research lab and prepare a short research proposal.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6801 - Biomedical Entrepreneurship (3 Credits)

The course addresses the essential elements of bioscience and health innovation and entrepreneurship. Prerequisites: An undergraduate degree in science, technology, business, engineering or math. Cross-listed with ENTP 6801

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

BSBT 6804 - Bioinnovation Regulations (3 Credits)

This course is designed to familiarize biomedical scientists and those interested in the business of science with the fundamentals of U.S. and international regulatory affairs regarding drug discovery and medical devices. Focus is the development of products, such as drugs, devices, diagnostic tests, and health information software, to receive U.S. and international regulatory clearance or approval for commercialization.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6805 - Bioinformatics (4 Credits)

This course will simultaneously introduce students to coding principles (using R) applied to common problems in bioinformatics and data analysis. To this end, students will learn how to import high-throughput data into R, pre-process that data to account for technical anomalies resulting from the acquisition modality (e.g., RNA-Seq, ChIP-Seq), and perform a sequence of statistical analysis (e.g., ANOVA) and data visualization (e.g., heatmaps). At the completion of this course, students will be equipped with coding templates in R that they can apply to data analysis for their own research purposes. Students will also be exposed to more advanced principles of data analysis, such as training machine learning algorithms. These include unsupervised and supervised algorithms, which are commonly used for general data exploration and training diagnostic/prognostic models, respectively. Prereq: • Mathematical Foundations: Students are expected to have a solid understanding of calculus and matrix algebra. These mathematical principles are essential for comprehending common data analysis techniques used in bioinformatics. • Programming Skills: Coding experience in any programming language is preferred but not required. The course will teach bioinformatics and coding concepts simultaneously, primarily using R as the programming language.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6806 - Communication Skills (3 Credits)

Position yourself for success biomedical research and industry careers where effective communication is essential. Learn and practice the fundamentals of effective public speaking, presenting, interviewing, and personal branding. This is a graduate level course designed for individuals in research and industry fields who are looking to refine their communication skills.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6939 - Internship - Technology and Innovation (3-6 Credits)

The internship provides hands-on learning opportunities for graduate students in institutions related to technology/biotechnology, computer science, engineering, innovation and entrepreneurship. Requisite: Enrollment with permission only. Instructor consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

ENGL 5175 - Writing in the Sciences (3 Credits)

Provides rhetorical analyses of scientific discourse and student practice in writing research reports and proposals. Restriction: Restricted to students at the graduate level (including non-degree and Anschutz Medical Campus programs). Cross-listed with ENGL 4175. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to students at the graduate level (including non-degree and Anschutz Medical Campus programs).

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

PHSC 7330 - Development of Drugs and Biologics (3 Credits)

A survey course designed to introduce students to pharmacokinetic and pharmacodynamics principals used in drug research and development by faculty of the Skaggs School of Pharmacy, Department of Pharmaceutical Sciences. The Phoenix Winnonlin Computer software, is used to complete homework. Offered in Fall only in even-numbered years. Crosslisted with TXCL 7330.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7608 - Molecular Interactions (3 Credits)

Provides chemical/physical basis for protein structure, folding, function & stability; presents methods/principles of protein/peptide purification & enzyme catalysis including electron transfer & mutagenesis. The role of molecular dynamics & use of molecular simulations in the investigations of protein-ligand/protein-protein interactions. Cross-listed with PHSC 7608.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7609 - Biophysics & Spectroscopy (1.5 Credits)

This course aims to provide the students with a deep understanding of the application of different biophysical techniques to study interactions of biomolecules with each other or with small molecules. The course will supply the students with the needed tools to be able to design their own biophysical experiments to tackle a particular question.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7631 - Molecular Structure A (1.5 Credits)

Gain an in-depth understanding of the underlying principles of an NMR experiment, so that student can turn NMR theory into NMR practice for their research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7660 - Structure Seminar (1 Credit)

Seminar series provides a forum for the presentation of scientific experiments and information in structural biology by faculty, postdoctoral fellows and graduate students.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PMED 6010 - Foundations in Personalized Health (3 Credits)

PMED6010 introduces students to the field of personalized medicine and prepares students to integrate this field into a variety of health-related professions. Students will gain the foundational knowledge to successfully apply personalized medicine approaches to scientific research and clinical care.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PMED 6110 - Pharmacogenomics (3 Credits)

PMED6110 introduces students to pharmacogenetics, which refers to how genetic factors influence drug metabolism and dosing. Students will gain the foundational knowledge to use pharmacogenetics in scientific research and clinical care. Co-Requisite - PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PMED 6210 - Multi-Omic Approaches in Personalized Medicine (3 Credits)

PMED6210 introduces students to cutting-edge concepts, technologies, analytic methods, and databases for a wide-range of 'omics approaches that form the foundation of personalized medicine. Critical evaluation of literature utilizing 'omics methods for personalized medicine will also be emphasized. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PMED 6910 - Applications and Challenges in Personalized Medicine (3 Credits)

PMED6910 is the capstone experience for students enrolled in the Personalized and Genomic Medicine Graduate Certificate. Students will expand their knowledge of personalized medicine through exposure to real-world applications and in-depth research into the field. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

General Track:

Heather Brechbuhl, PhD

Program Director

BSBT.Program@cuanschutz.edu

Structural Biology Track

Mair Churchill, PhD

Program Director

Mair.Churchill@cuanschutz.edu

303-724-3670

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

Program Administrator

BSBT.Program@cuanschutz.edu

Biostatistics (MS)

Overview

This program emphasizes the applied and theoretical nature of biostatistics. In addition to courses in theory, statistical computing, consulting, analysis of clinical trials, and longitudinal and survival data, you'll be exposed to a wide variety of research areas including statistical genetics and genomics, causal inference, infectious disease, and cancer research. During the program, you'll get involved in research with a faculty mentor as part of your thesis or research paper. You'll also have the opportunity to specialize in one of two minor areas within the MS—Statistical Genomics and Data Science Analytics.

To learn more about the **Master of Science in Biostatistics**, please click [here](#) (p. 157) to view the information within the Colorado School of Public Health portion of the academic catalog.

Clinical Science (MS)

Overview

This program provides learning in new fields and acquisition of skills in clinical research to prepare clinicians for careers in clinical and translational sciences. Didactic course work and a mentored research project aimed to provide a strong foundation in:

- computational and statistical tools
- clinical epidemiology
- clinical research study design
- health services and outcomes research
- biomedical ethics

Admissions Requirements

Please visit the MSCS website for the most current admission information: <https://cctsi.cuanschutz.edu/training/clsc#masters> (<https://cctsi.cuanschutz.edu/training/clsc/#masters>)

Qualified clinicians who have already earned either a professional doctoral degree (e.g., MD, DO, DDS, PharmD) or a clinically-related bachelor's or master's degree (e.g., nursing, pharmacy, physical therapy) are eligible to apply to this program.

Application Deadlines

- **February 1st** to be considered for admission in following summer or fall semesters
- **May 1st** for following fall semester
- **October 1st** for following spring semester

Minimum Criteria for Admission

- An undergraduate GPA of at least 3.0 (on a 4.0 scale).
- An acceptable and verifiable GRE, MCAT or PCAT score. This requirement can be waived by an earned MS/MPH or PhD from an accredited US School
- Clinically related bachelor's, master's or professional doctoral degree. Individuals without a clinically related degree but with an exceptional background and relevant clinical research experience are encouraged to contact Dr. Lisa Cicutto (Lisa.Cicutto@cuanschutz.edu) to discuss their interest further.

International Applicant Additional Admission Criteria

In addition to the general admission requirements listed above, international applicants must meet additional requirements dictated by the University. For additional information about these requirements, please review the International Student Requirements for Graduate School admissions. (<https://www.ucdenver.edu/academics/InternationalPrograms/OIA/admissions/apply/application/graduate/Pages/default.aspx>)

Please note that the Clinical Science Program does not provide stipends to assist with tuition and/or room and board expenses. In addition we currently do not have any research or teaching assistantships to support the educational costs of international students.

Please visit the MSCS website for the most current degree requirements: <https://cctsi.cuanschutz.edu/training/clsc#masters> (<https://cctsi.cuanschutz.edu/training/clsc/#masters>)

Degree Requirements

- A minimum of 30 credit hours, of which no less than 4 and no more than 6 must be thesis/research hours
- Defense/final exam of a thesis or publishable paper
- Students have 8-11 elective credit hours to allow for tailoring of coursework

Code	Title	Hours
BIOS 6601	Applied Biostatistics I	3
BIOS 6602	Applied Biostatistics II	3
<i>Choose 1 of the following:</i>		
BIOS 6648	Design and Conduct of Clinical Research	
EPID 6626	Research Methods in Epidemiology	
BIOS 6623	Advanced Data Analysis	
EPID 6631	Analytical Epidemiology	
CLSC 6210	Research Seminars in Clinical Science	1
CLSC 6270	Critical Appraisal Seminars in Clinical Science	1
CLSC 7101	Grant Writing I	1
CLSC 7150	Ethics and Responsible Conduct of Research	1
	or CLSC 7152 Ethics and Responsible Conduct of Research in the Digital Age	
EPID 6630	Epidemiology	3
CLSC 6699	Masters Research Project: Publishable Paper	1-6

- Core course credits: 16
- Thesis/Research credits: 4-6
- Elective course credits: 8-10
- **Total required credit hours for degree: 30**

Learning Objectives

- Adhere to legal, ethical, and regulatory principles related to clinical research
- Critically appraise existing literature and sources of information
- Apply evidence-based practice principals
- Accurately select, use and interpret commonly used statistics
- Apply and use appropriate study designs and methods to address research questions/hypotheses
- Identify and measure clinically relevant and meaningful outcomes
- Design and conduct clinical and patient-oriented research studies
- Publish research manuscripts in peer-reviewed journals
- Prepare and submit grant proposals
- Provide constructive reviews and feedback to colleagues
- Demonstrate effective communication and leadership skills
- Participate in interdisciplinary collaboration

Courses

Please visit the MSCS website for course information: <https://cctsi.cuanschutz.edu/training/clsc#masters> (<https://cctsi.cuanschutz.edu/training/clsc/#masters>)

CLSC 6210 - Research Seminars in Clinical Science (1 Credit)

This course provides an overview of the types of clinical translational studies being conducted by senior CLSC doctoral students. The interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages of training, mentors and faculty.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6270 - Critical Appraisal Seminars in Clinical Science (1 Credit)

This course provides an overview of the approaches for critically appraising common study designs published in the clinical and translational sciences literature, as well as other sources of information.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 7101 - Grant Writing I (1 Credit)

The purpose of this course is to develop and improve your skills in writing successful grant applications and participating in the critique and review process of grants. Prerequisites: BIOS 6601 and EPID 6630. Course

Restrictions: CLSC students, unless written approval of Course Director.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CLSC 7150 - Ethics and Responsible Conduct of Research (1 Credit)

Course provides overview of the field of ethics in clinical research. Topics include historical background, current regulations, IRB requirements on human subjects protection issues. Students will learn how to develop approaches to conduct ethical human subjects research in an optimal manner.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 7152 - Ethics and Responsible Conduct of Research in the Digital Age (1 Credit)

This course will provide an overview of the evolving ethical issues in clinical, translational and public health research involving digital data and technologies.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

CLSC 6699 - Masters Research Project: Publishable Paper (1-6 Credits)

During course students working with his/her research mentor and research project committee to plan, execute, write Final Research Project in form of a publishable paper. In addition, students prepare for Final Research Project Examination. This is a capstone course. Prerequisite:

Consent of program. BIOS 6601 and BIOS 6602 or BIOS 6611 and BIOS 6612, CLSC 7150, EPID 6630.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Contact Us

Please visit the MSCS website for contact information: <https://cctsi.cuanschutz.edu/training/clsc#masters> (<https://cctsi.cuanschutz.edu/training/clsc/#masters>)

Galit Mankin, MSW

Program Administrator

Galit.Mankin@cuanschutz.edu

303-724-1214

Amanda Whiting

Program Assistant

Amanda.G.Whiting@cuanschutz.edu

Policies

Please refer to the Graduate School Policies page (p. 186).

Epidemiology (MS)

In this program, you'll learn about the causes, distribution, and control of diseases in populations, with an emphasis on methodology. In epidemiology, we're passionate about providing the scientific evidence that can save lives. And as a student in the department, you'll have access to faculty with a wide range of expertise—from food safety, to diabetes, to gene-environment interactions, we do it all.

To learn more about the **Master of Science in Epidemiology**, please click [here](#) (p. 158) to view the information within the Colorado School of Public Health portion of the academic catalog.

Genetic Counseling (MS)

Overview

We offer a 21 month (5 semester) program of graduate study leading to the Master of Science (M.S.) degree. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC) for the training of master's level genetic counselors.

The Mission of the University of Colorado Graduate Program in Genetic Counseling is to train competent, compassionate and innovative graduates who will effectively integrate professional practice and human genomics to deliver quality, client-centered genetic counseling services, promote informed health policy, and engage in scholarship, advocacy and leadership activities throughout their careers.

The program's curriculum and the instructional objectives of each component of the training reflect and support students' development of the Practice-based Competencies (PBCs) identified by ACGC as necessary for current and evolving genetic counseling practice. Through their training, students will learn to effectively assist patients, health care providers and the public to understand and appropriately utilize genetic information and testing to promote individualized and informed health care choices and wellbeing.

The comprehensive curriculum combines in-depth didactic coursework in the scientific, clinical, psychosocial and professional practice aspects of genetic counseling with extensive, hands-on clinical experience in pediatric, prenatal, adult, oncology and specialty genetics clinics.

Clinical training is provided through:

- Children's Hospital Colorado
- University of Colorado Hospital in the Anschutz Centers for Advanced Medicine and University of Colorado Cancer Center
- Telehealth Genetics Clinics serving patients throughout Colorado
- And other area genetic counseling centers

All students participate in clinical case conferences, genetics seminars, journal club, and clinical research activities.

The program's graduates are in very high demand and typically receive employment offers prior to graduation. They work throughout the U.S. and Canada, and in all areas of genetic counseling practice. Their performance on the American Board of Genetic Counseling (ABGC) board certification examination is excellent, with a first-time passing rate of 94.4% for the past 3 years (2022-2024) and 97.9% for the past 8 years (2017-2024). The program's attrition rate during the same period is zero.

The Genetic Counseling Program at the University of Colorado Anschutz Medical Campus is accredited by the Accreditation Council for Genetic Counseling, Inc., 7918 Jones Branch Drive, Ste. 300, McLean, VA 22102. Telephone: (703) 506 - 7667.

Genetic Counseling Admissions Match

The MS Genetic Counseling Program participates in the Genetic Counseling Admissions Match through National Matching Services (NMS) (<https://natmatch.com/gcadmissions/>). The GC Admissions Match has been established to enhance the process of placing applicants into positions in masters-level genetic counseling programs that are accredited by the Accreditation Council for Genetic Counseling (ACGC). The Match uses a process that takes into account both applicants' and programs' preferences. *All applicants must first register for the Match*

with NMS before applying for admission to the genetic counseling program and include their unique NMS registration number in the application. At the conclusion of all program interviews, both applicants and programs will submit ranked lists of preferred placements to NMS according to deadlines posted on the NMS website. The binding results of the Match will be released to both applicants and programs simultaneously in late April. Please visit the NMS website (<https://natmatch.com/gcadmissions/>) to register for the match, review detailed information about the matching process, and to view a demonstration of how the matching algorithm works. A match fee waiver program (https://www.cuanschutz.edu/docs/librariesprovider233/genetic-counseling/agcpd-nms-match-fee-waiver-language-for-program-websites-2023-cycle.pdf?sfvrsn=2def60bb_2) for qualifying prospective students is administered by the Association of Genetic Counseling Program Directors (AGCPD); qualifying individuals should apply for a fee waiver before registering for an NMS number and must do so by the deadline set by AGCPD for the next admissions cycle.

Admissions Requirements

1) Fulfillment of the academic requirements for regular admission to the Graduate School:

- A baccalaureate degree or its equivalent from a college or university of recognized standing in the biological sciences, psychology, social work, nursing or a related field.
- MINIMUM undergraduate grade point average of 3.0 on a 4.0 scale.

2) Completion of the online application form and submission of supporting materials. Access the online application website at: <https://graduateschool.cuanschutz.edu/admissions/apply>

3) FOUR letters of recommendation are required. Recommendations should be requested from individuals who know the applicant in an academic or professional context and can directly attest to the applicant's academic performance, professional abilities, and potential for success as a graduate student and genetic counselor. Preferably, at least two of the recommendations should be from academic sources (course professors, major/academic advisor, research mentor, thesis advisor), while others should be from supervisors in volunteer/advocacy or professional contexts. Recommendations from family members and personal/family friends are strongly discouraged.

Please remind recommenders that providing specific narrative discussion about the candidate's performance and qualifications is extremely helpful, in addition to the ratings requested on the recommendation form.

Please allow your recommenders adequate time to write and submit your recommendations. Recommendations submitted after our January 1 deadline will not be accepted. All recommendations are subject to verification of authenticity.

- The application site provides instructions for sending requests to your recommenders and for sending follow-up reminders to them, if needed, prior to the application deadline. This online system enables the recommender to complete a secure, online recommendation and submit it directly to the online system. Please plan ahead! If you wait until too close to the deadline to request your recommendations, your recommenders may not have adequate time to submit their materials prior to the deadline and your application cannot be reviewed. It is the responsibility of the applicant to ensure that these materials have been submitted prior to the deadline.

- An official set of recommendation letters submitted directly from a school career center is acceptable.
- Recommendations that have been in the possession of the applicant cannot be accepted.

4) ONE official copy of each transcript must be sent directly from all colleges and universities attended (degree and non-degree), regardless of the number of courses taken. Electronic submission of official transcripts by the registrar's office of each institution attended is preferred and should be emailed to Graduate.School@cuanschutz.edu (graduate.school@cuanschutz.edu). If the applicant has completed a study abroad program and the courses and final grades earned for them are reported on the main undergraduate transcript, then original transcripts from the host institution overseas do not need to be submitted. Transcripts marked "issued to student" will only be accepted if they are in their original sealed (unopened) envelopes as issued by the registrar. All transcripts are subject to verification of authenticity.

5) PREREQUISITE COURSES outlined below MUST be completed or in progress at the time of application to the program. Final grades received in fall term courses should be included in the application and an updated transcript sent as soon as final fall course grades are posted. If any courses will be taken during spring term, please submit a current transcript verifying enrollment in the course(s) or a proof of enrollment letter from the school's registrar. Prerequisites cannot be waived, taken during the summer term immediately prior to starting the program, or taken concurrently during enrollment in the genetic counseling program.

- General/Introductory Biology (a full year first-year level course sequence).
- General/Inorganic Chemistry (a full year first-year level course sequence).
- General Biochemistry (comprehensive upper-level course). This may either be fulfilled by completion of both semesters of a full year upper-level course sequence (e.g., Biochemistry I and Biochemistry II) or by completion of a comprehensive/accelerated one semester upper-level biochemistry course. Completion of just the first semester of a full year course sequence does not fulfill the prerequisite. Organic Chemistry is typically a prerequisite for upper-level Biochemistry courses. If the biochemistry course you are considering does not have an organic chemistry prerequisite, it likely is not taught at a high enough level to adequately prepare you for this program. A combined one semester Organic/Biochemistry course does not satisfy this prerequisite.
- General Genetics (upper-level course including fundamentals of genetics of prokaryotes and eukaryotes, Mendelian principles, molecular genetics principles, gene expression, recombinant DNA technology, population & quantitative genetics, laboratory techniques). Completion of an accompanying genetics laboratory component is strongly recommended if not already integrated into the core genetics course. Please note that an upper division "Human Genetics" or "Molecular Genetics" course does not fulfill this prerequisite on its own, though such higher-level courses are encouraged as useful supplements to the prerequisite general genetics course to gain a strong genetics background as a basis for graduate studies in genetic counseling.
- General/Introductory Psychology. Students seeking to enhance their preparation may find various upper division psychology and introductory counseling courses beneficial following completion of the prerequisite.

- Also highly recommended: Introductory Statistics, Anatomy & Physiology, Molecular/Cellular Biology.

International students must meet ALL of the requirements above and those required by International Admissions.

Degree Requirements

Take 47 Credits from the following:

Code	Title	Hours
Year 1 Fall Courses		
GENC 6101	Psychosocial Aspects of Genetic Counseling I	2
GENC 6105	Basic Interviewing Skills	1
GENC 6110	Topics in Medical Genetics I	3
GENC 6120	Clinical Cytogenetics and Molecular Genetics	3
GENC 6121	Laboratory in Clinical Cytogenetics and Molecular Genetics	2
GENC 6170	Introduction to Clinical Research for Genetic Counseling Students	1

Code	Title	Hours
Year 1 Spring Courses		
<i>Offered Even Years:</i>		
GENC 6140	Human Inborn Errors of Metabolism	2
<i>Offered Odd Years:</i>		
GENC 6150	Congenital Malformations and Disorders of the Newborn	1
<i>Offered Every Year:</i>		
GENC 6102	Psychosocial Aspects of Genetic Counseling II	2
GENC 6111	Topics in Medical Genetics II	2
GENC 6123	Applied Laboratory Genetic Counseling	1
GENC 6130	Cancer Genetics and Genetic Counseling	2

Take 1 Required Applied Clinical Rotation course as assigned by program advisor.

Code	Title	Hours
Year 1 Summer Courses		
GENC 6940	Capstone in Genetic Counseling	1

Take 1-2 Required Applied Clinical Rotation courses as assigned by program advisor.

Code	Title	Hours
Year 2 Fall Courses		
GENC 6201	Advanced Psychosocial Genetic Counseling	2
GENC 6210	Professional Issues in Genetic Counseling I	2
GENC 6250	Risk Calculation in Genetic Counseling	1
GENC 6940	Capstone in Genetic Counseling	1

Take 2-4 Required Applied Clinical Rotation courses as assigned by program advisor.

Code	Title	Hours
Year 2 Spring Courses		
<i>Offered even years:</i>		
GENC 6140	Human Inborn Errors of Metabolism	2
<i>Offered odd years:</i>		

GENC 6150	Congenital Malformations and Disorders of the Newborn	1
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Offered all years:

GENC 6211	Professional Issues in Genetic Counseling II	2
GENC 6940	Capstone in Genetic Counseling	1

Take 2-4 Required Applied Clinical Rotation courses as assigned by program advisor.

Code	Title	Hours
Required Applied Clinical Rotation Courses		
GENC 6910	Applied General Genetics Clinic	3
GENC 6911	Applied Prenatal Genetics Clinic	3
GENC 6912	Applied Metabolic Genetics Clinic	3
GENC 6913	Applied Regional & Specialties Genetics Clinics	1-2
GENC 6914	Applied Hereditary Cancer Clinic	1
GENC 6915	Applied Adult Medical Genetics Clinic	1
Optional Elective Rotation Courses		
GENC 6919	Applied Medical Genetics Clinic - Clinical Elective	1-3
GENC 6920	Applied Medical Genetics-Laboratory Genetic Counseling Elective	1

Learning Objectives

The Genetic Counseling M.S. Program trains graduate students to become competent and effective health professionals. The Accreditation Council for Genetic Counseling (ACGC) accredits genetic counseling graduate programs in North America. ACGC defines the following Practice-Based Competencies (PBCs; ACGC, 2023) that an entry level genetic counselor must demonstrate:

The didactic and experiential components of a genetic counseling training curriculum must support the development of proficiency in the following 7 competences: 1) Genetics and Genomics Expertise, 2) Risk Assessment, 3) Counseling, 4) Communication, 5) Research, 6) Healthcare Systems, and 7) Professional Identity. These competencies and skills, as defined by the 25 sub-competencies listed below, describe the minimal skillset of a genetic counselor which should be applicable across practice settings.

1. Genetics and Genomics Expertise: Apply knowledge of genetics and genomics principles, genetic conditions, and testing technologies to the practice of genetic counseling.

- 1.a. Demonstrate knowledge of genetics and genomics principles and concepts.
- 1.b. Apply knowledge of genetic conditions to the delivery of genetics services.
- 1.c. Demonstrate knowledge of genetic testing methodologies and variant interpretation.

2. Risk Assessment: Evaluate personalized genetic risk.

- 2.a. Analyze family history to estimate genetic risk.
- 2.b. Calculate risk using probability methods and risk models.
- 2.c. Integrate clinical and laboratory data into risk assessment.
- 2.d. Order genetic tests guided by client-centered risk assessment.

3. Counseling: Promote integration of psychosocial needs and client-centered decision-making into genetic counseling interactions.

- 3.a. Use applicable counseling skills and theories.
- 3.b. Establish a working alliance with client.
- 3.c. Promote psychosocial adaptation.
- 3.d. Facilitate client's decision-making process.

4. Communication: Communicate genetics and genomics information to clients, colleagues, and other community partners.

- 4.a. Tailor communication to specific individuals and audiences.
- 4.b. Use a variety of approaches to communicate genetics and genomic information.
- 4.c. Convey probabilities based on client's risk perception and numeracy.

5. Research: Synthesize the evidence base relevant to genetic counseling.

- 5.a. Critically interpret data and literature.
- 5.b. Apply data and literature considering its strengths, weaknesses, and limitations.
- 5.c. Demonstrate knowledge of how genetic counselors engage and contribute to the research process.

6. Healthcare Systems: Demonstrate how genetic counselors fit within the larger healthcare system.

- 6.a. Demonstrate how disparities, inequities, and systemic bias affect access to healthcare for diverse populations.
- 6.b. Describe the financial considerations in the delivery of genetic services.
- 6.c. Advocate for continuity of care.
- 6.d. Collaborate with members of the Care Team, clients, and other Community Partners.

7. Professional Identity: Embody the values of the genetic counseling profession.

- 7.a. Adhere to the genetic counselor scope of practice.
- 7.b. Follow applicable professional ethical codes.
- 7.c. Exhibit behaviors that promote an inclusive, just, equitable, and safe environment for all individuals and communities.
- 7.d. Engage in self-reflective practice to promote ongoing growth and development.

Courses

GENC 6101 - Psychosocial Aspects of Genetic Counseling I (2 Credits)

This is the first course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal, pediatric and adult clinical settings. Coreq: GENC 6105, GENC 6110. Restrictions: Matriculated students in Genetic Counseling MS Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6102 - Psychosocial Aspects of Genetic Counseling II (2 Credits)

This is the second course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal pediatric and adult clinical settings. Prereq: GENC 6101. Co-Req: GENC 6105, GENC 6110. Restrictions: matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6105 - Basic Interviewing Skills (1 Credit)

This course covers fundamental theories and principles of effective patient/client interviewing in genetic counseling practice. Lectures are combined with hands-on role plays and interviews so that students may gain applied experience and receive feedback to foster skills development throughout course. Coreq: GENC 6101, GENC 6110.

Restriction: Matriculated student in Genetic Counseling M.S. Program

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6110 - Topics in Medical Genetics I (3 Credits)

First course in a two-part course sequence regarding principles of clinical genetics and genetic counseling and development of clinical skills used in various medical genetics settings. Fall semester focuses on principles important in pediatric and general genetics settings.

Restriction: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6111 - Topics in Medical Genetics II (2 Credits)

Second course in two-course sequence regarding principles of clinical genetics and genetic counseling used in various medical genetics settings, and development of critical skills. Spring semester focuses on prenatal and adult genetics clinic settings. Prereq: GENC 6110.

Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6120 - Clinical Cytogenetics and Molecular Genetics (3 Credits)

This course provides integrated instruction regarding human cytogenetic and molecular genetic principles, techniques, and diagnostic testing approaches used in clinical evaluation and risk assessment for genetic disorders/predispositions in prenatal and postnatal patient populations. Coreq: GENC 6121. Restrictions: Matriculated student in Genetic

Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6121 - Laboratory in Clinical Cytogenetics and Molecular Genetics (2 Credits)

Course provides introduction to specific methodologies and interpretation of studies used in diagnostic cytogenetics and molecular genetics laboratories. Principles discussed in the co-requisite clinical cytogenetics and molecular genetics course will be applied through demonstrations, hands-on experiments, discussion of illustrative cases. Coreq: GENC 6120. Restrictions: Matriculated student in Genetic Counseling

M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6123 - Applied Laboratory Genetic Counseling (1 Credit)

A required rotation in genetic testing laboratories. Genetic counseling students learn about the professional practice of laboratory-based genetic counselors and specific skills such as test ordering, variant interpretation, results report writing, communication with clients, and collaboration with other members of laboratory teams. Prereq: GENC 6120, GENC 6121. Restriction: Matriculated student in M.S. Genetic Counseling Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

GENC 6130 - Cancer Genetics and Genetic Counseling (2 Credits)

Course in providing genetic counseling services to clients with or at risk for hereditary cancer predisposition. Topics include clinical oncology, epidemiology, molecular biology of cancer, risk assessment, genetic testing, ethical/legal issues, clinical research considerations, psychosocial impact/support, specific genetic counseling approaches. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6140 - Human Inborn Errors of Metabolism (2 Credits)

Course provides systematic review of major metabolic disorders, including their clinical phenotypes, diagnosis, and management. Physiological and laboratory testing principles important to understanding these disorders will be reviewed. Psychosocial impact of metabolic disorders and genetic counseling approaches will be discussed. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6150 - Congenital Malformations and Disorders of the Newborn (1 Credit)

This survey course covers common major malformations and non-metabolic genetic disorders identified by newborn screening programs. Clinical phenotypes, diagnosis, management and etiology are addressed. Psychosocial impact of these conditions and genetic counseling approaches will be discussed. Prereq: GENC 6110. Co-Req: GENC 6111. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6170 - Introduction to Clinical Research for Genetic Counseling Students (1 Credit)

An introduction to clinical research including an overview of ethical principles, study methods and designs, practical execution, data analysis and presentation of results. Possible roles of a genetic counselor in the conduct of clinical research will be a course focus. Restrictions: Matriculated student in MS Genetic Counseling Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6201 - Advanced Psychosocial Genetic Counseling (2 Credits)

This course examines advanced genetic counseling techniques as they relate to psychosocial theories, specific client characteristics and the client/counselor dynamic. Critical discussion of core topics and readings and case analysis will be used for instruction. Prereq: GENC 6101 and GENC 6102. Restrictions: Matriculated second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6210 - Professional Issues in Genetic Counseling I (2 Credits)

First course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Fall semester course focuses on professional standards, professional ethics, legal principles and health systems and policy issues relevant to genetic counselors. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6211 - Professional Issues in Genetic Counseling II (2 Credits)

Second course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Spring semester course focuses on disability issues, cultural competency, public health genetics, research methods in genetic counseling, and professional roles. Prereq: GENC 6210. Restrictions: Second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6250 - Risk Calculation in Genetic Counseling (1 Credit)

This course covers pedigree analysis and risk calculation principles used by genetic counselors in clinical practice. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6910 - Applied General Genetics Clinic (3 Credits)

This is a clinical rotation for Genetic Counseling M.S. students through a general genetics clinic serving a variety of referral indications. Students will learn and practice case management, history taking, risk assessment, counseling and client advocacy skills. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6911 - Applied Prenatal Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a prenatal diagnosis and genetics clinic. Students will learn/practice history taking, risk assessment, patient education and genetic counseling, case management, as well as observe prenatal diagnosis procedures. Prerequisites: GENC 6101, GENC 6105, GENC 6110.

Restriction: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6912 - Applied Metabolic Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a genetics clinic for inborn errors of metabolism. Students will work with patients referred for diagnostic evaluation, medical/nutritional management of specific conditions, and follow-up of positive newborn metabolic screening results. Prereq: GENC 6101, GENC 6105, GENC 6110.

Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6913 - Applied Regional & Specialties Genetics Clinics (1-2 Credits)

This is a clinical rotation for genetic counseling students through regional outreach (telehealth) genetics clinics and specialty/multidisciplinary clinics serving patients with various genetic conditions. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6914 - Applied Hereditary Cancer Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through adult and pediatric hereditary cancer clinics for individuals seeking genetic counseling and testing for genetic cancer predisposition syndromes. Section 01 - Adult I, Section 02 - Adult II, Section 05 - Pediatric. Program.

Prereq: GENC 6105, GENC 6110, GENC 6120, GENC 6130

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6915 - Applied Adult Medical Genetics Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through a medical genetics clinic and clinical research settings providing diagnosis, management, risk assessment and genetic counseling for adults. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6919 - Applied Medical Genetics Clinic - Clinical Elective (1-3 Credits)

This is an elective clinical rotation for genetic counseling students desiring to arrange training in outside of core required clinical rotations or an additional, advanced rotation. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6920 - Applied Medical Genetics-Laboratory Genetic Counseling Elective (1 Credit)

An elective rotation for students desiring an advanced, applied training experience with genetic counselors based in a genetics diagnostic laboratory. Restrictions: Matriculated student in GENC program who has completed required prerequisite courses listed; Permission of instructor.

Prereq: GENC 6120; GENC 6121; GENC 6122

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6940 - Capstone in Genetic Counseling (1 Credit)

Students will develop a proposal and complete an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling. GENC matriculated student with 2 semesters required coursework completed. Permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

Genetic Counseling Program website: cuanschutz.edu/graduate-programs/genetic-counseling/home (<https://www.cuanschutz.edu/graduate-programs/genetic-counseling/home/>)

Policies

Admissions Match Process: The M.S. Genetic Counseling Program participates in the Genetic Counseling Admissions Match through National Matching Services (NMS) (<https://natmatch.com/gcadmissions/>). All student positions will be filled via the Match. All applicants must first register for the Match with NMS before applying to the genetic counseling program. At the conclusion of program interviews, all interviewed applicants and all programs will submit ranked lists of preferred placements to NMS according to deadlines posted on the NMS website. The binding results of the Match will be released to applicants and programs simultaneously. Please refer to the Admissions page for more details.

Graduate School Policies: Please visit the Graduate School (<https://graduateschool.cuanschutz.edu/>) to view policies for prospective and current graduate students.

Contact Us

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Program Director

Carol.Walton@cuanschutz.edu

Program Administrator, Genetic Counseling

genc-ms@cuanschutz.edu

Immunology and Microbiology (MS)

Overview

The Master of Science Degree in Immunology and Microbiology will provide students with a focused education in immunology and microbiology as well as laboratory skills. The program goals are to enhance career advancement in education or industry or prepare a student for a career in research, including further training in graduate and professional programs. Importantly, this program will provide extensive hands-on research experience, where students will be trained in research laboratories located within the department of Immunology and Microbiology at the University of Colorado School of Medicine. Students will complete 38 units that include core course work, electives and participation in cutting-edge research, as well as write and defend a thesis.

Admissions Requirements

- A bachelor's degree with a minimum GPA of 3.0
- Official General GRE or MCAT (both optional)
- Complete transcripts of undergraduate work and any previous graduate work
- A completed application to Graduate Studies
- Three academic letters of recommendation
- Letter of intent
- Strong background in biological sciences. BA/BA in molecular biology, cell biology, genetics, immunology, microbiology or equivalent specialty

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Personal Statement: A one-page personal statement describing the applicant's career goals and purpose for studying biomedical sciences and biotechnology
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Personal statement.
 - Three recommendation letters from people who know your professional, academic and/or personal achievements or qualities well.
- Application Fee: A nonrefundable application fee of \$75.00 (U.S. dollars). Checks or money orders should be made payable to the University of Colorado.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:
 - Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu (preferred)
 - If sending a physical transcript, please mail to:

University of Colorado Anschutz Medical Campus
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Program Requirements

1. Students must complete a total of 38 credit hours.
2. Students must maintain an overall GPA of at least 3.0 ("B"). Courses with a grade lower than 2.7 ("B-") cannot be counted towards the degree requirements.
3. Students must complete 2-3, 5-week, research rotations (MIMS 6070) in their first year. These rotations are arranged with faculty members in the Department of Immunology and Microbiology with the goal of finding a mentor for their thesis project. A rotation with a faculty mentor outside of the department requires prior approval from the Program Director.
4. Students must write and defend a master's thesis based on an Immunology or Microbiology research project. Upon completion of the research rotations, with the consent and support of the relevant faculty mentor, the student will select a lab to join for conducting the master's thesis laboratory research project (MIMS 6950). A minimum of 8 and a maximum of 15 credits of MIMS 6950 may be taken.

Curriculum

Code	Title	Hours
Biological Foundations		
BSBT 6072	Foundations in Biochemistry	1.5
BSBT 6073	Foundations in Molecular Biology	1.5
BSBT 6074	Foundations in Cell Biology	1.5
BSBT 6075	Foundations in Genetics	1.5
Immunology and Microbiology		
BMSC 7810	Core Topics in Biomedical Science (Section 002 Microbiology in Biomedical Research)	2
IMMU 7530	Introduction to Immunology	2
<i>Chose either the Immunology or Microbiology track:</i>		5-6
Immunology		
IMMU 6210	Intensive Advanced Immunology	
BMSC 7810	Core Topics in Biomedical Science (Section 004 Inflammation)	
Microbiology		
MICB 7701	Molecular Virology and Pathogenesis	
MICB 7703	Molecular Mechanisms of Bacterial Disease	
Professional Development		
MIMS 6062	Introduction to Science Communication	1
MIMS 6063	Scientific Literature Analysis	1
BSBT 6064	Scientific Writing	1
BSBT 6067	Statistics for Biomedical Sciences	2
MIMS 6071	Introduction to R Programming for Immunologists and Microbiologists	1
IMMU 7607	Science as a Profession	1
Laboratory Research		
MIMS 6070	Mini-Research Rotations ¹	2-3
MIMS 6950	Laboratory Thesis Research ²	8
Electives		4-5
<i>Can be any combination of the following:</i>		
MIMS 6950	Laboratory Thesis Research (credits taken in addition to the 8 required) ²	

IMMU 6110 Introduction to Bioinformatics³

Any didactic BSBT course not previously taken.

Total Hours 36-39

- ¹ Research rotations arranged by the student with faculty members in the Department of Immunology and Microbiology. Taken for 2-3 credits with each 5-week rotation worth 1 credit.
- ² Requires prior completion of MIMS 6070 and approval of the faculty mentor. Taken multiple times for credit with a variable amount of credits each semester. Credits are commensurate with time devoted to lab and thesis work.
- ³ Requires MIMS 6071 and instructor consent.

Learning Objectives

Upon completing the Master's Degree in Immunology and Microbiology student's will have obtained the following:

1. Broad foundational understanding of terms and concepts related to biochemistry, genetics, cellular and molecular biology.
2. Broad foundational understanding of terms and concepts related to microbiology and immunology.
3. Advanced conceptual understanding of either microbiology or immunology.
4. Advanced technical understanding of immunological and microbiological research techniques.
5. Effective communication of concepts, scientific literature and data related to immunology and microbiology.

Courses

MIMS 6062 - Introduction to Science Communication (1 Credit)

This introductory course in science communication is designed to introduce the skills to effectively convey complex scientific concepts to diverse audiences, including the public, policymakers, and fellow scientists from different fields. Through a combination of brief lectures, in-class activities and practical assignments, students will learn key principles of clear and accurate scientific communication, the ethics of public science discourse, and strategies for engaging written, media and digital platforms. Emphasis is placed on adapting messages for different target audiences, crafting compelling narratives, and developing visual aids. By the end of the course, students will be prepared to communicate their research effectively across a range of platforms.

Grading Basis: Letter Grade

Typically Offered: Spring.

MIMS 6063 - Scientific Literature Analysis (1 Credit)

This course for Immunology and Microbiology Masters students will instruct in how to think critically about scientific literature with particular emphasis on how data is presented used to construct scientific arguments. Students will have practice both analyzing existing literature and scientific presentations, as well as presenting their own work.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

MIMS 6070 - Mini-Research Rotations (1-3 Credits)

The course MIMS 6070, Mini-Research Rotations, will allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MIMS 6071 - Introduction to R Programming for Immunologists and Microbiologists (1 Credit)

Introduction to the R programming language geared towards Immunology and Microbiology students with no prior programming experience. This course will provide instruction in R language syntax, data structures and visualization techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MIMS 6950 - Laboratory Thesis Research (1-6 Credits)

Laboratory Thesis Research with allow Immunology and Microbiology masters students students to engage in mentored laboratory research training ultimately producing a masters thesis based on their work.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

IMMU 7530 - Introduction to Immunology (2 Credits)

This course is an introductory immunology course designed to provide students with an introduction to the field of immunology. This class is intended to introduce students who already have some background in general biology and cell biology to the study of the immune system.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

IMMU 6210 - Intensive Advanced Immunology (3 Credits)

During this intensive-style class, students will attend daily lectures and laboratories in Week 1, then complete a 2-week project with final presentations in Week 3. In Week 1, Students will be fully immersed from 8 am to 6 pm with reading/prep in the evenings. Pre-requisite: AGRAD

Grading Basis: Letter Grade

Typically Offered: Spring.

MICB 7701 - Molecular Virology and Pathogenesis (3 Credits)

Topics in this course include viral structure and genome organization, replication and expression of viral genomes, mechanism of action of tumor viruses, molecular aspects of virus-host cell interactions, animal models of infectious diseases and pathogenesis of human viruses.

Prereq: MICB 7706, MICB 7705 are desirable but not required. Restriction: Permission of Instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

MICB 7703 - Molecular Mechanisms of Bacterial Disease (3 Credits)

The course focuses on molecular processes that bacteria utilize to cause disease in humans. The course content will use specific examples from pathogenic bacteria to illustrate common virulence mechanisms utilized to initiate, maintain and survive interactions with host cells. Prereq: Recommended Fundamentals of Microbiology Restrictions: Permission of the instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IMMU 7607 - Science as a Profession (1 Credit)

This course discusses ethical issues, conflicts of interest, and regulations for working with humans or animals. It also includes instruction on writing papers and grants, giving effective presentations and advice on finding jobs in academia and industry.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

IMMU 6110 - Introduction to Bioinformatics (3 Credits)

An intensive course aimed to introduce basic theory and concepts of commonly used bioinformatics workflows encountered in immunology and microbiology NGS data sets. This course is also designed as a workshop; all workflows will be directly applied to pre-existing datasets.

Pre-requisite: At least one semester of any R programming.

Grading Basis: Letter Grade

Restricted to IMMU, MICB, MICR, BSBT students

Typically Offered: Spring.

BSBT 6060 - Special Topics in Biomedical Science & Biotech (1-3 Credits)

Special topics of interest to graduate students in the biomedical sciences and biotechnology fields.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

Typically Offered: Fall, Spring, Summer.

BSBT 6061 - Project Management (2 Credits)

Provides training in initiating, executing & closing a project, including the management of scope, time, cost, human resources, communication, risk and more. Highly interactive intensive course prepares students for Certified Project Management exam (internationally recognized certification). Taught by Project Management Professional.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6064 - Scientific Writing (1 Credit)

Taught by a biomedical researcher and a professional writing instructor, this 15-hour (3-week) course focuses on developing a framework for successful scientific writing practices, including how to effectively structure arguments, how to write grant proposals and more.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6065 - Case Studies in Responsible Conduct of Research (1 Credit)

Anyone conducting research using federal funding must study RCR. You'll learn expectations and regulations that permeate science. You'll understand consequences of violations to individuals and society. We'll explore misconduct through interactive video, written and video case studies, and other engaging activities.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6067 - Statistics for Biomedical Sciences (2 Credits)

Learn how and when to apply statistical procedures to answer scientific questions relevant to biomedicine, and how to critically assess statistical data for validity.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6068 - Laboratory Research in Structural Biology (1-6 Credits)

The Course BSBT 6068, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on structural biology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

BSBT 6069 - Laboratory Research in Immunology and Microbiology (1-6 Credits)

The Course BSBT 6069, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on immunology and microbiology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

BSBT 6070 - Mini-Research Rotations (1-3 Credits)

The Course BSBT 6070, Mini-Research Rotations, with allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

BSBT 6071 - Introduction to R Programming (1 Credit)

Introduction to the statistical programming language R geared primarily to biomedical science students with little to no previous programming experience. Basic features of R as a programming language and as scientific computing platform. Basics of data cleaning, visualization, and analysis.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6072 - Foundations in Biochemistry (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in biochemistry including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6073 - Foundations in Molecular Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in molecular biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6074 - Foundations in Cell Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in cell biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6075 - Foundations in Genetics (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in genetics including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6076 - Research Explorations (1 Credit)

This course allows for exploration of SBB research labs in a "mini-rotation" format, through meeting faculty, reading literature and participating in lab group meetings and research in order to choose a research lab and prepare a short research proposal.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6078 - Seminar in Immunology and Microbiology (1 Credit)

This course provides students in the Bioinformatics in Immunology/ Microbiology program an integration of didactic knowledge with research approaches to outstanding questions in the field. Students will attend department weekly seminar followed by structured discussion.

Prerequisites - IDPT 7810 & IMMU 7630

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6079 - Leadership in a Global Environment (3 Credits)

The Leadership in a Global Environment course seeks to offer students a foundation for understanding the intricate and complex relationship between language, culture, communicative practices, and the role we play as individuals in the globalized work environment of today. In particular, this course is geared to emerging and developing global leaders. Today's leaders must be incredibly versatile. In fact, the entire management team needs to be able to link their industry science with value in the marketplace and tell a compelling story about what makes not just the innovation but also the company itself, special. Sometimes investors are very focused on the science of the products, and sometimes on the finance, so company leaders have to be prepared to talk about either or both. Today's leaders must be transversal: highly strategic and operational while able to understand and connect clinical, market access, commercial, finance, and strategy. The Leadership in a Global Environment course seeks to offer students a foundation for understanding the intricate and complex relationship between language, culture, communicative practices, and the role we play as individuals in the globalized work environment of today. In particular, this course is geared to emerging and developing global leaders. Today's leaders must be incredibly versatile. In fact, the entire management team needs to be able to link their industry science with value in the marketplace and tell a compelling story about what makes not just the innovation but also the company itself, special. Sometimes investors are very focused on the science of the products, and sometimes on the finance, so company leaders have to be prepared to talk about either or both. Today's leaders must be transversal: highly strategic and operational while able to understand and connect clinical, market access, commercial, finance, and strategy.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6110 - Introduction to Biocomputing (3 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic data set. Prerequisite: Undergraduate degree in science, technology, business, engineering or math.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

BSBT 6111 - Introduction to Biomedical Data Practices (2 Credits)

This course provides students with advance knowledge and topics in every aspects of data science.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

BSBT 6112 - Introduction to Biocomputing (2 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic dataset. Requisite: Must be simultaneously enrolled in BSBT 6113.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6113 - Data Science with R (1 Credit)

In this 4 weeks semi-independent study course, you will learn how to use the "tidyverse" programming paradigm to perform data science operation using the programming language R. At the end of the course, you will learn the basic understanding of the fundamental elements of data science, including; wrangling, exploration, visualization and modeling.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6310 - Practical Clinical Research Informatics (3 Credits)

This course provides students with hands on experience in clinical research informatics involving secondary use of electronic health record (EHR) data, clinical informatics databases, and basic clinical data science as preparation for more advanced informatics or data science coursework. Requisite: 008754 A-GRAD

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6801 - Biomedical Entrepreneurship (3 Credits)

The course addresses the essential elements of bioscience and health innovation and entrepreneurship. Prerequisites: An undergraduate degree in science, technology, business, engineering or math. Cross-listed with ENTP 6801

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

BSBT 6804 - Bioinnovation Regulations (3 Credits)

This course is designed to familiarize biomedical scientists and those interested in the business of science with the fundamentals of U.S. and international regulatory affairs regarding drug discovery and medical devices. Focus is the development of products, such as drugs, devices, diagnostic tests, and health information software, to receive U.S. and international regulatory clearance or approval for commercialization.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6805 - Bioinformatics (4 Credits)

This course will simultaneously introduce students to coding principles (using R) applied to common problems in bioinformatics and data analysis. To this end, students will learn how to import high-throughput data into R, pre-process that data to account for technical anomalies resulting from the acquisition modality (e.g., RNA-Seq, ChIP-Seq), and perform a sequence of statistical analysis (e.g., ANOVA) and data visualization (e.g., heatmaps). At the completion of this course, students will be equipped with coding templates in R that they can apply to data analysis for their own research purposes. Students will also be exposed to more advanced principles of data analysis, such as training machine learning algorithms. These include unsupervised and supervised algorithms, which are commonly used for general data exploration and training diagnostic/prognostic models, respectively.

Prereq: • Mathematical Foundations: Students are expected to have a solid understanding of calculus and matrix algebra. These mathematical principles are essential for comprehending common data analysis techniques used in bioinformatics. • Programming Skills: Coding experience in any programming language is preferred but not required. The course will teach bioinformatics and coding concepts simultaneously, primarily using R as the programming language.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6806 - Communication Skills (3 Credits)

Position yourself for success biomedical research and industry careers where effective communication is essential. Learn and practice the fundamentals of effective public speaking, presenting, interviewing, and personal branding. This is a graduate level course designed for individuals in research and industry fields who are looking to refine their communication skills.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6939 - Internship - Technology and Innovation (3-6 Credits)

The internship provides hands-on learning opportunities for graduate students in institutions related to technology/biotechnology, computer science, engineering, innovation and entrepreneurship. Requisite: Enrollment with permission only. Instructor consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

BSBT 6950 - Laboratory Thesis Research (1-6 Credits)

Laboratory Thesis Research with allow graduate students to engage in laboratory research training in the biomedical science.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

BSBT 7646 - Tissue Biology and Disease Mechanism (1 Credit)

This course provides an overview of organ systems and through 1) a survey of the major systems, including the cellular and molecular mechanisms underlying their function and repair, integrated with 2) common diseases, current therapies, and their mechanistic basis. Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci Core Courses).

Grading Basis: Letter Grade

Typically Offered: Fall.

Contact Us

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Program Director

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Curriculum Director

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Policies

Please refer to the Graduate School Policies page (p. 186).

Modern Human Anatomy (MS)

Overview

The Master of Science Program in Modern Human Anatomy (MHA) provides graduate level training and teaching experience in the physical and virtual anatomical sciences. The curriculum integrates 3D computer imaging and modeling with human cadaver dissection, neuroanatomy, histology, and embryology.

The Master of Science in Modern Human Anatomy (MHA) Program is innovative and unique, bridging an established anatomy/developmental biology curriculum with the foundations of digital imaging technologies now in use in medical care, biomedical research, medical illustration, and teaching. This program blends modern and classical approaches to anatomical study, with a goal of producing a new generation of anatomical professionals prepared for diverse careers. The program emphasizes an individualized, flexible approach to professional growth and career development through a student-designed capstone project.

This two-year program will prepare graduates to work in a broad spectrum of educational and biomedical sub-specialties where creativity and innovation abound, and knowledge of human anatomy is highly valued.

Anatomical Imaging & Modeling track

The latest advancements in medical imaging technology have accelerated the acquisition of high-resolution, 3D anatomical data. Tools such as 3D printers, surface scanners, and virtual/augmented reality headsets have propelled the creation and use of 3D graphics in the research and education of the anatomical sciences. These developments have created a demand for individuals with strong spatial skills, proficient in both human anatomy and in 3D technology. The Anatomical Imaging and Modeling (AIM) track aims to weave traditional teachings in anatomical sciences with cutting-edge, 3D technology through AIM specific coursework, mentorship, project-based learning, and teaching opportunities.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Statement of Purpose: describe plans for graduate study, potential career choices, how the MHA will help reach goals, and comfort with technology.
- Resume or CV
- Past Work: describe aspects of background that will lead to success in this rigorous graduate program, describe past academic and non-academic educational experiences.
- Three letters of recommendation
- Test scores (recommended, not required): GRE, MCAT, and DAT accepted
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars) for domestic applicants and \$75.00 (U.S. dollars) for international applicants. Checks or money orders should be made out to the University of Colorado.
- Interview: After the application is complete, qualifying applicants are invited to participate in one of the MHA interview days. The applicant may choose an in-person or video interview, which will be arranged with the applicant and one faculty member plus a current 2nd year MHA student. The in-person interview days provide applicants with opportunities to learn more about the MHA program, speak

directly with current students and faculty, meet other applicants, and participate in a Curriculum Overview and student-run Q&A session.

To be considered for admission, applicants must participate in the interview process.

- Transcripts: One official transcript from all post-secondary colleges and/or universities should be submitted.

Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

University of Colorado Anschutz Medical Campus Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Degree Requirements

Please note: Year 1 Summer, Year 2 Fall, and Year 2 Spring are flexible, and courses can be taken in many orders and combinations.

First Year

Year 1		
Fall		Hours
ANAT 6205	Imaging and Modeling	4
ANAT 6310	Neuroanatomy	4
ANAT 6412	Foundations of Teaching	1
ANAT 6321	Human Histology	4
Hours		13
Spring		
ANAT 6111	Human Gross Anatomy	8
ANAT 6330	Human Embryology	3
Hours		11
Summer		
ANAT 6600	Experimental Design and Research Methods	1
ANAT 6950	MSMHA Capstone Project	1-12
Hours		2-13
Total Hours		26-37

Second Year

Year 2		
Fall		Hours
ANAT 6910	Teaching Practicum	1-4
Elective (3 Credits)		
ANAT 6950	MSMHA Capstone Project	1-12
Hours		2-16
Spring		
Elective		3
Elective		3

ANAT 6950	MSMHA Capstone Project	1-12
Hours		7-18
Total Hours		9-34

Anatomical Imaging & Modeling Required Courses

Code	Title	Hours
ANAT 6208	Foundations in 3D Modeling for Anatomical Sciences	1
ANAT 6210	Autodesk Maya for Anatomical Science	2
ANAT 6220	Unreal Engine for the Anatomical Sciences	2
<i>Electives</i>		4

MHA Pathway to Dentistry

The MHA Pathway to Dentistry track provides academic and professional preparation and a pathway to the University of Colorado School of Dental Medicine's (SDM) Doctor of Dental Surgery (DDS) program through the M.S. in Modern Human Anatomy. Students admitted to the MHA Pathway to Dentistry track will complete the first-year curriculum of the Modern Human Anatomy program, begin work on the MHA Capstone Project, then transition into the Doctor of Dental Surgery curriculum in the Fall of their 2nd year. Students admitted to the Pathway Program will receive a reserved seat in the DDS program. While completing the 4-year Doctor in Dental Surgery requirements, the students will complete the MHA Capstone Project and Teaching Practicum, to graduate with both the M.S. and the D.D.S. degrees. The goal of the MHA Pathway to Dentistry track is to increase workforce diversity in dental medicine and provide clarity and support in the pathway to pursuing dental medicine as a career.

Year 1		Hours
Fall		
ANAT 6205	Imaging and Modeling	4
ANAT 6310	Neuroanatomy	4
ANAT 6321	Human Histology	4
ANAT 6412	Foundations of Teaching	1
Hours		13
Spring		
ANAT 6111	Human Gross Anatomy	8
ANAT 6330	Human Embryology	3
Hours		11
Summer		
ANAT 6950	MSMHA Capstone Project	1-3
ANAT 6600	Experimental Design and Research Methods	1
Hours		2-4
Year 2 (or later)		
ANAT 6910	Teaching Practicum	1
ANAT 6950	MSMHA Capstone Project	1-8
Electives in School of Dental Medicine		9
Hours		11-18
Total Hours		37-46

Learning Objectives

The Master of Science in Modern Human Anatomy program trains graduate students to be capable and skilled scholars who are successfully able to:

1) Demonstrate a broad knowledge of human anatomy

- Develop an in-depth and thorough understanding of human anatomy at the macroscopic level, including systems-based and regional anatomy.
- Develop an understanding of neural systems organization, cellular neurobiology, and topographic and vascular anatomy of the spinal cord, brain, and cerebrum.
- Develop a microscopic-level comprehension of human tissue, including the structure, function, and organization of cells and tissues.
- Evaluate and assess the developmental process of human embryonic and fetal periods, analyze congenital abnormalities, and integrate embryology to adult human gross anatomy.

2) Understand and apply multiple imaging and modeling modalities

- Synthesize image characteristics, informatics, acquisition, processing, and analysis with an emphasis on 3D and dynamic data.
- Create and implement 3D anatomical models.

3) Teach anatomical sciences at a professional level

- Develop content-based instructional and pedagogical skills, understand frameworks for making curricular decisions, implement active learning techniques and investigate the impact of teaching for diversity in health science programs.
- Apply pedagogical theories to practice in a professional program.

4) Complete a novel work or project that contributes to field of anatomical sciences

- Select a project or pursue an area of research that includes the investigation of one or more sub-disciplines in anatomical sciences, including areas such as: anatomical education, educational technology, clinical applications, and imaging and modeling.
- Demonstrate scientific literacy by critically evaluating your work in the context of published literature.
- Develop aims and establish a methodology for achieving the desired outcomes.
- Present the project publicly.
- Submit a final paper, outlining the project aims, methodology, and outcomes.

5) Develop an emphasis area within anatomy, anatomy education, and/or imaging and modeling

Courses

ANAT 6111 - Human Gross Anatomy (8 Credits)

The Human Gross Anatomy course examines the form and function of the human body at a macroscopic level. Systems-based and regional anatomy lectures are complemented by full-body cadaver dissection. Medical imaging labs provide the opportunity to learn ultrasound skills. Requirements: Must be a degree-seeking student in MS Modern Human Anatomy program.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANAT 6205 - Imaging and Modeling (4 Credits)

This course covers major medical and scientific imaging modalities with an emphasis on 3D scientific and medical visualization. Students will also receive instruction in advanced digital image processing and 3D modeling using industry-standard software such as MATLAB and Maya.

Prerequisite: Only ANAT degree-seeking students

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6208 - Foundations in 3D Modeling for Anatomical Sciences (1 Credit)

An introduction to the applications and techniques necessary for 3D scanning, modeling, and printing. This lab-based course will provide students with hands-on experience on acquiring and processing surface scan data along with strategies for printing and finishing objects using fused-deposition modeling and stereo lithography. Pre-requisite: ANAT 6205

ANAT 6205

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

ANAT 6210 - Autodesk Maya for Anatomical Science (2 Credits)

Autodesk Maya for Anatomical Sciences teaches students to create professional animations illustrating concepts inherent in the study of medical science using Autodesk Maya. Pre-requisite: ANAT 6208.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

ANAT 6220 - Unreal Engine for the Anatomical Sciences (2 Credits)

This course builds upon the foundational 3D modeling skills learned in ANAT 6260 and provides students with the practical experience, inspiration, and confidence to incorporate the Unreal Engine into their capstone. Students will deploy an app built with Unreal Engine. Pre-requisite: ANAT 6208 Prerequisite; ANAT-MS student or instructor permission.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

ANAT 6310 - Neuroanatomy (4 Credits)

Structure & Function in the Human Nervous System. Basic neuroanatomy & neural systems with workshop focus employing facilitated discussions & problem-oriented cases. Laboratory sessions will employ brain specimens, models & image sets. Team-based projects are in-depth exploration of topics with development of collaborative presentations.

Requisite: Restricted to ANAT students only.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANAT 6321 - Human Histology (4 Credits)

Histology is the study of the tissues. By exploring the human structure, function and organization at the histological level, students will gain important pattern recognition skills to integrate microscopic knowledge with macroscopic gross anatomy and other foundational anatomical sciences. (Will replace ANAT 6320) Prereq: Restricted to ANAT students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6330 - Human Embryology (3 Credits)

This graduate level, introductory human embryology course will emphasize developmental aspects of adult anatomy and congenital malformations. Educational value of three-or-four-dimensional models and other ancillary learning resources for human embryology will also be explored. Requisite: Restricted to ANAT students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

ANAT 6412 - Foundations of Teaching (1 Credit)

This course will provide students with training, practice, and constructive feedback in effective teaching skills in order to be successful in the biomedical professions. Topics include learning objectives, the neurobiology of learning, assessments, and effective communication within and outside the classroom.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6490 - Advanced Teaching in Anatomical Sciences (3 Credits)

This course offers a hands-on, supervised experience as an anatomical sciences educator. Readings and discussions will enhance your understanding of educational pedagogy. You will apply these skills as you develop and deliver lecture and lab content in a classroom setting. Instructor consent required.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

ANAT 6600 - Experimental Design and Research Methods (1 Credit)

In this course, students will foster and apply strategies that enable critical evaluation of any published research (including basic, clinical, and educational), as well as develop the skills necessary to conduct and appropriately analyze their own research data.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Summer.

ANAT 6750 - Special Topics: Modern Human Anatomy (1-6 Credits)

This course is offered in a variety of technical and thematic areas in modern human anatomy. The specific topics vary from year to year. Note: This course includes lectures, discussions and workshops.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6840 - Independent Study (1-6 Credits)

This course enables the student to pursue an investigation in a modern human anatomical field of choice toward completion of a capstone project with relatively minor supervision from faculty advisors.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6910 - Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Prereq.: ANAT 6412. Course restricted to ANAT majors.

Grading Basis: Satisfactory/Unsatisfactory

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6911 - Advanced Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Pre-requisite: ANAT degree-seeking student; ANAT 6412

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6931 - MSMHA Internship (1-6 Credits)

The internship provides hands-on learning opportunities and practical experience for graduate students in institutions related to anatomical sciences, imaging, technology/biotechnology, innovation, and entrepreneurship. Restricted to ANAT students only

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

ANAT 6950 - MSMHA Capstone Project (1-12 Credits)

The Capstone project is a scholarly and/or research-based pursuit of knowledge and content development in the area of anatomical sciences, modern imaging and modeling technologies, and educational science completed as part of the MS in Modern Human Anatomy. Prerequisite: Must be ANAT degree-seeking student.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Thomas E. Finger, PhD

Professor, Department of Cell and Developmental Biology

Interim Vice-Executive Director, Modern Human Anatomy Program

Tom.finger@cuanschutz.edu

303-724-3436

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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303-724-7461

Palliative Care (MS)

Overview

The Master of Science Degree in Palliative Care along with the Interprofessional Graduate Certificate in Palliative Care aim to ease suffering worldwide for those patients and families living with serious illness through exemplary palliative care education.

These programs develop Palliative Care Community Specialists through innovative educational pedagogies designed to facilitate learning for healthcare providers and allied health professionals in up-to-date, evidence-based, interdisciplinary palliative care concepts using an online virtual learning environment that offers flexible application-based approaches.

Program courses are delivered in an interprofessional learning environment that mirrors the palliative care work setting. The program focuses on advancing clinical knowledge; developing clinical wisdom; building an evidence-based palliative care practice; enhancing communication skills; and addressing physical, psychological, social, and spiritual suffering.

Admission Requirements

Priority Deadline: April 1

DOMESTIC APPLICATION DEADLINE: May 1

INTERNATIONAL APPLICATION DEADLINE: May 1

To apply for admission applicants must submit the following:

- **Online Graduate School application- select "school, program" to get to the right app**
 - **Personal Statement:** A one-page personal statement describing the applicant's career goals and purpose for studying palliative care.
 - **Resume:** The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - **Three recommendations:** to be completed by people who know your professional, academic and/or personal achievements or qualities well. As such, references must be from professional contacts, such as employers, supervisors, former faculty, preceptors, or professional colleagues. References from clergy, family members, friends or politicians will not be accepted. The contact information for these recommendations will be put into the application system.
- **Application Fee:** \$50 (domestic), \$75 (international).
- **Interview:** After the application is complete a telephone or video interview will be arranged with the applicant and two faculty/administration members. This interview will afford the program the opportunity to understand the needs of the applicant and for the candidate to ask questions. The interview process is designed to assess the applicant's knowledge of the profession, communication, and ability to perform in a positive, professional manner when working with others. To be considered for admission, applicants must participate in the interview process.
- **Transcripts:** All official transcripts from all post-secondary colleges and/or universities attended must be submitted (even if a degree was not obtained). If courses show on a transcript from a transfer

institution, the official transcripts from the transfer institution must still be submitted.

Preferred Delivery Method:

Electronic Transcripts should be sent to:
graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

Graduate School
Mail Stop C296
Fitzsimons Building, W5107
13001 E. 17th Place
Aurora, CO 80045

Degree Requirements

First Year

First Year

Fall		Hours
PALC 6510	Palliative Care Core Concepts - Principles, & Communication	3
PALC 6110	Basic Pain Assessment & Management: IDT Care	3
Hours		6

Spring

PALC 6210	IDT Care for Symptoms: Part A	3
PALC 6220	IDT Care for Symptoms: Part B	3
Hours		6

Summer

PALC 6520	Communication Skill Refinement: IDT Collaboration	3
Hours		3
Total Hours		15

Second Year

Second Year

Fall		Hours
PALC 6310	Advanced Illness in Special Settings: Part A	3
PALC 6320	Advanced Illness in Special Settings: Part B	3
PALC 6910	Systems Topics: Preparation to Capstone	3
Hours		9
Spring		
PALC 6330	Advanced Illness in Special Settings: Part C	3
PALC 6120	Advanced Concepts in Pain Management	3
PALC 6950	Capstone Project	3
Hours		9
Total Hours		18

Learning Objectives

Communication Skills

The PC Community Specialist demonstrates expertise in relationship centered communication theory and skills to gather and share information, negotiate shared decision making and plans of care, and sustain relationships with palliative care patients/families and healthcare providers.

Expert Symptom Management Skills

The PC Community Specialist demonstrates expert clinical judgment in performing a comprehensive patient assessment, leading to diagnosis development, implementation, and ongoing reassessment with modification of effective, evidence-based care plans utilizing the skills and expertise of the interdisciplinary team (IDT), for all distressing symptoms experienced by patients with any serious illness.

Ethics, Advocacy, and Legal Aspects of Care

The PC Community Specialist incorporates knowledge of ethical and legal aspects of palliative care into practice by exhibiting the highest professional standards and by advocating for the rights of patients/families to access optimal palliative care.

Spiritual, Religious and Existential Aspects of Care

As part of the IDT, the PC Community Specialist demonstrates and promotes spiritually sensitive care, respecting diversity in all forms, for patients/families and other health care professionals.

Social and Cultural Aspects of Care

As part of the IDT, the PC Community Specialist demonstrates respect for diverse communities through culturally sensitive skills, recognizing how social and economic barriers and challenges impact the delivery of health care services.

Psychological Aspects of Care

As part of the IDT, the PC Community Specialist effectively addresses psychological concerns, and promotes access to expanded resources for all patients/families living with any serious illness.

Integration of Palliative Care for patients throughout the course of any serious illness in all venues

The PC Community Specialist effectively advocates to provide evidence-based palliative care for patients/families and supports and develops expanded resources for all patients/families living with any serious illness.

Effective Palliative Care Educator

The PC Community Specialist demonstrates knowledge, skills, and applies adult learning principles when providing palliative care education to patients, families, healthcare professionals, and the community.

Systems Thinking

The PC Community Specialist demonstrates understanding of the healthcare system to effectively manage and utilize resources to support patients/families living with any serious illness and advocates for the reform of healthcare systems to provide optimal palliative care.

Courses

PALC 6510 - Core Concepts, Principles & Communication Skills (3 Credits)

Online. Mostly asynchronous, includes a synchronous online 3-day intensive held in late September. Topics include: communication skills (introduction/building rapport), philosophy/integration of PC, whole person assessment, the meaning of illness, spirituality in PC, resilience, goals of care conversations, decision-making capacity, and narrative medicine. Online synchronous intensive covers topics including: interdisciplinary teams, ethics, the role of PC community specialist, resilience, and communication assessment.

Grading Basis: Letter Grade

PALC 6110 - Basic Pain Assessment & Management: IDT Care (3 Credits)

Online. Asynchronous. Topics include: pain pathophysiology, assessment, integrative approaches, non-pharmacological interventions, and non-opioid and opioid pharmacological pain management, pain and anxiety, safe use of opioids and non-opioids, confidentiality, quality of life assessment, suicidal ideation, the social stigma of opioids, mindfulness, and family systems.

Grading Basis: Letter Grade

PALC 6210 - IDT Care for Symptoms: Part A (3 Credits)

Online. Mostly asynchronous, includes two synchronous communication sessions. Topics include: assessment and management of hematologic/metabolic/structural emergencies, depression, nausea/vomiting, fatigue, delirium, dysphagia, and GU issues, PTSD, grief, mental status exam screening, financial issues and sexuality concerns. Communication skill building and assessments for family meetings.

Grading Basis: Letter Grade

PALC 6220 - IDT Care for Symptoms: Part B (3 Credits)

Online. Asynchronous. Topics include: assessment and management of skin issues, insomnia, GI symptoms, anorexia, liver dysfunction, dyspnea, cough, and care of the imminently dying, autonomy/dignity, group process, family conflict, caregiver issues, hastened death, and euthanasia.

Grading Basis: Letter Grade

PALC 6520 - Communication Skill Refinement: IDT Collaboration (3 Credits)

Online. Asynchronous with a synchronous intensive held the first weekend in August. Topics include: leadership, the business of PC, value proposition, ethics, spiritual care and PC, communication training, and humanities. Capstone project presentations.

Prerequisite: PALC 6510 (<https://catalog.ucdenver.edu/search/?P=PALC%206510>)

Grading Basis: Letter Grade

PALC 6310 Advanced Illness in Special Settings: PART A (3 Credits)

Online. Asynchronous. Topics include: palliative care in the home/community/long-term care, rural setting, and telehealth, PC in cardiology, neurology, pulmonology, and the pediatric population. Emphasis on early PC combined with disease-focused therapy. Attention to prognostication and transitions into palliative/hospice care or discontinuing treatments including bioethical review, survivorship, ethical challenges in new technology, media relations, and advocacy, diversity/equity/inclusion in PC communication.

Prerequisite: PALC 6510 (<https://catalog.ucdenver.edu/search/?P=PALC%206510>)

Grading Basis: Letter Grade

PALC 6320 - Advanced Illness in Special Settings: Part B (3 Credits)

Online. Asynchronous. Topics include: PC in the inpatient setting, prenatal/newborn populations, vulnerable populations, geriatrics, and global PC, chronic illness, advance care planning, powerlessness, child grief, decision-making, and existential suffering.

Prerequisite: PALC 6510 (<https://catalog.ucdenver.edu/search/?P=PALC%206510>)

Grading Basis: Letter Grade

PALC 6330 - Advanced Illness in Special Settings: Part C (3 Credits)

Online. Mostly asynchronous, includes two synchronous communication sessions. Topics include: assessment/management of end-stage renal and liver disease, malignancies, care for the cognitively impaired, and sudden death/trauma in the pediatric population, prognostication and transitions into palliative/hospice care, ethics at end of life, parenting issues, sibling grief, spiritual struggles, relationship issues, and final communication assessment.

Prerequisite: PALC 6510 (<https://catalog.ucdenver.edu/search/?P=PALC%206510>)

Grading Basis: Letter Grade

PALC 6120 - Advanced Concepts in Pain Management (3 Credits)

Online. Asynchronous. Topics include: methadone, opioid infusions, interventional pain management, and other complex modalities, pain in the face of addiction, MAiD, compassion fatigue, pediatric and adolescent ethical challenges, and public policy around opioids and REMS. Final synchronous resiliency project presentation

Prerequisites: PALC 6110 (<https://catalog.ucdenver.edu/search/?P=PALC%206110>) and 6510 (<https://catalog.ucdenver.edu/search/?P=PALC%206510>)

Grading Basis: Letter Grade

Capstone Course Descriptions

PALC 6910 - Systems Topics: Preparation to Capstone (3 Credits)

Online. Asynchronous with some synchronous mentoring/presentations. Topics include: palliative care research, quality improvement, health care policy and advocacy and palliative care program development including institutional needs assessment and program planning, instruction to become a PC educator, development of professional resilience and role of medical humanities.

Prerequisite: PALC 651 (<https://catalog.ucdenver.edu/search/?P=PALC%206511>)0

Grading Basis: Letter Grade

PALC 6950 - Capstone Project (1-3 Credits)

Online. Asynchronous with some synchronous mentoring/presentations. Topics include: Master of Science in Palliative Care Capstone Project design, implementation, evaluation, and presentation the result of a research, QI, education, advocacy, or medical humanities project during year 2 with mentorship from faculty.

Perquisites: PALC 6910 (<https://catalog.ucdenver.edu/search/?P=PALC%206910>) and PALC 6520 (<https://catalog.ucdenver.edu/search/?P=PALC%206520>)

Grading Basis: Letter Grade

Please refer to the Graduate School Policies page (p. 186).

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Pharmaceutical Sciences (MS)

The multidisciplinary field of pharmaceutical sciences has seen rapid advances that are critical to the discovery and development of drugs for chronic diseases such as cancer and diabetes, and emerging threats such as new pathogens and drug resistance. By training with our experts, you'll be on the best track to keep up with the constantly evolving field.

To learn more about the **Master of Science in Pharmaceutical Sciences**, please [click here](#) (p. 425) to view the information within the Skaggs School of Pharmacy and Pharmaceutical Sciences portion of the academic catalog.

Graduate School PhD Programs

Overview

As the highest academic credential, the PhD consists of rigorous, in-depth training and novel, independent scholarship. Students may enter many PhD programs with only a Bachelor's degree, though some require a Master's degree. Other common requirements include extensive undergraduate or postbaccalaureate research experience. PhDs are typically full-time endeavors and some may include funding to support living expenses.

Detailed descriptions of each program and their admissions requirements can be found on the PhD Program's page.

- Biomedical Sciences (p. 247)
- Biostatistics (PhD) (p. 247)
- Cancer Biology (PhD) (p. 247)
- Cell Biology, Stem Cells & Development (PhD) (p. 247)
- Climate and Human Health (PhD) (p. 247)
- Clinical Science (PhD) (p. 248)
- Computational Bioscience (PhD) (p. 250)
- Epidemiology (PhD) (p. 250)
- Health Services Research (PhD) (p. 250)
- Human Medical Genetics & Genomics (PhD) (p. 250)
- Immunology (PhD) (p. 250)
- Integrated Physiology (PhD) (p. 251)
- Medical Scientist Training Program (MD/PhD) (p. 251)
- Microbiology (PhD) (p. 251)
- Molecular Biology (PhD) (p. 251)
- Neuroscience (PhD) (p. 251)
- Nursing (PhD) (p. 251)
- Pharmaceutical Outcomes Research (PhD) (p. 251)
- Pharmaceutical Sciences (PhD) (p. 251)
- Pharmacology and Molecular Medicine (PhD) (p. 252)
- Rehabilitation Science (PhD) (p. 252)
- Structural Biology & Biochemistry (PhD) (p. 252)
- Toxicology (PhD) (p. 252)

Biomedical Sciences

The Biomedical Sciences Program (BSP) is the premier umbrella admissions program for the AMC campus. Because the program is interdisciplinary, BSP students have the flexibility to choose one of 11 courses of study. We have over 200 training faculty representing all the basic and clinical departments on campus.

To learn more about the **Biomedical Sciences PhD** umbrella program, please click here (p. 335) to view the information within the School of Medicine portion of the academic catalog.

Biostatistics (PhD)

This program will prepare you for advanced study and research in biostatistics. It's a great fit for students with a strong background in mathematics and statistics who are interested in working in health care and biological settings. As a student in this program, you'll function as an independent investigator or co-investigator with researchers in other areas, taking the lead in designing studies and analyses. Our faculty are

studying the analysis of longitudinal data, clinical trials, statistical methods in genetics and genomics, causal modeling, treatment of missing data and imputation, image analysis, functional data analysis, and data visualization, which means you can find the mentor who's right for you.

To learn more about the **PhD in Biostatistics**, please click here (p. 150) to view the information within the Colorado School of Public Health portion of the catalog.

Cancer Biology (PhD)

The Cancer Biology Training Program at the University of Colorado Denver | Anschutz Medical Campus is an interdepartmental program leading to the PhD in Cancer Biology. The Cancer Biology Program combines training in the basic biomedical sciences with opportunities to apply clinical and translational research to studies on human cancer.

Our highly accomplished training faculty includes over 50 basic and clinical scientists from 13 departments and divisions. Our curriculum is rigorous, yet flexible, and provides opportunities for advanced study in cellular and molecular oncology, as well as the translational medical sciences. Our research community includes a NIH/NCI designated Comprehensive Cancer Center, which brings together scientists with diverse research approaches to focus on the problem of cancer. The training program in cancer biology is supported by a NIH/NCI T32 training grant that provides funding for pre and post-doctoral trainees.

To learn more about the **PhD in Cancer Biology**, please click here (p. 337) to view the information within the School of Medicine portion of the academic catalog.

Cell Biology, Stem Cells & Development (PhD)

In the Cell Biology, Stem Cells and Development (CSD) PhD program, our students utilize hypothesis-driven experimental approaches and cutting edge technologies to pursue important questions from basic mechanisms in developmental and cell biology to translational applications of stem cell biology.

CSD students and faculty have common interests in understanding the molecular and cellular mechanisms that underlie development, disease, stem cell biology and regeneration. This common curiosity promotes extensive interaction among labs and creates a fantastic intellectual environment. Our CSD Program is structured to provide training in hypothesis-driven experimental approaches coupled with cutting edge technologies. We foster creativity and independence, enabling students to pursue important questions at the junctures between the fields of cell, developmental, and stem cell biology.

To learn more about the **PhD in Cell Biology, Stem Cells & Development**, please click here (p. 340) to view the information within the School of Medicine portion of the academic catalog.

Climate and Human Health (PhD)

The PhD in Climate and Human Health is designed to develop research and educational leaders who have transdisciplinary skills in data analytics, policy and regulation, implementation science, health equity, and community and workforce-based research with an emphasis on vulnerable populations and communities. "Climate" is interpreted broadly and can include heat and temperature, extreme weather events, wildfires,

air quality, water systems, emerging hazardous exposures from “green” industries, and alterations to ecosystems with direct impacts on vector-borne and other infectious diseases.

“Health” is interpreted as both physical and mental health of all populations, especially vulnerable human populations. Graduates will have a strong knowledge base in the climate health sciences, research skills, education and mentorship skills, and leadership, communication and management training.

To learn more about the **PhD in Climate and Human Health**, please click here (p. 151) to view the information within the Colorado School of Public Health portion of the catalog.

Clinical Science (PhD)

Overview

The Clinical Science PhD program is designed for qualified individuals who have already earned a health care graduate or professional degree (i.e., physicians, MSPH graduates, biostatisticians, epidemiologists, nurses, pharmacists, and dentists) or a graduate degree related to health sciences.

The overall goal of CLSC doctoral training program is to prepare nationally competitive clinician/clinical scientists who are able to translate across the discovery-community continuum. Students in our program are highly motivated and bright individuals who seek additional rigorous training to become leaders in their field and make significant contributions to improving the health of citizens.

Please visit the CLSC PhD website for current admission information: <https://cctsi.cuanschutz.edu/training/clsc#phd> (<https://cctsi.cuanschutz.edu/training/clsc/#phd>)

Admissions Requirements

All completed application materials for the PhD Program must be submitted by February 1st of each year to be considered for admission. There is only one application submission and review process per year. CLSC accepted applicants may start in the summer or fall term. Specific course offerings can be previewed at our Course Books and Schedules section of this page under Resources.

Minimum Criteria for Admission

Meeting the criteria does not guarantee admission.

- An undergraduate GPA of at least 3.0 (on a 4.0 scale)
- A masters, graduate or professional doctoral degree with a GPA of at least 3.0 (on a 4.0 scale).
- A graduate degree that required course completion in study design and analytics/biostatistics.
- An acceptable and verifiable GRE, MCAT or PCAT score. This requirement can be waived by an earned MS/MPH or PhD from an accredited US School
- Previous clinical and translational research experience that involved working in clinical settings and/or with clinicians. Those without this clinical translational experience are encouraged to contact Dr. Lisa Cicutto to discuss the appropriateness and fit of the program.

You are encouraged to speak with CLSC staff and/or faculty before applying to the program.

Please note that the Clinical Science Program does not provide stipends to assist with tuition and/or room and board expenses. In addition, we currently do not have any research or teaching assistantships to support the educational costs of international students.

International Applicant Additional Admission Criteria
In addition to the general admission requirements listed above, international applicants must meet additional requirements dictated by the University. For additional information about these requirements, please review the International Student Requirements (<https://www.ucdenver.edu/academics/InternationalPrograms/OIA/admissions/apply/application/graduate/Pages/default.aspx>) for Graduate School admissions.

Please visit the CLSC PhD website for current admission information: <https://cctsi.cuanschutz.edu/training/clsc#phd> (<https://cctsi.cuanschutz.edu/training/clsc/#phd>)

Degree Requirements

Clinical Investigation Track

Code	Title	Hours
BIOS 6601	Applied Biostatistics I	3
BIOS 6602	Applied Biostatistics II	3
Choose 1 from the following:		
BIOS 6648	Design and Conduct of Clinical Research	
EPID 6626	Research Methods in Epidemiology	
BIOS 6623	Advanced Data Analysis	
CLSC 6210	Research Seminars in Clinical Science	1
CLSC 6270	Critical Appraisal Seminars in Clinical Science	1
CLSC 7101	Grant Writing I	1
CLSC 7150	Ethics and Responsible Conduct of Research	1
or CLSC 7152	Ethics and Responsible Conduct of Research in the Digital Age	
CLSC 7202	Clinical Outcomes and Applications	2
CLSC 7300	Scientific Grant Review Process: CCTSI Proposals	1
EPID 6630	Epidemiology	3
EPID 6631	Analytical Epidemiology	3
CLSC 8990	Doctoral Thesis	1-10

- 22 Required Clinical Investigation Course Credits
- 8 Elective Course Credits
- **Total required course hours for degree: 30**

Health Information Technology Track

Code	Title	Hours
BIOS 6601	Applied Biostatistics I	3
BIOS 6602	Applied Biostatistics II	3
Choose 1 from the following:		
BIOS 6648	Design and Conduct of Clinical Research	
EPID 6626	Research Methods in Epidemiology	
BIOS 6623	Advanced Data Analysis	
EPID 6631	Analytical Epidemiology	
CLSC 6210	Research Seminars in Clinical Science	1
CLSC 6270	Critical Appraisal Seminars in Clinical Science	1

HLTH 6071 or NURS 6286	Introduction To Health Information Technology Foundations Informatics	3
NURS 6290	Information Systems Life Cycle	4
CLSC 7101	Grant Writing I	1
CLSC 7150 or CLSC 7152	Ethics and Responsible Conduct of Research Ethics and Responsible Conduct of Research in the Digital Age	1
CLSC 7202	Clinical Outcomes and Applications	2
EPID 6630	Epidemiology	3
NURS 6293 or ISMG 6080	Database Mgmt Systems Database Management Systems	3
CLSC 8990	Doctoral Thesis	1-10

- 28 required Health Information Technology course credits
- 2 elective course credits
- **Total required course hours for degree: 30**

Learning Objectives

- Adhere to legal, ethical, and regulatory principles related to clinical research
- Critically appraise existing literature and sources of information
- Apply evidence-based practice principals
- Accurately select, use and interpret commonly used statistics
- Apply and use appropriate study designs and methods to address research questions/hypotheses
- Identify and measure clinically relevant and meaningful outcomes
- Design and conduct clinical and patient-oriented research studies
- Publish research manuscripts in peer-reviewed journals
- Prepare and submit grant proposals
- Provide constructive reviews and feedback to colleagues
- Demonstrate effective communication and leadership skills
- Participate in interdisciplinary collaboration

Courses

Please visit the CLSC PhD website for course information: <https://cctsi.cuanschutz.edu/training/clsc#phd> (<https://cctsi.cuanschutz.edu/training/clsc/#phd>)

CLSC 7150 - Ethics and Responsible Conduct of Research (1 Credit)
Course provides overview of the field of ethics in clinical research. Topics include historical background, current regulations, IRB requirements on human subjects protection issues. Students will learn how to develop approaches to conduct ethical human subjects research in an optimal manner.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 7152 - Ethics and Responsible Conduct of Research in the Digital Age (1 Credit)

This course will provide an overview of the evolving ethical issues in clinical, translational and public health research involving digital data and technologies.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

CLSC 6270 - Critical Appraisal Seminars in Clinical Science (1 Credit)

This course provides an overview of the approaches for critically appraising common study designs published in the clinical and translational sciences literature, as well as other sources of information.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 7202 - Clinical Outcomes and Applications (2 Credits)

The Clinical Outcomes and Applications course introduces students to key concepts and methods in health outcomes research, focusing on how to measure, analyze, and apply outcomes data in research and health policy. Through a mix of lectures, case studies, and hands-on activities, students will learn to design research questions, evaluate study designs, and explore the real-world impact of outcomes research on healthcare delivery. Prereq: BIOS 6601 and BIOS 6602 or BIOS 6611 and EPID 6630.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 7300 - Scientific Grant Review Process: CCTSI Proposals (1 Credit)

Students will understand and participate in the process of scientific review of human subject research protocols submitted to the University of Colorado Denver Clinical Translational Research Centers at University Hospital and the Children's Hospital. Prereq: BIOS 6601 BIOS 6602 or BIOS 6611 and BIOS 6612.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CLSC 6210 - Research Seminars in Clinical Science (1 Credit)

This course provides an overview of the types of clinical translational studies being conducted by senior CLSC doctoral students. The interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages of training, mentors and faculty.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 7101 - Grant Writing I (1 Credit)

The purpose of this course is to develop and improve your skills in writing successful grant applications and participating in the critique and review process of grants. Prerequisites: BIOS 6601 and EPID 6630. Course Restrictions: CLSC students, unless written approval of Course Director.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CLSC 8990 - Doctoral Thesis (1-10 Credits)

This course involves the student working with his/her research mentor and research project committee develop, design and execute a clinical science doctoral study as well as to write up the project as a thesis.

Prerequisite: Program consent. BIOS 6601 or BIOS 6611, BIOS 6602 or BIOS 6680 and HSMP 6617, CLSC 7150, EPID 6630, BIOS 6648 or EPID 6626 or HSMP 6670. Restrictions: Only CLSC PhD students or collaborative CLSC and CSPH Health Services Research Students.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact US

Please visit the CLSC PhD website for contact information: <https://cctsi.cuanschutz.edu/training/clsc#phd> (<https://cctsi.cuanschutz.edu/training/clsc/#phd>)

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Computational Bioscience (PhD)

The CPBS Program is globally recognized for its research and teaching of computational biology and bioinformatics at the University of Colorado's Anschutz Medical Campus. The Program is designed to produce graduates with depth in computational methods and molecular biomedicine, an intimate familiarity with the science and technology that synthesizes the two, and the skills necessary to pioneer novel computational approaches to significant biomedical questions.

The Computational Bioscience Program of the University Of Colorado School Of Medicine is dedicated to training computational biologists who aspire to achieve excellence in research, education and service, and who will apply the skills they learn toward improving human health and deepening our understanding of the living world. The Computational Bioscience Program provides graduates with the foundation for a lifetime of continual learning. Our curriculum integrates training in computation and biomedical sciences with student research and teaching activities that grow increasingly independent through the course of the program. Our graduates are able to do independent computational bioscience research, to collaborate effectively with other scientists, and to communicate their knowledge clearly to both students and the broader scientific community.

To learn more about the **PhD in Computational Bioscience**, click here (p. 343) to view the information within the School of Medicine portion of the academic catalog.

Epidemiology (PhD)

In this program, you'll gain advanced skills in analytical methods, biostatistics, and field research methods. In addition, you'll learn about grant writing and research ethics and have the opportunity to select a minor course of study. Our department has a strong base of funded research projects providing students with many opportunities for research support and data for dissertation projects. Our faculty are studying everything from food safety, to diabetes, to gene-environment interactions, which means you can find the mentor who's right for you.

To learn more about the **PhD in Epidemiology**, please click here (p. 152) to view the information within the Colorado School of Public Health portion of the catalog.

Health Services Research (PhD)

In this program, you'll study how the interplay of social factors, health technologies, and personal behaviors impact healthcare access, healthcare costs, and quality of life. You'll be trained to think like a scientist, implementing and developing research studies that assess predictors of disease and the effectiveness of interventions. Our faculty are studying everything from disaster preparedness to health insurance to financing hospitals, which means you can find the mentor who's right for you.

To learn more about the **PhD in Health Services Research**, please click here (p. 153) to view the information within the Colorado School of Public Health portion of the catalog.

Human Medical Genetics & Genomics (PhD)

The Human Medical Genetics and Genomics Graduate Program (HMGGP) at CU Anschutz is an interdisciplinary, interdepartmental program designed to coordinate outstanding graduate training and research opportunities in all aspects of Human and Medical Genetics. The HMGGP faculty are committed to a dynamic and outstanding program that provides training and mentorship to the next generation of leaders in the fields of human and medical genetics and genomics.

To learn more about the **PhD in Human Medical Genetics & Genomics**, please click here (p. 346) to view the information within the School of Medicine portion of the academic catalog.

Immunology (PhD)

The doctoral program in Immunology at the University of Colorado Anschutz Medical Campus trains students in diverse areas of immunology that includes innate and adaptive immunity, host-pathogen interactions, tumor immunity, autoimmunity, immune deficiencies, and vaccine development.

The Immunology Graduate Program at the University of Colorado Anschutz Medical Campus is amongst the most prominent basic Immunology graduate research training Programs in the country. Since its founding in 1989, our Program has conferred over 150 PhD degrees to students from a variety of ethnic and cultural backgrounds. Our curriculum combines formal coursework with mentoring by an engaged faculty in a collaborative environment. The Program draws from the academic strengths of three institutions that contribute significant resources and house our training faculty and students – The CU Denver

| Anschutz, National Jewish Health, and the Barbara Davis Center for Childhood Diabetes.

To learn more about the **PhD in Immunology**, please click here (p. 349) to view the information within the School of Medicine portion of the academic catalog.

Integrated Physiology (PhD)

Integrated Physiology is a multidisciplinary PhD training program that prepares students for careers in biomedical research. Students in Integrated Physiology have opportunities to explore how cells, organ systems and organisms regulate complex physiological functions through integration of molecular, cellular and physiological mechanisms.

To learn more about the **PhD in Integrated Physiology**, please click here (p. 352) to view the information within the School of Medicine portion of the academic catalog.

Medical Scientist Training Program (MD/PhD)

The Medical Scientist Training Program provides rigorous training for students interested in a career in clinical medicine and basic science research.

The MST Program's mission is to provide students with the breadth and depth of training necessary to excel as clinician scientists.

Colorado has strengths in Molecular and Cellular Biology, Immunology, Epidemiology, Mechanical Engineering, Biomedical Engineering, Virology, Neuroscience, Endocrinology, Pharmacology, and Cancer Biology, which provides an exciting spectrum of research opportunities for MSTP students.

To learn more about the **Medical Scientist Training Program**, please click here (p. 355) to view the information in the **School of Medicine** portion of the academic catalog.

Microbiology (PhD)

The Graduate Program in Microbiology at the University of Colorado Anschutz Medical Campus is a Ph.D. program that prepares students to contribute to an understanding of microbial species, including archaea, bacteria, fungi, helminths, protozoa, and viruses, and their positive and negative roles in the health of humans. Despite progress and breakthroughs in public health, vaccination, therapeutics, and antibiotics, there are many ongoing and emerging challenges in the prevention and treatment of infectious disease. As we continue to learn about the complex populations of organisms that surround us and colonize us, rigorous training of future young investigators in microbiology will continue to be essential to human health. The principle aim of the Graduate Program in Microbiology is to help produce the next generation of microbiologists to address unsolved and arising questions in basic and translational microbiology research.

To learn more about the **PhD in Microbiology**, please click here (p. 365) to view the information within the School of Medicine portion of the academic catalog.

Molecular Biology (PhD)

The Molecular Biology Program is dedicated to providing rigorous training to its students in a supportive environment. Molecular Biology faculty are members of many different departments and are applying the techniques of molecular biology to answer questions in diverse areas. Molecular biology, the science of how living things work at the molecular level, has led the recent revolution in our understanding of human disease and gave birth to the biotechnology industry. In almost all aspects of modern biomedical research, a professional knowledge of molecular biology is essential. Our training program is designed to equip students for careers at the cutting edge of biology.

To learn more about the **PhD in Molecular Biology**, please click here (p. 368) to view the information within the School of Medicine portion of the academic catalog.

Neuroscience (PhD)

The Neuroscience Training Program at the CU School of Medicine provides multidisciplinary PhD training covering the breadth of neurobiology. Hands-on research training in state-of-the-art laboratories and formal coursework in cellular and molecular neurobiology, systems, neural development, neuropharmacology, and biochemistry, propels students to competitive careers in the sciences.

To learn more about the **PhD in Neuroscience**, please click here (p. 371) to view the information within the School of Medicine portion of the academic catalog.

Nursing (PhD)

CU Nursing provides one of the nation's top PhD. in Nursing programs, with innovative programming, exceptional faculty, and unique resources on the Anschutz Medical Campus. In two to three years, you can complete a Doctor of Philosophy PhD. in Nursing as a culmination of your education. This doctorate opens the doors of academia and research so that you can become a professor, researcher, scientist or healthcare analyst. In this program, nurse scholars will advance the art, science and practice of the discipline.

To learn more about the **PhD in Nursing**, please click here (p. 120) to view the information in the College of Nursing portion of the academic catalog.

Pharmaceutical Outcomes Research (PhD)

Who decides if a drug is worth producing? Which drugs should insurance companies cover? How do we determine who gets access to lifesaving therapies? Earn your PhD in Pharmaceutical Outcomes Research and join us as we lead the way in evaluating health care interventions and their economic, clinical, and humanistic outcomes.

To learn more about the **PhD in Pharmaceutical Outcomes Research**, please click here (p. 430) to view the information within the Skaggs School of Pharmacy and Pharmaceutical Sciences portion of the academic catalog.

Pharmaceutical Sciences (PhD)

From drug discovery all the way to clinical trials, our PhD program in Pharmaceutical Sciences will give you ideal training to become

an innovator. Major areas of study include biotechnology, molecular biophysics, drug delivery, nanotechnology, clinical pharmaceutical sciences, and medicinal chemistry.

To learn more about the **PhD in Pharmaceutical Sciences**, please click here (p. 434) to view the information within the Skaggs School of Pharmacy and Pharmaceutical Sciences portion of the academic catalog.

Pharmacology and Molecular Medicine (PhD)

The Pharmacology and Molecular Medicine Training Program is truly both interdisciplinary and interdepartmental with faculty members having primary appointments in Anesthesiology, Biochemistry & Molecular Genetics, Immunology, Medicine, Neurology, Pathology, Pediatrics, Pharmaceutical Sciences, Pharmacology, and Physiology & Biophysics. Training Program faculty are internationally renowned in the areas of neuroscience, cancer biology, cardiovascular biology, signal transduction, structural biology, and bioinformatics.

To learn more about the **PhD in Pharmacology and Molecular Medicine**, please click here (p. 374) to view the information within the School of Medicine portion of the academic catalog.

Rehabilitation Science (PhD)

The Rehabilitation Science PhD program is comprised of core and associated faculty, postdoctoral fellows, students and research assistants with a broad background, including physical therapy, medicine, psychology, engineering, and public health, all working together to improve the lives of people who live with disabilities.

The environment is highly collaborative, with strong mentors and state of the art facilities. While in the PhD Program, students develop a wide range of skills, including research and teaching; presenting nationally, and learning to write grants and publish manuscripts.

To learn more about the **PhD in Rehabilitation Science**, please click here (p. 378) to view the information within the School of Medicine portion of the academic catalog.

Structural Biology & Biochemistry (PhD)

The Structural Biology and Biochemistry (STBB) PhD Program is an interdepartmental graduate training program offered within the School of Medicine at the University of Colorado Anschutz Medical Campus in Aurora, Colorado. Student training places a major emphasis on research experiences, both in lab rotations and thesis projects, and includes a range of coursework in biochemistry, biophysics, drug design, pharmacology, and cellular, molecular, and structural biology.

Faculty research activities cover a range of structural and computational techniques including NMR Spectroscopy, X-Ray Crystallography, Cryo-EM, Mass Spectrometry and Proteomics, Biophysics, and Peptide/Protein Chemistry that are focused on a diversity of biological targets such as signaling molecules, transmembrane proteins, RNA, genome bioinformatics, lipids, and oligosaccharides.

To learn more about the **PhD in Structural Biology & Biochemistry**, please click here (<http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/school-medicine/phd-programs/structural-biology-->

[biochemistry-phd/](#)) to view the information within the School of Medicine portion of the academic catalog.

Toxicology (PhD)

The objective of the toxicology graduate program at the University of Colorado is to educate pre-doctoral students to develop independent research careers in molecular and environmental toxicology. Upon completion of the toxicology graduate program, students will receive a PhD degree in toxicology and utilize their training in academia, industry or government.

To learn more about the **PhD in Toxicology**, please click here (p. 435) to view the information within the Skaggs School of Pharmacy and Pharmaceutical Sciences portion of the academic catalog.

School of Dental Medicine

Welcome!

The University of Colorado School of Dental Medicine (CU SDM) is an amazing research-intensive, comprehensive dental education institution with state-of-the-art clinical care facilities, located on the Anschutz Medical Campus.

The School of Dental Medicine believes dental health is critical to overall health, and we are dedicated to integrating dentistry and the other health professions through our innovative educational programs, real-world research, exceptional patient care, and life-changing community outreach initiatives. Believing that there should not be a distinction between dental and systemic health, the SDM emphasizes our intention to integrate “dental” to improve health.

I'm inspired every day by the wealth of diversity and talent that is present at the CU SDM. I'm excited for you to take a look around our site and discover the education, research and clinical programs that are shaping tomorrow's dental workforce, creating new knowledge and providing person-centered care.

Whether you are a prospective student with an interest in building your future, a potential faculty or partner who wants to make a difference by working with us, I am confident that after browsing our site, you will discover why the CU SDM is one of the most selective US dental schools and is **powering the future of integrated health**.

Thank you for your interest in the work we do.

Sincerely,

Denise Kassebaum
DDS, MS Professor and Dean

Contact Information:

CU Anschutz School of Dental Medicine
13065 East 17th Avenue
Aurora, CO 80045
303-724-6900

The CU School of Dental Medicine strives to achieve excellence in education, research and patient care which integrates into our dynamic curriculum for students. Located on the world-class CU Anschutz Medical Campus, our programs provide students an exceptional opportunity to learn in an interprofessional environment, participate in cutting edge research and train in real clinics on campus, across the state and around the world. These unique opportunities allow our students to graduate with the skills and confidence they need to be successful and make a positive impact in patients' lives.

- Advanced Standing International Student Program (ISP) (p. 255)
- Dental Medicine: Dual Degree (DDS/MPH) (p. 259)
- Doctor of Dental Surgery (DDS) (p. 260)
- General Practice Residency in Dental Medicine (p. 270)
- Geriatric Dental Medicine (Certificate) (p. 273)
- Orthodontics and Dentofacial Orthopedics (Certificate) (p. 274)
- Periodontics (Certificate) (p. 277)

School of Dental Medicine Forms & Policies

The University of Colorado School of Dental Medicine is a diverse teaching, clinical care and research community comprised of dedicated students, faculty and staff working together to help further our mission. Please visit this site (<https://dental.cuanschutz.edu/current-students/student-life-resources/#ac-forms-policies-1>) for the most current policy and form information and corresponding URLs.

The policies below were created to help our students maintain our high standards and ensure the best possible experience during your time here.

- **Academic Policy**
- **Clinic Policy and Procedure Manual**
- **Competency Statements**
- **Compliance Portal**
- **Ethics Point Reporting**
- **Social Media Policy**
- **Student Handbook**
- **Student Identity Verification With Remote Learning**
- **Student Leave Form**
- **Student Organizations Policy**
- **Student Professionalism Flow Chart (SPAIC Committee)**
- **Technical Standards for Admission, Promotion and Graduation**

Mission, Vision, Goals & Values

The CU School of Dental Medicine Strategic Plan has four mission areas: education, research, patient care and community engagement. These align with the University of Colorado Anschutz Medical Campus mission areas (<https://www.cuanschutz.edu/offices/strategic-initiatives/strategic-initiatives/#ac-from-the-chancellor-0>).

Three **Integrated Value Threads** impact the mission areas and include: DEI (diversity, equity and inclusion), health and wellness of SDM resources, and innovation.

A goal has been identified for each mission area and integrated value thread. Priorities define the intent of each SDM mission area goal. Objectives and targets of each goal are assessed in the continuous monitoring of the **CU SDM Institutional Effectiveness Plan**.

Mission

The University of Colorado School of Dental Medicine (CU SDM), a collaborative partner on the Anschutz Medical Campus, is a diverse learning, clinical care and research community. The CU SDM is committed to integrated health that innovates, treats, and discovers for the well-being of, and in service to, local and global communities.

Vision

The CU SDM will be recognized as the leading transformative dental institution that graduates future-ready practitioners to deliver research-informed person-centered-care.

Education

Student Success and Resilience

Goal

The School of Dental Medicine will provide contemporary educational programs that prepare future-ready dentists with the knowledge, skills

and values to practice general dentistry as critical thinkers and lifelong learners, dedicated to fulfilling the public's trust.

incorporating innovative technologies and methods throughout the school and its programs.

Research

Inquiry and Collaborative Science

Goal

The School of Dental Medicine will conduct collaborative research activities to contribute to the discovery and dissemination of new knowledge and evidence-based practice for society's benefit and to be consistent with and advance the mission of the University of Colorado Anschutz Medical Campus.

Patient Care

Person-Centered Clinical Activities

Goal

The School of Dental Medicine's patient care programs will provide person-centered oral health care and support provider wellness, while serving as a clinical resource for dental and post-doctoral students, residents, and the community.

Community Engagement

Population Health

Goal

The School of Dental Medicine will provide oral health care to underserved populations in our communities, involve students in outreach and service-learning, support interprofessional education and patient care, work with community partners on research activities, and provide programs to benefit our alumni and other members of the dental profession in Colorado, nationwide, and globally.

Integrated Value Threads for the Mission Areas

Diversity, Equity and Inclusion

Support an ongoing review of practices to ensure a just and equitable SDM environment where diversity and difference are celebrated.

- **Goal**

- The School of Dental Medicine's education, research, patient care, and community engagement programs will be strengthened by an accountable culture of inclusion for all, and our students, faculty, and staff feel that they belong.

Health and Wellness of SDM Resources

Promote the mental health and overall wellness of the SDM community members, while securing, managing, and building capital and human resources that support the School of Dental Medicine.

- **Goal**

- The School of Dental Medicine will invest in and support growth of its human resources, facilities and technology to promote wellness, safety, accountability, and sustainability in operations.

Innovation

Embrace the SDM's Innovation Agenda to catalyze changes in the education, research, clinical care, and community engagement missions of the SDM.

- **Goal**

- The School of Dental Medicine is committed to being a transformational dental institution that educates a future-ready dental workforce, creates new knowledge, provides person-centered care, and enhances the communities we serve by

Advanced Standing International Student Program (ISP)

Overview

The Advanced Standing International Student Program (ISP) offers dentists who earned a bachelor's degree in dentistry outside of the United States the opportunity to earn a Doctor of Dental Surgery (DDS) degree. Graduates of this two-year, accelerated DDS program may take any state or regional board, and thus are eligible for licensure to practice in the US.

The Advanced Standing International Student Program (ISP) accepts 40 internationally-trained dentists each year. CU Dental is committed to attracting highly qualified students from a variety of backgrounds and life experiences and has accepted students from over 50 different countries. We use a holistic review process when considering applicants by reviewing a number of factors including academic credentials, TOEFL score, community engagement, letters of recommendation. Interview and Hand skills test (Bench exam) are invitation-only.

Admission Requirements

- Dental degree from an international dental program accredited by the respective country (Provisional degrees are not accepted)
- Pass Parts I and 2 of the National Dental Board Exam **OR** the Integrated National Board Dental Exam (INBDE)
- TOEFL Score of 94 or better (No exceptions are made regardless of native language or courses taken)
- *CASPER IS NO LONGER REQUIRED FOR THE 2024-2025 APPLICATION CYCLE.*

We do not grant exceptions to any of the above items under any circumstances.

Curriculum

The Advanced Standing International Student Program (ISP) consists of didactic courses supported by on-line resources, preclinical simulated courses and clinical courses involving direct patient care in the school's clinics.

First Year

The ISP program is a hybrid program where ISP students take some of their courses with just their ISP cohort and other courses with the traditional dental students. This has been designed specifically to fast-track courses that incoming advanced standing students will already have taken. In particular, the first semester and part of the second semester are spent in fast-paced and intensive pre-clinical courses, both didactic and simulated labs. ISP students begin their first patient experience during the 5th month of school.

Among the courses specifically designed and compressed for ISPs are restorative dentistry, occlusion, complete and removable prosthodontics, fixed prosthodontics, endodontic laboratory, esthetic dentistry, oral radiology. Additionally, students take multiple lecture courses alongside second and third year dental students including clinical dental pharmacology, implant dentistry, orofacial pain, oral surgery, infection control, diagnostic radiology, pediatric dentistry, pain control and medical emergencies

After completing transition clinic in spring, beginning in summer, the students are assigned patients for comprehensive care typically starting with oral diagnosis and treatment planning. Rotations are held for

oral surgery and emergency dental care. The time spent in the clinic is integrated with the traditional students. Students also participate in a case presentation seminar where ISP 2 students present treatment plans and patient cases to their faculty and peers..

Advanced standing international dentist students take a course in communication and behavior change in order to enhance their understanding and practice of patient interactions and expectations in North American dental settings.

First Year

Spring		Hours
DISP 7100	Principles of Direct and Indirect Restorations Didactic	0.1-5
DISP 7101	Principles of Direct and Indirect Restorations Lab	0.1-5
DISP 7102	Occlusion	0.1-5
DISP 7103	Occlusion Laboratory	0.1-5
DISP 7107	Clinical Dental Materials	0.1-5
DISP 7111	Complete and Removable Prosthodontics 1	0.1-5
DISP 7112	Cariology	0.1-5
DISP 7114	Complete and Removable Prosthodontics Lab 1	0.1-5
DISP 7121	Endodontics 1	0.1-5
DISP 7122	Periodontology 3	0.1-5
DISP 7123	Periodontology 3 Laboratory - Section 1	0.1-5
DISP 7124	Clinical Dental Pharmacology	0.1-5
DISP 7125	Pain Control 1 (Local Anesthesia)	0.1-5
DISP 7126	Prevention and Management of Medical Emergencies	0.1-5
DISP 7129	Introduction to Clinical Dentistry	0.1-5
DISP 7130	Oral Radiology	0.1-5
DISP 7131	Oral Radiology Lab	0.1-5
DISP 7160	Managing Your ISP Student Practice	0.1-5
DISP 7163	Transition Clinic for ISP Students	0.1-5
Hours		1.9000000000000006-95
Total Hours		1.9000000000000006-95

First Year

Summer		Hours
DISP 7113	Complete and Removable Prosthodontics 2	0.1-5
DISP 7114	Complete and Removable Prosthodontics Lab 1	0.1-5
DISP 7132	Diagnostic Radiology	0.1-5
DISP 7134	Endodontics 2	0.1-5
DISP 7140	Pediatric Dentistry 1	0.1-5
DISP 7202	Case Presentation 1	0.1-5
DISP 7203	Fixed Prosthodontics	0.1-5
DISP 7204	Fixed Prosthodontics Laboratory	0.1-5
DISP 7205	Comprehensive Patient Care Clinic A	0.1-5
DISP 7216	Seminars in Restorative Dentistry	0.1-5
DISP 7220	Pain Control 2 (Nitrous Oxide Analgesia)	0.1-5
DISP 7231	Assessment of the Dental Patient	0.1-5
DISP 7232	Clinical Oral Diagnosis	0.1-5
DISP 7309	Communication & Person-Centered Care	0.1-5

DISP 7320	Oral and Maxillofacial Surgery 2	0.1-5
DISP 7321	Periodontology 4	0.1-5
DISP 7712	Dental Ethics and Professionalism	0.1-5
Hours		1.7000000000000004-85
Total Hours		1.7000000000000004-85

First Year

Fall		Hours
DISP 7164	MEDICALLY COMPLEX DENTAL CARE	.1-10
DISP 7211	Endodontics 1 Laboratory	0.1-5
DISP 7240	Pediatric Dentistry 2	0.1-5
DISP 7300	Case Presentation 2, Case Presentation	0.1-5, 1.8
DISP 7301	Comprehensive Care Clinic B	0.1-5
DISP 7310	Implant Dentistry	0.1-5
DISP 7314	Esthetic Dentistry	0.1-5
DISP 7318	Critical Thinking and Patient Care Seminar	0.1-5
DISP 7320	Oral and Maxillofacial Surgery 2	0.1-5
DISP 7323	Dental Pain and Emergencies	0.1-5
DISP 7328	Clinical Periodontics	0.1-5
DISP 7330	Oral Pathology I	0.1-5
DISP 7331	Clinical Oral Diagnosis	0.1-5
DISP 7335	Clinical Fixed Prosthodontics	0.1-5
DISP 7336	Clinical Operative Dentistry	0.1-5
DISP 7337	Clinical Removable Prosthodontics	0.1-5
DISP 7340	Pediatric Dentistry 3	0.1-5
DISP 7380	Adult Special Health Care Need Dentistry	0.1-5
DISP 7708	Dental Materials Seminar	0.1-10
DISP 7710	Behavioral Health Sciences	0.1-5
DISP 7711	Gerontology & Geriatric Health Care	0.1-5
Hours		2.1000000000000005-111.8
Total Hours		2.1000000000000005-111.8

Second Year

During the second year, students continue to practice comprehensive patient care. Additionally, students take multiple courses in hospital dentistry, oral pathology, clinical oncology, public health and orthodontics some alongside second and third year dental students.

In the second year, students begin preparing for state or regional board examinations in order to become licensed dentists in the United States. Depending on where the student will practice after graduation will dictate when and where the tests take place. Special activities are held for preparation for state licensure. The ADEX board examination is offered at our school, in spring and fall. Please note, board exams are subject to change.

Optional Curriculum

ISP students also have some additional elective credits and research projects that they can opt to pursue. Students participate in these based upon their interests, as well as the amount of time they can dedicate above the required curriculum. They are not a part of the standard curriculum and can occur throughout their time of study, however, it is highly recommended that they not begin until after the first semester. These include a global health dentistry course, our Advanced Clinical Training Service Program (ACTS), and research.

Second Year

Spring		Hours
DISP 8100	Case Presentation 3	0.1-5
DISP 8101	Comprehensive Patient Care Clinic C	0.1-5
DISP 8116	Critical Appraisal of Translational Literature	0.1-5
DISP 8120	Endodontics 3	0.1-5
DISP 8123	Clinical Endodontics	0.1-5
DISP 8124	Clinical Periodontics	0.1-5
DISP 8125	Clinical Oral Maxillofacial Surgery	0.1-5
DISP 8130	Clinical Oncology	0.1-5
DISP 8131	Oral Pathology 2	0.1-5
DISP 8133	Clinical Oral Diagnosis	0.1-5
DISP 8135	Clinical Operative Dentistry	0.1-5
DISP 8136	Clinical Fixed Prosthodontics	0.1-5
DISP 8137	Clinical Removable Prosthodontics	0.1-5
DISP 8140	Clinical Pediatric Dents	1.5
DISP 8160	Dental Ethics and Jurisprudence	0.1-5
DISP 8161	Dental Practice Management & Leadership	0.1-5
DISP 8162	Dental Practice Planning	0.1-5
DISP 8176	Community Public Health 3	0.1-5
DISP 8203	Special Care Clinic A	0.1-5
DISP 8209	Advanced and Digital Prosthodontics	0.1-5
DISP 8612	Orofacial Pain	0.1-5
Hours		3.5000000000000004-101.5
Total Hours		3.5000000000000004-101.5

Second Year

Summer		Hours
DISP 8125	Clinical Oral Maxillofacial Surgery	0.1-5
DISP 8200	Case Presentation 4	0.1-5
DISP 8201	Comprehensive Patient Care Clinic D	0.1-5
DISP 8206	Special Care Clinic B	0.1-5
DISP 8220	Clinical Endodontics, Clinical Endodontics	0.1-5, 0.3
DISP 8222	Clinical Periodontics	0.1-5
DISP 8225	Clinical Fixed Prosthodontics	0.1-5
DISP 8226	Clinical Operative Dentistry	0.1-5
DISP 8227	Clinical Removable Prosthodontics	0.1-5
DISP 8231	Clinical Oral Diagnosis	0.1-5
DISP 8240	Clinical Pediatric Dentistry	0.1-5
DISP 8251	Clinical Orthodontics	0.1-5
DISP 8258	Diagnosis of Orofacial Lesions	0.5-10
DISP 8350	Orthodontics	0.1-10
Hours		1.8-75.3
Total Hours		1.8-75.3

Second Year

Fall		Hours
DISP 8117	Critical Appraisal of Translational Literature II	0.1-5
DISP 8207	Special Care Clinic C	0.1-5
DISP 8300	Case Presentation 5	0.1-5
DISP 8301	Comprehensive Patient Care Clinic E	0.1-5
DISP 8310	Advanced Implant Prosthodontics Seminar	0.1-5

DISP 8321	Clinical Endodontics	0.1-5
DISP 8323	Clinical Periodontics	0.1-5
DISP 8325	Clinical Fixed Prosthodontics	0.1-5
DISP 8326	Clinical Operative Dentistry	0.1-5
DISP 8327	Clinical Removable Prosthodontics	0.1-5
DISP 8328	Clinical Oral Radiology	0.1-5
DISP 8330	Clinical Oral Diagnosis	0.1-5
DISP 8355	Clinical Emergencies	0.1-5
Hours		1.3-65
Total Hours		1.3-65

Graduation from the University of Colorado School of Dental Medicine is contingent upon:

- Completion of all required courses with a minimum cumulative GPA of 2.30
- Fulfillment of all legal and financial obligations to the University
- Removal of probationary status if on academic probation. In the situation where a student is placed on academic probation at the end of his/her last semester of their program, the student is given the opportunity to rectify academic deficiency/deficiencies needed to remove the probationary status. This may be accomplished by performing additional coursework as dictated by course director(s) and as approved by the SPC to allow the granting of a higher grade in select courses as needed to remove the student from academic probation. This may result in a lengthening of their academic program and a delay in their graduation from the SDM
- Recommendation for the degree by vote of the Faculty (Competency Review Board) of the University of Colorado School of Dental Medicine

Student Learning Outcomes

Critical Thinking

- Evaluate and integrate emerging trends in health care
- Utilize critical thinking to evaluate and integrate best research outcomes with clinical expertise and patient values for evidence-based practice.

Professionalism

- Make professional decisions that satisfy legal, societal and ethical principles.
- Use self-evaluative skills to assess individual knowledge and abilities, to practice within the scope of one's competence and make appropriate professional referrals, and to identify areas of deficiency to correct through lifelong learning.
- Collaborate effectively with other health professionals to facilitate the provision of overall health care.

Communication and Interpersonal Skills

- Apply appropriate interpersonal and communication skills to create a humanistic environment.
- Communicate effectively with diverse patients and other health care providers to ensure appropriate, patient-centered patient treatment.

Health Promotion

- Provide prevention, intervention and educational strategies.
- Participate with dental team members and other health care professionals in the management and health promotion for all patients.
- Recognize and appreciate the need to contribute to the improvement of oral health beyond those served in traditional practice settings.

Practice Management and Informatics

- Evaluate and apply regulatory agency requirements for dental practices such as infection control, HIPAA and environmental and office safety programs
- Apply principles of risk management including informed consent
- Demonstrate effective business practices, financial management and human resource skills

Patient Care

Assessment, Diagnosis and Treatment Planning

- Perform an examination that collects biological, psychological, clinical, radiographic and other diagnostic/consultative information required to evaluate the health, oral conditions, needs, and expectations of patients of all ages.
- Recognize, diagnose and interpret normal and abnormal conditions of the orofacial complex (to include oral cancer), occlusal and temporomandibular disease, craniofacial growth and development that require monitoring, treatment or management.
- Develop, present and discuss individual sequenced treatment plans for patients of all ages consistent with patient's condition, interest, goals and capabilities.

Establishment and Maintenance of a Healthy Oral Environment

Management of Emergency Situations

- Anticipate, diagnose, and provide initial treatment and follow-up management for medical emergencies that may occur during dental treatment
- Recognize and manage dental emergencies to include acute pain, hemorrhage, trauma, and infection of the orofacial complex

Control of Pain and Anxiety

- Employ pharmacological agents and techniques to manage orofacial discomfort and psychological distress

Periodontal Therapy

- Diagnose, treatment plan, comprehensively treat, and maintain patients with periodontal disease in the primary, mixed, and permanent dentitions

Endodontic Therapy

- Diagnose and treat diseases of pulpal and periradicular origin in the primary, mixed, and permanent dentitions

Surgical and Non-Surgical Therapies

- Diagnose and treat conditions requiring reparative surgical procedures and non-surgical therapies on the hard and oral soft tissues

Restorative/Prosthodontic Therapy

- Provide single or multiple tooth restorations, with appropriate fixed or removable techniques, to restore anatomic form, function, and esthetics to patients of all ages.
- Continually analyze the outcomes of patient treatment to improve patient care.

Dental Medicine: Dual Degree (DDS/MPH)

The CU School of Dental Medicine and the Colorado School of Public Health have joined together to offer dental students the unique opportunity to earn their Doctor of Dental Surgery (DDS) and Masters of Public Health (MPH) degrees.

Additional information may also be viewed on the **Colorado School of Public Health's dual degree** page (p. 142).

Doctor of Dental Surgery (DDS)

Overview

For more than 50 years, CU Dental has been educating competent and compassionate dentists through quality educational experiences personalized for each of our successful graduates. Through combining classroom and clinical training, students master the skills required to deliver comprehensive dental care and become leaders in their field.

CU Dental students have learned to expect and enjoy the school hallmarks that make us unique, including:

- Rotating through our Advanced Clinical Training Service (ACTS) program (<https://dental.cuanschutz.edu/prospective-students/programs-of-study/doctor-of-dental-surgery/curriculum/acts-program/>) - a nationally recognized service-learning program allowing 4th year DDS students to provide dental services for 18 weeks in underserved communities in 30 clinics across the state of Colorado.
- Participating in campus-wide interprofessional education programs, including our national award-winning Frontier Center program, aims to increase collaboration across health disciplines and improve patient outcomes.
- Taking advantage of our research opportunities where dental students help address issues related to oral health and diseases, cancer research, biomaterials, bioengineering, and craniofacial biology.

Admissions

The CU School of Dental Medicine is committed to attracting highly qualified students from a variety of educational backgrounds and life experiences. We use a holistic review process when considering applicants, and look at a number of factors including academic credentials, test scores, letters of recommendation and an invitation only interview.

If you have any questions regarding admission requirements and procedures, please contact the Office of Admissions at 303-724-0271 or DDSadmissioninquiries@ucdenver.edu.

We encourage all interested individuals to apply by following the requirements below:

Prerequisite Requirements

The following courses (semester hours or equivalent quarter hours) are required to apply to the School of Dental Medicine. All coursework must be completed with a grade of C or better from an accredited U.S. college or university at the conclusion of the spring term of the year accepted. Grades of C- or lower and courses taken pass/fail or credit/no credit will not be accepted. No more than 60 semester hours are allowed from a community/junior college. Online coursework is accepted with pre-approval. High school advanced placement (AP) courses can be accepted for prerequisite course work, and will be evaluated on a case by case basis. Official documentation will be required to include AP scores. If you are an international student, please contact the admissions office directly.

- General Biology or General Zoology with Lab (8 semester hours or 12 quarter hours)
- General Chemistry with Lab (8 semester hours or 12 quarter hours)
- Organic Chemistry with Lab (8 semester hours or 12 quarter hours)
- General Physics with Lab, Algebra or Calculus based (8 semester hours or 12 quarter hours)
- Microbiology, Lab not required (3 semester hours or 5 quarter hours)
- General Biochemistry, Lab not required (3 semester hours or 5 quarter hours)
- English Composition (3 semester hours or 5 quarter hours)
- 90 semester hours with at least 30 hours of upper division credit

The minimum requirement for admission is 90 semester hours (or approximately 135 quarter hours) of academic coursework, but completing a bachelor's degree is strongly encouraged. Most applicants will have completed at least a bachelor's degree before matriculation to dental school.

Suggested Electives: Courses to consider include anatomy, cell biology, histology, immunology, physiology, business management/finance, psychology and communications. Courses may be in a single area with a general background in many areas, or may group together several related areas in the sciences or humanities.

Application Requirements

Applicants apply through the American Dental Education Association (ADEA) application service. **Applications may be filed beginning June 1 of the year preceding admission. The latest filing date is October 15.** While a rolling admissions process is utilized, which may extend acceptances through March of the admission cycle year, early application is strongly encouraged as acceptances are offered as early as December 1. Only completed applications are reviewed.

Please send the following directly to ADEA:

- Completed AADSAS application (<https://aadsas.liaisoncas.com/applicant-ux/#/login>) - available online at American Dental Education Association (ADEA)
- Official transcripts from all colleges, universities and professional schools you attended
- Letters of recommendation:
 - Two letters from science instructors AND one letter from a non-science instructor, dentist you shadowed or employer, **OR**
 - Pre-Dental Committee letter (must include two science instructors)

An \$90.00 application fee is due with the application. A separate e-mail will be sent out with instructions on how to submit payment.

Supplemental application materials are required **only upon request**.

Dental Admission Test (DAT)

Applicants are required to complete the Dental Admissions Test (DAT), which is administered by the American Dental Association (ADA). Official DAT scores must be sent to AADSAS (see instructions for sending DAT scores under Standardized Tests) (https://www.adea.org/GoDental/ADEA_AADSAS_Application/Academic_history.aspx#sthashMWm82LFdpbs).

While there is no minimum or cutoff, DAT scores close to the averages of the most recent entering class are considered competitive. See Class Profile for the most current scores.

The DAT should either be taken before application or in June/July of the application year. Scores must be received **before** the application deadline of October 15th. In order to meet this deadline, tests should not be taken after August 31st of the application year.

Retake tests: If planning to retake the DAT during the application cycle, an applicant should report future test dates on the AADSAS application.

Canadian DAT: Please note that the Canadian Dental Admissions Test (CDAT) is not accepted. The US DAT is required of all applicants.

Dental Shadowing Requirements

Applicants should demonstrate a confirmed interest in dentistry by participating in dental-related activities, including direct shadowing of a dentist in a patient-care setting. Shadowing hours should be reported directly on the AADSAS application. No further documentation is required.

50 hours of dental shadowing is required and must be completed at the time of application submission. Applicants without this minimum number of hours will not be reviewed or considered for interview.

Extracurricular Activities

Applicants should report any extracurricular activities in which they are involved, dental-related or otherwise, on the AADSAS application. Such activities could include (but are not limited to) academic enrichment programs, athletics, clubs and organizations, research, volunteering, and work experience.

For each extracurricular, applicants must provide the frequency and duration of the experience, a description of the key responsibilities, and the name and address of the organization or supervisor.

Letters of Recommendation

The University of Colorado School of Dental Medicine requires a total of three letters of recommendation, although AADSAS allows up to four. Letters must be uploaded directly to the application by the evaluators. **Letters sent directly to the Office of Admissions are no longer accepted.** Of the four allotted AADSAS uploads, applicants must have:

- **Two science letters** - Two letters must be written by science professors who have taught and graded the applicant at the university level. Letters should be from basic science instructors (biology, chemistry, physics, biochemistry, microbiology). Science letters should include the course name and number.
- **One letter of choice** - One letter by an evaluator of the applicant's choice is also required. This evaluator could be a dentist, another professor (science or non-science), an employer, a mentor, or another individual who can write in support of the applicant.

A fourth letter of recommendation will also be accepted but is not required. This optional fourth letter can be written by another evaluator of the applicant's choice.

- **Committee letter option:** If the applicant's undergraduate institution has a pre-health committee, a letter or letter packet composed by the committee members can be submitted in place of the above three letters. AADSAS also allows one individual letter to be uploaded in addition to the committee letter, which is accepted but not required.

Interview

Once the completed application has been reviewed by the Office of Admissions, the applicant may be invited to campus for a formal interview and tour of our school.

Application Fee

Applicants are required to pay an \$90 supplemental application fee directly to the University of Colorado School of Dental Medicine. This fee is separate from any payments made to AADSAS and can only be made online via credit or debit card.

Checks, money orders, and payments over the phone are not accepted. This payment should be made either just before or at the time of application submission.

AADSAS Fee Assistance Program: The \$90 nonrefundable application fee can be waived for applicants who qualify for the AADSAS Fee Assistance Program (https://help.liaisonedu.com/ADEA_AADSAS_Applicant_Help_Center/Starting_Your_ADEA_AADSAS_Application/Getting_Started_with_Your_ADEA_AADSAS_Application/03_Application_Fees_and_Fee_Assistance_Program/#sthashNpuoJ2fVdpbs). Such applicants should forward their approval email from AADSAS to our office at DDSadmissioninquiries@ucdenver.edu.

Curriculum

Year 1

First-year courses focus on the basic sciences and the integration of this knowledge with the practice of dentistry. These include a human body systems course series that integrates the anatomy, physiology and microanatomy of each major body system with clinical correlations. Other basic science courses include molecular biosciences, embryology, craniofacial biology, oral histology, microbiology, immunology, and pathology. Additionally, students are introduced to dental care in courses related to dental anatomy, occlusion, oral radiology, periodontology, dental materials, and an innovative Introduction to Clinical Dentistry course series that prepares and provides students with patient care activities. Finally, students begin to develop their hand skills by taking simulation lab courses in both direct and indirect restorative procedures.

Year 1		Hours
Fall		
DSBS 5502	Microanatomy	0.1-5
DSBS 5504	Human Anatomy	0.1-10
DSBS 5507	Molecular Biosciences	0.1-5
DSBS 5508	Physiology	0.1-5
DSCD 5501	Community Public Health 1	0.1-5
DSRE 5001	Introduction to Dentistry	0.1-5
DSRE 5500	Dental Anatomy	0.1-5
DSRE 5501	Dental Anatomy Laboratory	0.1-5
DSRE 5504	Dental Materials Science I	0.1-5
DSRE 5520	Introduction to Clinical Dentistry 1	0.1-5
DSSD 5501	Clinical Correlations	0.1-5
Hours		1.0999999999999999-60
Total Hours		1.0999999999999999-60

Year 1		Hours
Spring		
DSBS 5500	Embryology and Craniofacial Biology	0.1-5
DSBS 5506	Oral Histology	0.1-5
DSBS 5511	Invaders and Protectors	0.1-5
DSOD 5502	Oral Radiology	0.1-5
DSOD 5503	Oral Radiology Laboratory	0.1-5
DSOP 5504	Principles of Operative Dentistry Direct Restoration I	0.1-5
DSOP 5505	Principles of Operative Dentistry - Direct Restoration 1 Lab	0.1-5
DSRE 5521	Introduction to Clinical Dentistry 2	0.1-5
IPCP 5000	Interprofessional Collaborative Practice	1
Hours		1.7999999999999998-41
Total Hours		1.7999999999999998-41

Year 1

Summer		Hours
DSBS 5516	Pathology	0.1-5
DSCD 5502	Nutrition	0.1-5
DSOD 5500	Assessment of the Dental Patient	0.1-0.7
DSOP 5506	Principles of Operative Dentistry - Direct Restorations 2	0.1-5
DSCD 5504	Communication & Person-Centered Care	0.1-5
DSCD 5505	Dental Ethics and Professionalism	0.1-5
DSOD 5500	Assessment of the Dental Patient	0.1-0.7
DSOP 5506	Principles of Operative Dentistry - Direct Restorations 2	0.1-5
DSOP 5507	Principles of Operative Dentistry - Direct Restorations 2 Lab	0.1-5
DSPE 5500	Periodontics 1	0.1-5
DSRE 5503	Dental Materials 2	0.1-5
DSRE 5508	Indirect Single Tooth Restoration 1	0.1-5
DSRE 5522	Introduction to Clinical Dentistry 3	0.1-5
Hours		1.3-56.4
Total Hours		1.3-56.4

Year 2

The primary focus of second year courses is to guide students in the transition from pre-clinical courses to clinical care and begin to see their first patients for periodontal appointments during the fall of their second year. Students refine their hand skills in pre-clinical lab courses involving indirect restorative procedures, fixed and removable prosthodontics, endodontics and esthetic dentistry. Clinical care is emphasized in courses related to pharmacology, occlusion, oral pathology, orthodontics, periodontics, endodontics, dental materials, oral radiology, cariology, pediatric dentistry, pain control, medical emergencies and oral and maxillofacial surgery. Students will also take courses on treatment planning and managing a student practice in order to begin providing comprehensive patient care in the student dental clinic during the summer of their second year. The primary focus of third year is the development and practice of clinical dentistry. Students take courses on community assessment, public health, dental practice planning, clinical oncology, behavioral and geriatric dentistry, implant dentistry and treatment planning. Students begin to spend a lot more time in the clinical setting with the primary focus being on comprehensive patient care. Students perform clinical procedures in the fields of oral diagnosis and diagnostic radiology, periodontics, operative dentistry, fixed and removable prosthodontics, orthodontics, endodontics, dental pain and emergencies. Additionally, all students participate in a rotation in pediatric dentistry at the Healthy Smiles Clinic at Children's Hospital Colorado (<https://www.childrenscolorado.org/doctors-and-departments/departments/dental/>).

Year 2

Fall		Hours
DSBS 6600	Fundamentals of Pharmacology	0.1-10
DSBS 6604	Advanced Head and Neck Anatomy	0.1-5
DSCD 6601	Community Public Health 2	0.1-5
DSCD 6622	Managing Your Dental Student Practice 1	0.1-5
DSOD 6610	Oral Pathology 1	0.1-5
DSOT 6610	Orthodontics 1	0.1-5
DSPE 6601	Periodontology 2	0.1-10
DSPE 6605	Periodontology 2 Laboratory - Section 1	0.1-5
DSRE 6600	Transition Clinic 1	0.1-5
DSRE 6606	Indirect Single Tooth Restoration 2	0.1-5
DSRE 6607	Indirect Single Tooth Restoration 2 Laboratory	0.1-5
DSRE 6645	Cariology	0.1-5
DSRP 6600	Combined Removable Prosthodontics	0.1-5
DSRP 6601	Combined Removable Prosthodontics Laboratory	0.1-5
IPHE 6000	IPE Healthcare Ethics & Health Equity	1
Hours		2.4000000000000004-81
Spring		
DSBS 6603	Applied Clinical Pharmacology	0.5-10
DSCD 6623	Managing Your Dental Student Practice 2	0.1-5
DSOD 6610	Endodontics 1 Lecture	0.1-5

DSEN 6611	Endodontics 1 Laboratory	0.1-5
DSFD 6610	Fixed Prosthodontics	0.1-5
DSFD 6611	Fixed Prosthodontics Laboratory	0.1-5
DSON 6612	Oral Pathology 2	0.1-5
DSOP 6600	Pre-Clinical Operative Dentistry Workshop	0.1-5
DSPD 6620	Pediatric Dentistry 1	0.1-5
DSPE 6606	Periodontology 3 Laboratory	0.1-5
DSPE 6607	Periodontology 3	0.5-10
DSRE 6601	Transition Clinic 2	0.1-5
DSRE 6609	Treatment Planning	0.1-5
DSRE 6610	Clinical Dental Materials	0.1-5
DSSD 6600	Clinical Dental Pharmacology	0.1-5
DSRE 6617	Occlusion Lecture	0.5-10
DSRE 6618	Occlusion Lab	0.5-10
DSSD 6600	Clinical Dental Pharmacology	0.1-5
DSSD 6604	Pain Control 1 (Local Anesthesia)	0.1-5
DSSD 6608	Prevention and Management of Medical Emergencies	0.1-5
DSSD 6612	Orofacial Pain	0.1-5
Hours		3.700000000000006-125
Summer		
DSEN 6612	Endodontics 2 Lecture	0.1-5
DSEN 6613	Endodontics 2 Laboratory	0.1-5
DSFD 6031	Clinical Fixed Prosthodontics 1	0.1-5
DSOD 6031	Clinical Oral Diagnosis 1	0.1-5
DSOP 6031	Clinical Operative Dentistry 1	0.1-5
DSOP 6610	Seminars in Restorative Dentistry	0.1-5
DSOS 6031	Oral and Maxillofacial Surgery 1	0.1-5
DSPD 6630	Pediatric Dentistry 2	0.1-5
DSPE 6031	Clinical Periodontics 1	0.1-5
DSPE 6610	Periodontology 4	0.1-5
DSRE 6602	Transition Clinic 3	0.1-5
DSRE 6604	Esthetic Dentistry	0.1-5
DSRE 6615	Comprehensive Patient Care Clinic A	0.1-5
DSRP 6031	Clinical Removable Prosthodontics 1	0.1-5
DSSD 6610	Pain Control 2 (Nitrous Oxide Analgesia)	0.1-5
Hours		1.500000000000002-75
Total Hours		7.600000000000001-281

Year 3

The primary focus of third year is the development and practice of clinical dentistry. Students take courses on community assessment, public health, dental practice planning, clinical oncology, behavioral and geriatric dentistry, implant dentistry and treatment planning. Students begin to spend a lot more time in the clinical setting with the primary focus being on comprehensive patient care. Students perform clinical procedures in the fields of oral diagnosis and diagnostic radiology, periodontics, operative dentistry, fixed and removable prosthodontics, orthodontics, endodontics, dental pain and emergencies. Additionally, all students participate in a rotation in pediatric dentistry at the Healthy Smiles Clinic at Children's Hospital Colorado (<https://www.childrenscolorado.org/doctors-and-departments/departments/dental/>).

Year 3

Fall		Hours
DSCD 7702	Integration for Patient Care 1	0.1-10
DSCD 7705	Clinical Transformations: Interprofessional Education	0.1-5
DSCD 7710	Behavioral Health Sciences	0.1-5
DSCD 7711	Gerontology & Geriatric Health Care	0.1-5
DSCD 7730	Adult Special Health Care Need Dentistry	0.1-5

DSDD 7703	Medically Complex Dental Care	.1-10
DSEN 7011	Clinical Endodontics 1	0.1-5
DSFD 7011	Clinical Fixed Prosthodontics 2	0.1-5
DSOD 7011	Clinical Oral Diagnosis 2	0.1-5
DSOP 7011	Clinical Operative Dentistry 2	0.1-5
DSOS 7011	Oral and Maxillofacial Surgery 2	0.1-5
DSPD 7011	Clinical Pediatric Dentistry 1	0.1-5
DSPD 7700	Pediatric Dentistry 3	0.1-5
DSPE 7011	Clinical Periodontics 2	0.1-5
DSRE 7712	Implant Dentistry	0.1-5
DSRE 7717	Comprehensive Patient Care Clinic B	0.1-5
DSRE 7718	Critical Thinking and Patient Care Seminar	0.1-5
DSRE 7935	Treatment Planning and Case Presentation I	0.1-5
DSRP 7011	Clinical Removable Prosthodontics 2	0.1-5
DSSD 7712	Dental Pain and Emergencies	0.1-5

Hours 2.0000000000000004-110

Spring

DSCD 7703	Integration for Patient Care 2	0.1-10
DSCD 7706	Clinical Transformations: Interprofessional Education	1-5
DSCD 7709	Community Public Health 3	0.1-5
DSCD 7713	INBDE Preperation Course 1	0.1-10
DSCD 7726	Dental Practice Planning	0.1-5
DSCD 7796	Special Care Clinic A	0.1-5
DSEN 7022	Clinical Endodontics 2	0.1-5
DSEN 7712	Endodontics III	0.1-5
DSFD 7022	Clinical Fixed Prosthodontics 3	0.1-5
DSOD 7022	Clinical Oral Diagnosis 3	0.1-5
DSOD 7715	Diagnosis of Orofacial Lesions	0.1-5
DSOD 7724	Diagnostic Radiology	0.1-5
DSOD 7755	Clinical Oncology	0.1-5
DSOP 7022	Clinical Operative Dentistry 3	0.1-5
DSOT 7021	Clinical Orthodontics 1	0.1-5
DSOT 7720	Orthodontics 2	0.1-5
DSPD 7022	Clinical Pediatric Dentistry 2	0.1-5
DSPE 7022	Clinical Periodontics 3	0.1-5
DSRE 7706	Critical Appraisal of Translational Literature	0.1-5
DSRE 7711	Advanced and Digital Prosthodontics	0.1-5
DSRE 7719	Comprehensive Patient Care Clinic C	0.1-5
DSRE 7936	Treatment Planning and Case Presentation 2	0.1-5
DSRP 7022	Clinical Removable Prosthodontics 3	0.1-5

Hours 3.2000000000000002-125

Summer

DSCD 7791	Community-Based Clinical Dentistry 1 (ACTS)	0.1-5
DSCD 7797	Special Care Clinic B	0.1-5
DSEN 7033	Clinical Endodontics 3	0.1-5
DSFD 7033	Clinical Fixed Prosthodontics 4	0.1-5
DSOD 7033	Clinical Oral Diagnosis 4	0.1-5
DSOP 7033	Clinical Operative Dentistry 4	0.1-5
DSPD 7033	Clinical Pediatric Dentistry 3	0.1-5
DSPE 7033	Clinical Periodontics 4	0.1-5
DSRE 7721	Comprehensive Patient Care Clinic D	0.1-5

DSRP 7033	Clinical Removable Prosthodontics 4	0.1-5
	Hours	0.9999999999999999-50
	Total Hours	6.200000000000003-285

Year 4

At the beginning of their fourth year, students take the National Board Dental Examination Part II which tests their clinical knowledge of endodontics, operative dentistry, oral and maxillofacial surgery, pain control, oral diagnosis, orthodontics, pediatric dentistry, patient management, periodontics, pharmacology and prosthodontics. Students continue to develop their clinical and practical dental skills by providing comprehensive patient care in the dental clinic. Advanced courses in implant dentistry, restorative dentistry, treatment planning, cariology, dental ethics and jurisprudence, endodontics and forensic dentistry are taken to further prepare students to become licensed dental professionals. All students also participate in the Advanced Clinical Training and Service (ACTS) program (<https://dental.cuanschutz.edu/prospective-students/programs-of-study/doctor-of-dental-surgery/curriculum/acts-program/>) and provide quality dental care to underserved communities in 30 clinics across the state. At the end of spring of their fourth year, students are fully prepared to take regional or state examinations to obtain dental licensure.

Year 4		
Fall		Hours
DSCD 8892	Community-Based Clinical Dentistry 2 (ACTS)	0.1-10
DSCD 8896	Special Care Clinic C	0.1-5
DSEN 8011	Clinical Endodontics 4	0.1-5
DSFD 8011	Clinical Fixed Prosthodontics 5	0.1-5
DSFD 8861	Advanced Implant Prosthodontic Seminar	0.1-5
DSOD 8010	Clinical Oral Radiology	0.1-5
DSOD 8011	Clinical Oral Diagnosis 5	0.1-5
DSOP 8011	Clinical Operative Dentistry 5	0.1-5
DSOS 8011	Clinical Oral Maxillofacial Surgery 1	0.1-5
DSPE 8011	Clinical Periodontics 5	0.1-5
DSRE 8806	Critical Appraisal of Translational Literature II	0.1-5
DSRE 8817	Comprehensive Patient Care Clinic E	0.1-5
DSRE 8945	Treatment Planning and Case Presentation	0.1-5
DSRP 8011	Clinical Removable Prosthodontics 5	0.1-5
DSSD 8011	Clinical Emergencies 1	0.1-5
	Hours	1.5000000000000002-80
Spring		
DSCD 8812	Dental Ethics and Jurisprudence	0.1-5
DSCD 8822	Dental Practice Management & Leadership	0.1-5
DSCD 8893	Community-Based Clinical Dentistry 3 (ACTS)	0.1-10
DSEN 8022	Clinical Endodontics 5	0.1-5
DSFD 8022	Clinical Fixed Prosthodontics 6	0.1-5
DSOD 8022	Clinical Oral Diagnosis 6	0.1-5
DSOP 8022	Clinical Operative Dentistry 6	0.1-5
DSPE 8022	Clinical Periodontics 6	0.1-5
DSRE 8827	Comprehensive Patient Care Clinic F	0.1-13
DSRE 8946	Treatment Planning and Case Presentation 4	0.1-5
DSRP 8022	Clinical Removable Prosthodontics 6	0.1-5
	Hours	1.0999999999999999-68
	Total Hours	2.6-148

Rural Oral Health Track

The Rural Oral Health Dental Track was established in 2023 in response to the State of Colorado's authorization developing the Colorado Rural Healthcare Workforce Initiative with the passage of Senate Bill 22 – 172 (<https://leg.colorado.gov/bills/sb22-172/>).

This track is a 4-year elective program for pre-doctoral dental students designed to help better prepare graduating dental students for a successful dental practice in rural and frontier communities. Elements of this elective program include rural-focused oral health training, interprofessional education, rural mentoring, and concentrated community-based service earning in rural communities.

Classroom related education reflects a mix of in-person seminars, faculty-led synchronous sessions, and asynchronous learning modules. This track is comprised of 4 elective courses, with each course taken during a student's academic year of study. Total contact hours for these 4 elective courses are 56 hours.

Additionally, students will spend approximately 15 weeks in rural Colorado dental clinics as part of their Advanced Clinical Training and Service (ACTS) program requirement. Upon completion of the program, a graduating dental student will receive recognition for completing the Rural Health Dental Track including official designation in their University transcript.

Curriculum

Code	Title	Hours
Take the following courses:		
DSEL 9116	Rural Oral Health Practice 1	0.5-10
DSEL 9117	Rural Oral Health Practice 2	0.5-10
DSEL 9118	Rural Oral Health Practice 3	0.5-10
DSEL 9119	Rural Oral Health Practice 4	0.5-10
Total Hours		2-40

Graduation from the University of Colorado School of Dental Medicine is contingent upon:

- Completion of all required courses with a minimum cumulative GPA of 2.30
- Fulfillment of all legal and financial obligations to the University
- Challenge the Integrated National Board Dental Examination
- Removal of probationary status if on academic probation. In the situation where a student is placed on academic probation at the end of his/her last semester of their program, the student is given the opportunity to rectify academic deficiency/deficiencies needed to remove the probationary status. This may be accomplished by performing additional coursework as dictated by course director(s) and as approved by the SPC to allow the granting of a higher grade in select courses as needed to remove the student from academic probation. This may result in a lengthening of their academic program and a delay in their graduation from the SDM
- Recommendation for the degree by vote of the Faculty (Competency Review Board) of the University of Colorado School of Dental Medicine

The MHA Pathway to Dentistry Program ("Pathway Program") provides academic and professional preparation and a pathway to the University of Colorado School of Dental Medicine's (SDM) Doctor of Dental Surgery (DDS) program through the M.S. in Modern Human Anatomy.

Students admitted to the Pathway Program will complete the first-year curriculum of the Modern Human Anatomy program, begin work on the MHA Capstone Project, then transition into the Doctor of Dental Surgery curriculum in the Fall of their 2nd year. Students admitted to the Pathway Program will receive a **reserved seat** in the DDS program. While completing the 4-year Doctor in Dental Surgery requirements, the students will complete the MS-MHA Capstone Project and Teaching Practicum, to graduate with both the M.S. and the D.D.S. degrees.

The goal of the Pathway Program is to increase workforce diversity in dental medicine and provide clarity and support in the pathway to pursuing dental medicine as a career. The Pathway to Dentistry MHA Program will provide academic and clinical preparation, mentorship, and a pathway for success for traditionally underrepresented students in dental school through the M.S. in Modern Human Anatomy curriculum.

- MHA Pathway students can expect:
 - A full year of graduate level science course work through the Modern Human Anatomy program at the University of Colorado Anschutz Medical Campus.
 - A hand skills development workshop
 - Access to the admissions and student affairs staff to help prepare for their interview
 - Mentorship from MHA and DDS faculty

Determine program eligibility by reviewing the comprehensive eligibility and prerequisite requirements. (<https://nam02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fmedschool.cuanschutz.edu%2Fms-modern-human-anatomy%2Fcurriculum%2Fmha-pathway-to-dentistry-program%23ac-eligibility-for-pathways-program-0&data=05%7C02%7CSALINA.EVANS%40CUANSCHUTZ.EDU%7C08eb6bbeab934cd8521008dd1557a98c%7C563337caa517421aaae01aa5b414fd7f%7C0%7C0%7C638690188449217607%7CUnknown%7CTWFPbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOilwLjAuMDAwMCIslIAiOiJXaW4zMilslkFOljoITWFPbClslldUljoyfQ%3D%3D%7C0%7C%7C%7C&sdata=%2FqTIT8k4d%2Bv%2BPER6LoYW1CP1PvmjOGMS%2BeFnGmb8Jn4%3D&reserved=0>)

If you have any questions regarding admission requirements and procedures, please contact the Office of Admissions at 303-724-8719 or DDSadmissioninquiries@ucdenver.edu.

Student Learning Outcomes

Critical Thinking

- Evaluate and integrate emerging trends in health care
- Utilize critical thinking to evaluate and integrate best research outcomes with clinical expertise and patient values for evidence-based practice.

Professionalism

- Make professional decisions that satisfy legal, societal and ethical principles.
- Use self-evaluative skills to assess individual knowledge and abilities, to practice within the scope of one's competence and make appropriate professional referrals, and to identify areas of deficiency to correct through lifelong learning.
- Collaborate effectively with other health professionals to facilitate the provision of overall health care.

Communication and Interpersonal Skills

- Apply appropriate interpersonal and communication skills to create a humanistic environment.
- Communicate effectively with diverse patients and other health care providers to ensure appropriate, patient-centered patient treatment.

Health Promotion

- Provide prevention, intervention and educational strategies.
- Participate with dental team members and other health care professionals in the management and health promotion for all patients.
- Recognize and appreciate the need to contribute to the improvement of oral health beyond those served in traditional practice settings.

Practice Management and Informatics

- Evaluate and apply regulatory agency requirements for dental practices such as infection control, HIPAA and environmental and office safety programs
- Apply principles of risk management including informed consent
- Demonstrate effective business practices, financial management and human resource skills

Patient Care

Assessment, Diagnosis and Treatment Planning

- Perform an examination that collects biological, psychological, clinical, radiographic and other diagnostic/consultative information required to evaluate the health, oral conditions, needs, and expectations of patients of all ages.
- Recognize, diagnose and interpret normal and abnormal conditions of the orofacial complex (to include oral cancer), occlusal and temporomandibular disease, craniofacial growth and development that require monitoring, treatment or management.
- Develop, present and discuss individual sequenced treatment plans for patients of all ages consistent with patient's condition, interest, goals and capabilities.

Establishment and Maintenance of a Healthy Oral Environment

Management of Emergency Situations

- Anticipate, diagnose, and provide initial treatment and follow-up management for medical emergencies that may occur during dental treatment
- Recognize and manage dental emergencies to include acute pain, hemorrhage, trauma, and infection of the orofacial complex

Control of Pain and Anxiety

- Employ pharmacological agents and techniques to manage orofacial discomfort and psychological distress

Periodontal Therapy

- Diagnose, treatment plan, comprehensively treat, and maintain patients with periodontal disease in the primary, mixed, and permanent dentitions

Endodontic Therapy

- Diagnose and treat diseases of pulpal and periradicular origin in the primary, mixed, and permanent dentitions

Surgical and Non-Surgical Therapies

- Diagnose and treat conditions requiring reparative surgical procedures and non-surgical therapies on the hard and oral soft tissues

Restorative/Prosthodontic Therapy

- Provide single or multiple tooth restorations, with appropriate fixed or removable techniques, to restore anatomic form, function, and esthetics to patients of all ages.
- Continually analyze the outcomes of patient treatment to improve patient care.

General Practice Residency in Dental Medicine

Overview

The General Practice Residency (GPR) program at the CU School of Dental Medicine is an intensive 12-month postgraduate program dedicated to enhancing a resident's experience and confidence with providing care to the general public and to medically complex and special needs patients in both an outpatient and hospital setting.

Admissions

The General Practice Residency (GPR) program accepts six first-year residents each year, with an optional second year position. It seeks ambitious students from all backgrounds and life experiences. We use a holistic review process when considering applicants by reviewing several factors, including academic credentials, national board scores, experience, community engagement, letters of recommendation, and an invitation-only interview. We encourage those interested in applying by using the following guidelines.

Prerequisite Requirements

- **MUST** be a graduate of a CODA-accredited dental school in the United States or Canada
- **MUST** pass the National Board Dental Examinations (NBDE) Part I to apply. Part II must be completed prior to enrollment into the program.

Application Requirements

All applicants must apply electronically through ADEA PASS (<https://pass.liaisoncas.com/applicant-ux/#/login>). Our program is the University of Colorado School of Dental Medicine GPR515. Through this application process, we will obtain all the information needed to decide to offer an interview. We do participate in the Match to determine our incoming class.

The application deadline is October 1 to be considered for the following July class.

Rotations

General Practice Residency (GPR) rotations are spent at various locations on the CU

Anschutz Medical Campus and in the community. Rotations cover a broad spectrum of dental specialties, and residents perform complex dental procedures in endodontics, periodontics, oral surgery, and fixed, removable, and implant prosthodontics.

Anesthesia Rotation

Objectives

Upon completion of this rotation, residents will:

- Participate in the management of acute medical emergencies such as airway obstruction, blood pressure changes, respiratory depression, and arrest.
- Be familiar with nasal and oral intubations and the indications for each.
- Be able to manage airways in patients by utilizing nasal airways.
- Be able to place intravenous catheters for fluid infusion.
- Be able to evaluate a patient's physical status and relate that to the procedures employed in sedation and general anesthesia.

- Understand the basic pharmacology of commonly used sedative and general anesthetic agents.

Content

During this two-week rotation, general practice residents actively participate in the care of surgery patients via assignment to the Department of Anesthesiology of the University of Colorado School of Medicine. While on anesthesia rotation, clinical instruction is provided by the attending and resident staff of the Anesthesia Department of University Hospital.

Residents will receive experience in:

- Starting and maintaining intravenous lines
- Oral and nasal intubation
- Anesthetic induction/administration of anesthetic agents
- Monitoring vital signs on sedated and general anesthetic patients
- Maintaining an optimum airway during anesthetic procedures
- Utilizing various equipment/instrumentation for monitoring the anesthetized patient
- Procedures and protocols for assisting and monitoring the patient during recovery
- In addition to this clinical training, residents are required to attend all seminars, lectures, etc., sponsored by the anesthesia service.

Emergency Medicine Rotation

Objectives

Upon completion this rotation, residents will gain:

- An introduction to basic emergency medicine
- Exposure to assessment and triage of patients
- Exposure to management of medical emergencies
- Experience in physical assessment and treatment of various patients (e.g. suturing lacerations)
- Experience in obtaining and interpreting the patient's chief complaint, medical and social history and review of systems
- Experience in obtaining and interpreting clinical and other diagnostic data from other health care providers
- Experience using the services of clinical, medical and pathological laboratories
- Experience performing two history and physical evaluations and collecting data in order to establish a medical assessment
- Experience in selection and administration of medications for emergency medical treatment, especially pain and infection
- Exposure to the medical care of an economically underserved urban and rural population of patients
- Experience in placing IV lines for fluid and sedation

Content

During this one-week Emergency Medicine rotation, general practice residents will actively participate under the supervision of faculty and chief residents in the care of patients with the University of Colorado Hospital Emergency Department. The University Hospital serves as a primary care provider for indigent and medically underserved population of patients. The state-of-art Emergency Department (ED) serves as a major urban Level I trauma center, thus residents are exposed to a wide variety of urgent and emergent medical situations.

During their ED time, residents are encouraged to attend all seminars and lectures sponsored by the Department of Emergency Medicine while they

are on rotation. Residents will get education sessions with attending and be assigned to their own patients.

It is required that two full H&P's be completed in EPIC under H&P dentistry. These are to be cosigned by the attending in EPIC and the MR# provided to the GPR director. Completion of the two full H&P's *and* daily evaluations from the attendings you are working with will be considered the evaluation mechanism.

Medicine Rotation

Objectives

Upon completion of this rotation, residents will gain:

- Be able to perform and feel comfortable History and Physicals and Review of Symptoms for patients who are going to undergo deep intravenous sedation or general anesthesia in the operating room
- Be familiar with and participate with Oral and Maxillofacial Surgery procedures under deep intravenous sedation
- Be able to manage airways in patients by utilizing nasal airways and oral airways
- Be able to place intravenous catheters for fluid infusion
- Be able to evaluate a medically complex patient's physical status and relate that to the safety of the proposed procedures and where they should be treated safely
- Understand and learn how to utilize OMFS procedures

Content

During this one-week rotation, general practice residents actively participate in the care of surgery patients via assignment to the Oral and Maxillofacial Surgery Department the University of Colorado School of Dental Medicine. While on the OMFS rotation, clinical instruction is provided by the attending and resident staff of the OMFS Department at the University Of Colorado School Of Dental Medicine.

Residents will receive experience in:

- Performing Histories and Physicals
- Pharmacology of the medications used in both deep sedation and General Anesthesia
- Monitoring vital signs and sedation recording on sedated and general anesthetic patients
- Experiencing a wide variety of OMFS procedures in clinic and operating room
- Rounding on OMFS patients and taking call with the OMFS residents
- Procedures and protocols for assisting and monitoring the patient during recovery

In addition to this clinical training, residents are required to attend all seminars, lectures, etc., sponsored by the OMFS service.

Care Clinic

Objectives

Upon completion of this rotation, residents will:

- Interact with various medical departments of the University Hospital by providing consultative and treatment services for hospitalized patients including dental care for kidney, heart, lung and bone marrow transplant patients.
- Answer acute dental emergency calls to the Emergency Medicine department at UCH

- Provide dental clearances for transplant patients, cancer patients prior to chemotherapy and head and neck cancer patients
- Request referrals, based on the medical and dental complexity of the patient's needs
- Provide general dental treatment at a level beyond that achieved in dental school including advanced restorative, prosthodontic, periodontal, endodontic, osseous implants and oral surgical procedures
- Act as primary care provider by formulating and executing a comprehensive treatment plan for a wide range of medically complex ambulatory patients
- Incorporate a preventive program into each treatment plan and into the total care of each patient
- Diagnose and treat dental emergencies and provide immediate, palliative treatment for pain and infection
- Follow recognized infection control guidelines while providing treatment for patients with chronic infectious diseases
- Understand various aspects of practice management such as appointment scheduling, efficient utilization of auxiliaries, patient and staff rapport, effective time management, impact of financial considerations on treatment planning and risk management. Understand fundamentals of associateship contracts
- Complete laboratory work for your patients, write dental laboratory prescriptions, interact with commercial dental labs and evaluate the quality of the work provided by such labs
- Participate in the oral health needs of the local and/or state communities

Content

Residents are based at Advanced Care Clinic for approximately 10 months. The majority of time is spent in hands-on patient treatment so residents gain a wide variety of experience by providing more complex dental treatment on the medically complex, ambulatory patient.

The concept of comprehensive care is stressed, with an emphasis on the "whole" patient (medical, financial and social status, patient motivation and desires). Patient needs are assessed and taken into consideration when formulating the treatment plan and performing treatment.

Residents are assigned to Oral surgery rotation, within the Advanced Care Dental Clinic, once every 6 weeks. At this time you will be assigned only oral surgery cases. You will work closely with our OMFS attending to perform procedures like full mouth extraction cases, alveoloplasty, extractions and bone grafts, biopsy, and surgical extractions of third molars, on patients of the pre-doctoral program.

Our On Call schedule is one week on every 6 weeks. We encourage a buddy system, with one resident being first Call and the other resident being second Call. This way, you always have a second pair of hands for the difficult cases and you learn twice as much!

Techniques of efficient time management are stressed to prepare residents for the transition from dental school to private practice. Residents also learn how to use a dental assistant's and hygienist's time appropriately, to be more efficient. Residents are encouraged to utilize a wide variety of materials and techniques, both analog and digital, with a focus on those not commonly taught in dental school. Although direct faculty supervision is always present, residents are encouraged to use their own judgment in making patient care decisions.

Didactic classes are held from 7:45 - 8:45 a.m. daily, with time after to have group huddles to evaluate the patient's medical history and

treatment plan and to clarify ongoing care before the clinic begins at 9:00 a.m.

Residents receive:

- Daily feedback from faculty
- Quarterly evaluations by covering faculty
- Formal evaluations by the Program Director three times a year

Goals & Objectives

With oral health and systemic health so vitally connected, the GPR program provides whole person, hands-on learning opportunities to create top graduates ready to improve lives. With this in mind, the program goals and objectives include:

Program Goals

- Prepare residents for careers in primary care dentistry
- Implement a didactic and clinical educational program of excellence for residents
- Prepare residents to provide advanced levels of patient care
- Prepare residents to perform community service in areas of need
- Prepare residents to provide oral health care in a hospital setting

Overall Objectives

- Train residents to be skilled in patient evaluation, laboratory diagnosis, medical history and suitable physical assessment.
- Provide each resident with a variety of patients with challenging histories in order to gain practical experience in the above skills.
- Enhance residents' oral diagnostic and treatment-planning skills to meet the comprehensive dental needs of the patient.
- Provide didactic and clinical experiences that train the resident to provide quality comprehensive dental care utilizing current and innovative technology and theory, regardless of the patient's medical, mental, emotional or physical compromise.
- Instill a sense of how hospital dentists can serve the community, especially the underserved and low-socioeconomic patient populations.
- Educate residents to competently select and apply appropriate means of pain and anxiety control, including inhalation, oral, and intravenous techniques.
- Teach hospital and operating room protocol so residents may easily admit a patient, perform a history and physical examination, order and assess laboratory tests, consult with other medical specialists, administer pre- and post-operative care and perform treatment in an operating room setting.
- Provide intensive education in the recognition and management of medical emergencies in the dental setting.
- Ensure residents learn to diagnose and treat common dental emergencies and recognize when to refer more complex problems to the appropriate medical or dental specialists.
- Develop residents' knowledge, skill and confidence to participate in a multidisciplinary treatment team.
- Enhance residents' understanding of practice administration and supervision of auxiliary personnel.
- Develop residents' ability to retrieve, critically review and assess pertinent scientific literature.

Geriatric Dental Medicine (Certificate)

Overview

The Geriatric Dental Medicine Fellowship is a full-time 12-month graduate certificate program that utilizes a combination of didactic learning, clinical education and teaching, and community-based experiential learning. Training provides Fellows with a range of experiences across diverse populations and settings that includes the dental school's Senior and Special Care Clinic, CU Health Hospital and Senior Clinics, long-term care and senior residential communities, and with other community partners that provide oral health care to large numbers of older adults.

Fellows' learning experiences will focus on a holistic health approach that includes:

1. Advanced clinical geriatric dentistry;
2. Interprofessional geriatric patient assessment and care coordination;
3. Studies in gerontology with an emphasis on the physical, mental, and social aspects and implications of aging;
4. Dental public health considerations for vulnerable older adult populations;
5. Community outreach.

Admission Requirements

This training program will accept 1-2 applicants every year based upon available positions and funding support. The ideal applicant would be able to demonstrate:

1. A strong interest in special care dentistry;
2. A record of service activities and/or community health volunteerism;
3. Very good academic dental credentials;
4. A compelling personal essay;
5. Provide two excellent letters of recommendation.

Applicants should have a DDS or DMD degree from an accredited dental school in the United States or Canada prior to the start of the Fellowship. Individuals interested in this training program who have an international dental degree may be eligible to apply to the program and should contact the program office for additional information.

Interested applicants should contact Ms. Amy Schmidt (AMY.S.SCHMIDT@CUANSCHUTZ.EDU) to request an application package and instructions for submission of required materials.

Curriculum

Certificate Requirements

The Geriatric Dental Medicine Fellowship certificate equates to 22 graduate credit hours. Over the course of 12 months, Fellows' time is approximately allocated in the following areas:

- 75% in clinical-related sessions
- 25% in didactic, research, and teaching related activities.

Code	Title	Hours
DGER 8001	Advanced Clinical Geriatric Dentistry 1	0.5-5
DGER 8002	Advanced Clinical Geriatric Dentistry 2	0.5-5
DGER 8003	Advanced Clinical Geriatric Dentistry 3	0.5-5

DGER 8004	Advanced Clinical Geriatric Dentistry 4	0.5-5
DGER 8011	Critical Topics & Case Study in Gerontology and Geriatric Dentistry 1	0.5-5
DGER 8012	Critical Topics & Case Study in Gerontology and Geriatric Dentistry 2	0.5-5
DGER 8013	Critical Topics & Case Study in Gerontology and Geriatric Dentistry 3	0.5-5
DGER 8021	Interprofessional Collaboration and Care Coordination in Geriatrics 1	0.5-5
DGER 8022	Interprofessional Collaboration and Care Coordination in Geriatrics 2	0.5-5
DGER 8031	Geriatrics & Community Dentistry 1	0.5-5
DGER 8032	Geriatrics & Community Dentistry 2	0.5-5
DGER 8911	Fundamentals of Teaching and Learning	0.5-5
DGER 8912	Clinical Teaching and Learning	0.5-5
DGER 8913	Geriatric Dental Medicine Capstone	0.5-5

Certificate Requirements

Fellows must:

1. Successfully complete all required courses;
2. Attend community-based learning activities, seminars, and clinical sessions;
3. Successfully demonstrate clinical proficiency in geriatric dentistry;
4. Be a student member in the Special Care Dentistry Association.

Fellows satisfactorily completing all program requirements will earn a graduate certificate.

Because advanced dental education in geriatrics is not a recognized dental specialty, the program will not be accredited by the Commission on Dental Accreditation (CODA). However, Fellows successfully completing the training program will meet the Part 2 educational criteria for attaining Fellowship status in the Special Care Dentistry Association.

Student Learning Outcomes

1. To gain experiential knowledge to competently deliver oral health services to older adults living independently, in residential or long-term care facilities, or in palliative care.
2. To acquire an in-depth understanding of the changing medical and mental health needs of older adults and how oral health is connected to healthy aging.
3. To recognize elder abuse and increase awareness of the challenges institutionalized and frail older adults experience with access to health care and oral health services.
4. To gain experiential knowledge in care coordination and interprofessional collaboration with other care providers to improve health outcomes and quality of life for older adult patients.

Orthodontics and Dentofacial Orthopedics (Certificate)

Overview

The Graduate Orthodontics and Dentofacial Orthopedics Program was established in 2004 and is a full-time program requiring 30 months in active residency beginning in August each year. The Orthodontics and Dentofacial Orthopedics program provides a balanced education with a strong emphasis in clinical experience where residents are exposed to the most current techniques and practices in the field. Upon completion of the program, the resident is awarded a Certificate in Orthodontics and Dentofacial Orthopedics and a Master of Science in Dentistry.

The program will include extensive exposure to a multitude of cases, treatment philosophies, and practice management experiences. Residents will have the opportunity to start over 45 cases using various appliances and systems. Throughout the program, residents can expect to treat Invisalign, SLX Clear aligner, Lingual as well as a large number of Cleft Lip and Palate/ Craniofacial Anomaly cases.

The University of Colorado School of Dental Medicine Graduate Orthodontics and Dentofacial Orthopedics Program accepts 12 residents each year from a variety of backgrounds and life experiences. We use a holistic review process when considering applicants by reviewing a number of factors with an emphasis on academic achievement, service, research, class rank and an invitation only interview.

Ideal Applicant

- Dental school GPA of 3.5 or higher
- GRE scores (top quartile)
- Class rank (top 30%)
- Research experience is highly desirable
- Record of service activities
- Excellent letters of recommendation (A strong recommendation from the applicant's department of orthodontics is preferable)
- **Advanced Dental Admission Test (ADAT)** - While not required, applicants may submit their ADAT score to supplement their application.

Prerequisite Requirements

- Graduate from an ADA accredited dental school in the United States or Canada with a DDS or DMD degree.
- Pass the National Board Dental Examinations (NBDE) Part I. Applicant must pass the NBDE Part II before enrollment into the program.
- Or applicant must pass the Integrated National Board Dental Examination (INBDE) before enrollment into the program.

Application Requirements

To apply, please apply using **ONE** of the following methods:

PASS Application-

Applicants may apply by submitting a portion of the application requirements via the web-based application, Postdoctoral Application Support Service (PASS) (<https://pass.liasoncas.com/applicant-ux/#/> login).

The PASS application includes:

- Personal statement
- Curriculum vitae/resume
- Institution evaluation form
- Three (3) letters of recommendation
- Official dental school transcript
- Official National Board Dental Examination or Integrated National Board Dental Examination score(s)

The remaining items may be emailed to orthoadmissions@ucdenver.edu or mailed to the address below to complete your application:

- CU Orthodontics and Dentofacial Orthopedics Supplemental Application (https://dental.cuanschutz.edu/docs/librariesprovider253/ortho-students/cu-odo-supplemental-application-2024-25---cmc-3-12-24.pdf?sfvrsn=6834ccbb_1)
- Official GRE scores (Institutional code: 7209)
- \$100 application fee payable to "CU Orthodontics and Dentofacial Orthopedics"
- Small photo (passport size)

OR

CU Orthodontics and Dentofacial Orthopedics Application

Applicants may apply by submitting all the following required items directly to the CU Orthodontics and Dentofacial Orthopedics program at the address below:

- Completed CU Orthodontics and Dentofacial Orthopedics Application (https://dental.cuanschutz.edu/docs/librariesprovider253/ortho-students/cu-odo-application-2024-25-application---final-cmc-3-12-24.pdf?sfvrsn=f732ccbb_1) includes the following forms:
 - Personal essay
 - Curriculum vitae/resume
 - Academic Performance Evaluation Form
 - Three (3) letters of recommendation that can be sent via email (Orthoadmissions@ucdenver.edu) from the person recommending you.
 - Official dental school transcript
 - National Board Dental Examination scores (INBDE also accepted)
 - Official GRE scores (Institutional code: 7209)
 - \$100 application fee payable to "CU Orthodontics and Dentofacial Orthopedics"
 - Small photo (passport size)

Mailing Address:

University of Colorado School of Dental Medicine
Graduate Orthodontics and Dentofacial Orthopedics Program Application

13065 East 17th Avenue
Mail Stop F849
Aurora, CO 80045

Nondiscrimination Policy

The CU School of Dental Medicine Graduate Orthodontics and Dentofacial Orthopedics Program does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation,

or political philosophy in admission and access to, and treatment and employment in, its educational programs and activities. Individuals of all ethnic minority groups are encouraged to apply for admission.

Curriculum

The 30-month residency program will be covered according to the following manner:

- Didactic - 26%
- Clinical - 58%
- Research -13%
- Teaching -3%

Clinical emphasis is placed on the use of contemporary edgewise appliances in conjunction with functional and other orthopedic appliances to treat children, adolescents and adults using both routine orthodontics and orthognathic surgery. Participation with craniofacial anomaly patients and boards is required.

First Year

First Year

Fall		Hours
DSOR 5101	Orthodontics 101 - Boot Camp	4.2
DSOR 5102	Dentofacial Growth and Development 1	1.8
DSOR 5103	Diagnosis and Treatment Planning 1	1.8
DSOR 5104	Biomechanics 1	3.5
DSOR 5105	Research Methodology and Biostatistics 1	1.8
DSOR 5107	Treatment Planning 1	3.5
DSOR 5108	Current Literature Review 1	0.9
DSOR 5841	Research 1	0.9
DSOR 5931	Clinical Orthodontics 1	7.1
Hours		25.5
Total Hours		25.5

First Year

Spring		Hours
DSOR 5202	Dentofacial Growth and Development 2	2.1
DSOR 5203	Diagnosis and Treatment Planning 2	2.1
DSOR 5204	Biomechanics 2	3.2
DSOR 5205	Research Methodology & Biostatistics 2	2.1
DSOR 5207	Treatment Planning 2	4.3
DSOR 5208	Current Literature Review 2	1.1
DSOR 5321	Orthognathic Surgical Treatment	2.1
DSOR 5842	Research 2	2.1
DSOR 5932	Clinical Orthodontics 2	7.7
Hours		26.8
Total Hours		26.8

First Year

Summer		Hours
DSOR 5211	Treatment in Preadolescent Children	1.8
DSOR 5302	Implants in the Orthodontic Patient	0.9
DSOR 5304	Biomechanics 3	1.8
DSOR 5307	Treatment Planning 3	3.5
DSOR 5331	Management of the TMJ Patient	1.8

DSOR 5344	Advanced Radiology and Radiographic Interpretation	1.8
DSOR 5843	Research 3	2.6
DSOR 5933	Clinical Orthodontics 3	7.4
Hours		21.6
Total Hours		21.6

Second Year

Second Year

Fall		Hours
DSOR 5341	Fundamentals in Teaching, Learning & Assessment	1
DSOR 6107	Treatment Planning 4	4
DSOR 6108	Current Literature Review 4	1
DSOR 6111	Periodontic/Orthodontic Treatment	1
DSOR 6206	Dent/Craniofacial Anomalies	2
DSOR 6844	Research 4	4
DSOR 6934	Clinical Orthodontics 4	9.4
Hours		22.4
Total Hours		22.4

Second Year

Spring		Hours
DSOR 8317	Advanced Diagnosis of Oral Lesions	0.6
DSOR 6207	Treatment Planning 5	4.3
DSOR 6208	Current Literature Review 5	1.1
DSOR 6209	Surgical Anatomy & Osteology	1.1
DSOR 6845	Research 5	5.3
DSOR 6935	Clinical Orthodontics 5	10.2
DSOR 6936	Review for American Board Examination	1.1
Hours		23.7
Total Hours		23.7

Second Year

Summer		Hours
DSOR 7107	Treatment Planning 6	3.5
DSOR 7108	Current Literature Review 6	0.9
DSOR 7112	Orthodontic Clinical Teaching 1	3.5
DSOR 7311	Scientific Writing & Evaluation	1.8
DSOR 7846	Research 6	5.3
DSOR 7936	Clinical Orthodontics 6	8.4
DSOR 7938	Clinical Problems 1	0.9
Hours		24.299999999999997
Total Hours		24.299999999999997

Third Year

Third Year

Fall		Hours
DSOR 6201	Ethics & Practice Management	2
DSOR 7207	Treatment Planning 7	4
DSOR 7208	Current Literature Review 7	1
DSOR 7212	Orthodontic Clinical Teaching 2	4
DSOR 7847	Research 7	6

DSOR 7937	Clinical Orthodontics 7	9.8
DSOR 7940	Orthodontic Retention I	1
Hours		27.8
Total Hours		27.8

Third Year

Spring		Hours
DSOR 5111	History of Orthodontics & Dentofacial Orthopedics	0.9
DSOR 7300	Current Literature Review 8	0.6
DSOR 7307	Treatment Planning 8	2.3
DSOR 7312	Orthodontic Clinical Teaching 3	1.1
DSOR 7848	Research 8	2.8
DSOR 7934	Clinical Orthodontics 8	7.6
DSOR 7939	Clinical Problems 2	1
DSOR 7941	Orthodontic Retention II	2.3
Hours		18.6
Total Hours		18.6

Requirements for Graduation

- This certificate is awarded in tandem with the completion of the Masters in Dentistry curriculum. Exceptions may be approved on a case-by-case basis.
- Attendance of all classes, clinics, and assigned meetings
- Passing all classes and maintaining an overall B average or above
- Successful completion of the Proficiency Examinations
- Demonstration of clinical proficiency in orthodontics
- Completion of a research project and committee approval/defense of a publishable manuscript in AJO-DO format
- Successful completion of all required courses.
- Challenging Part II (written examination) of the American Board of Orthodontics during the 2nd year.

Program Goals

Program Goal 1

- Provide patient-based clinical care to help residents gain proficiency in orthodontics and deliver high-quality care to patients

Objectives:

- Overall Provide a diverse clinical experience similar to normal clinical practice
- Gather an appropriate and complete data base on each patient to provide a strong foundation for diagnosis, treatment planning, treatment consultation, treatment and retention of the patient
- Utilize a problem-based diagnostic and treatment planning strategy for all patients
- Utilize craniofacial growth and development knowledge in planning and carrying out patient treatment
- Integrate relevant biological, clinical and behavioral science into patient treatment
- Utilize current biomechanical and biomaterial techniques and strategies in patient care
- Utilize interdisciplinary consultation and care when appropriate

- Apply the principles of infection control and environmental safety to patient care and clinical operations

Program Goal 2

- Provide residents with broad-based didactics and a strong basis for continued learning and clinical practice

Objectives:

- Use and understand basic scientific principles
- Provide sufficient supporting knowledge to allow residents to appropriately evaluate the literature and interact knowledgeably with other dental specialists
- Provide appropriate knowledge on business, legal and ethical issues to aid the student in managing an orthodontic practice

Program Goal 3

- Provide residents the foundation to critically evaluate and conduct research

Objectives:

- Provide familiarity with research design and statistical analysis
- Formulate a proposal, carry out a research project, analyze results and write the results in a publishable format
- Submit a publishable manuscript to a journal as a contribution to the clinical and scientific literature
- Develop characteristics of a life-long learner

Program Goal 4

- Encourage service and socially responsible behavior

Objectives:

- Participate in organized dentistry initially by attending local and national meetings
- Participate in craniofacial deformity and underprivileged patient clinics
- Educate non-orthodontists concerning orthodontics

Periodontics (Certificate)

Overview

The Graduate Periodontics Program begins July 1st of each year and is of 36 months duration. Upon successful completion of the program, the resident is awarded a Certificate in Periodontics and is eligible to take the American Board of Periodontology examination. A Master of Science in Dentistry degree is a requirement of the program, and residents are prepared to defend a Master's Thesis.

The program is planned to be multifaceted and to utilize the extensive facilities and outstanding personnel of the University of Colorado to provide:

- A strong foundation in the basic sciences, including surgical anatomy, cell biology, biochemistry, immunology, research methodology, and others.
- Clinical science courses that include occlusion, oral medicine, oral pathology, dental implantology, interdisciplinary treatment planning, and others.
- An extensive review of the periodontal literature to provide the basis for understanding current philosophies of therapy and to establish a scientific basis for formulating comprehensive treatment plans.
- Exposure to a wide range of periodontal diagnoses requiring a variety of therapeutic procedures. Residents are encouraged to utilize a variety of materials and clinical techniques as long as there is evidenced-based research to support their clinical decision-making.
- Research opportunities in either basic science or clinical areas to enable the resident to accomplish a meaningful original research project.
- Experience in conscious sedation training and management of special care needs patients.
- Teaching experience in both the classroom and clinic to communicate those principles and skills acquired during training.

Admission Requirements

The University of Colorado Graduate Periodontics Program **DOES NOT** participate in ADEA/PASS or MATCH Programs. To apply, please follow the guidelines below.

The number of applicants accepted varies each year based upon positions available and Commission on Dental Accreditation limitations. Candidates should possess strong academic credentials. The application cycle opens on March 1st. Applicants must submit a completed application by July 1st in order to be considered for admission for the next year. The application process is forever evolving during this time and you will be notified after July 1st of the next steps. Upon acceptance, a \$3,000 deposit is required to hold your position. This deposit will be applied toward tuition.

Please note at this time our program cannot provide externships. Once your application is in, you will be assigned to a 2nd-year resident where specific questions can be answered.

Application Requirements:

- Completed Postgraduate Periodontics Program Application (https://dental.cuanschutz.edu/docs/librariesprovider253/prospective-student-uploads/periodo-admissions-application_082023.pdf?sfvrsn=239404bb_2)

- Regents Questionnaire (https://dental.cuanschutz.edu/docs/librariesprovider253/prospective-student-uploads/board-of-regents-questionnaire-2008-2009.pdf?sfvrsn=87ddc9b9_2)
- Official transcript in a sealed envelope from each college/university attended. International transcripts must be evaluated by an accredited foreign credentialing service. If your college/university can send official transcripts via email, these will be accepted going forward.
- National Board Examination scores (official report or certified copy), can be sent via email.
- Curriculum vitae
- Three (3) letters of recommendation. Recommendation letters can be sent via email (alyssa.russo@cuanschutz.edu) from the person who is recommending you.
- Application fee of \$50.00 paid online (https://isis-cs.prod.cu.edu/psc/csprod/EMPLOYEE/HRMS/c/CU_SELFSESRV_PUB.CU_APPFEE_PAYMENT.GBL?INSTITUTION=CUDEN).

More detailed information can be found on the American Academy of Periodontology (AAP) website (<https://www.perio.org/education/CO-UCO.htm>).

Additional Documents Required (If Applicable):

- Graduate Record Examination (GRE) scores: Required for all applicants who graduated from a dental school not accredited by the Commission on Dental Accreditation or schools that do not rank or provide grades. GRE scores taken more than five (5) years before the application date will not be accepted. For GRE scores, please use the institution code 7209.
- Test of English as a Foreign Language (TOEFL) scores: Required for international applicants. TOEFL tests taken more than two (2) years prior to the date of application will not be accepted. For TOEFL scores, please use the institution code B785.
- Permanent Resident Green Card: If an applicant is now a permanent resident of the United States, the applicant must provide their full, legal name as it appears on immigration documents and a certified copy of the front and back of their federal Green Card.

Applications can be sent via email

(angelica.maez@cuanschutz.edu) (preferred method) or mailed to:

University of Colorado School of Dental Medicine
Postdoctoral Program in Periodontics
Mail Stop F-850
13065 E. 17th Avenue (For FED-EX/UPS, include Room 104D)
Aurora, CO 80045

Applications will be updated in your file at the beginning of every month as long as we have your application in hand. We will reach out by the 5th of each month leading to the deadline to verify that your application is complete or if there is anything missing. If we do not have your application, no update will be given. Thank you for your patience on this.

Questions? Please contact Angelica Maez at 303-724-6243 or angelica.maez@cuanschutz.edu.

Curriculum

Over the course of 36 months, residents' time is allocated in the following manner:

- Clinical – 62%
- Didactic - 34%
- Research – 3%
- Teaching – 1%

Requirements for Graduation:

- Maintain a "B" (3.0 on a 4.0 scale) overall Grade Point Average (GPA)
- Successful completion of all required courses or their appropriate substitutes
- Attendance at all classes and clinics assigned
- Successful completion of exams
- Demonstrate clinical proficiency in Periodontics
- Be a Student Member of the American Academy of Periodontology
- Be a Student Member of the American Dental Association

First Year Courses

Code	Title	Hours
DPER 6209	Surgical Anatomy and Osteology	.1-11
DPER 7100	Periodontics Specialty Clinic 1	.1-11
DPER 7101	Periodontal Current Literature	.1-11
DPER 7103	Periodontal Literature Review Seminar I	.1-11
DPER 7110	Advanced Radiology and Radiographic Interpretation	.1-11
DPER 7111	Advanced Periodontal Concepts	.1-11
DPER 7113	Oral Medicine and Clinical Diagnosis	.1-11
DPER 7114	Physical Diagnosis	.1-11
DPER 7115	Interdisciplinary Course 1A	.1-11
DPER 7120	Advanced Periodontal Biology	3
DPER 7200	Periodontics Specialty Clinic 2	.1-11
DPER 7201	Periodontics Current Literature 1A	.1-11
DPER 7203	Periodontal Literature Review Seminar 1A	.1-11
DPER 7204	Periodontal Case Presentations Seminar 1A	.1-11
DPER 7210	Advanced Periodontal Biology	.1-11
DPER 7211	Pain Control & Sedation/Comprehensive Pain Management	.1-11
DPER 7212	Postgraduate Dental Implantology Seminar 1B	.1-11
DPER 7215	Interdisciplinary Course 1B	.1-11
DPER 7216	Pharmacology 1	.1-11
DPER 7219	Dental and Medical Emergency Management	.1-11
DPER 7220	Research and Methodology and Biostatistics I	2.5
DPER 7300	Periodontics Specialty Clinic 3	.1-11
DPER 7301	Periodontics Current Literature 1B	.1-11
DPER 7302	Periodontics Treatment Planning 1B	0.5
DPER 7303	Periodontal Literature Review Seminar 2	.1-11
DPER 7304	Periodontal Case Presentations Seminar 1B	.1-11
DPER 7305	Periodontal Research 1	.1-11
DPER 7308	Ethics, Financial and Practice Management 1	.1-11
DPER 7315	Interdisciplinary Course 1C	.1-11
DPER 8106	Anesthesiology	.1-11

DPER 7316	Pharmacology II	.1-11
DPER 7317	Implant Provisionalization for the Periodontal Residen	.1-11
DPER 7320	Research Methodology and Biostatistics 2	.1-11
DPER 8116	Management of Orofacial Pain	.1-11
DPER 8317	Advanced Oral & Maxillofacial Pathology for Periodonon	.1-11
DPER 8120	Head and Neck Anatomy	.1-11

Second Year Courses

Code	Title	Hours
DPER 8100	Periodontics Specialty Clinic 4	.1-11
DPER 8101	Periodontal Current Literature 2	.1-11
DPER 8102	Periodontal Literature Review Seminar 2	.1-11
DPER 8105	Periodontal Research 2	.1-11
DPER 8106	Anesthesiology	.1-11
DPER 8115	Interdisciplinary Course 2A	.1-11
DPER 8200	Periodontics Specialty Clinic 5	.1-11
DPER 8201	Periodontal Current Literature 2A	.1-11
DPER 8203	Periodontal Literature Review Seminar 3	.1-11
DPER 8204	Periodontal Case Presentations Seminar 2A	.1-11
DPER 8205	Periodontal Research 3	.1-11
DPER 8215	Interdisciplinary Course 2B	.1-11
DPER 8216	Pharmacology III	.1-11
DPER 8219	Dental and Medical Emergency Management	.1-11
DPER 8222	Periodontic/Orthodontic Treatment	.1-11
DPER 8300	Perio Specialty Clin 6	.1-11
DPER 8301	Periodontics Current Literature 2B	.1-11
DPER 8302	Perio Treatment Plan 2B	0.5
DPER 8303	Perio Lit Rev Seminar 4	.1-11
DPER 8304	Perio Case Pres Sem 2B	.1-11
DPER 8305	Perio Research 4	.1-11
DPER 8308	Ethics, Financial and Practice Management 2	.1-11
DPER 8311	Adv Immu/ Microbiology	.1-11
DPER 8315	Interdisciplinary Course 2C	.1-11
DPER 8316	Pharmacology IV	.1-11

Third Year Courses

Code	Title	Hours
DPER 9015	Interdisciplinary Course 3A	.1-11
DPER 9017	Scientific Writing and Evaluation	.1-11
DPER 9100	Perio Specialty Clin 7	.1-11
DPER 9101	Periodontal Current Literature 3A	.1-11
DPER 9102	Periodontal Literature Review Seminar 5	.1-11
DPER 9105	Periodontal Research 5	.1-11
DPER 9200	Perio Specialty Clin 8	.1-11
DPER 9201	Periodontal Current Literature 3B	.1-11
DPER 9203	Periodontal Literature Review Seminar 6	.1-11
DPER 9204	Perio Case Pres Sem 3A	.1-11
DPER 9205	Periodontal Research 6	.1-11
DPER 9215	Interdisciplinary Course 3B	.1-11
DPER 9216	Pharmacology V	.1-11
DPER 9219	Dental and Medical Emergency Management	.1-11

DPER 9300	Perio Specialty Clin 9	.1-11
DPER 9301	Periodontal Current Literature 3C	.1-11
DPER 9303	Periodontal Literature Review Seminar 7	.1-11
DPER 9304	Perio Case Pres Sem 3B	.1-11
DPER 9305	Periodontal Research 7	.1-11
DPER 9308	Ethics, Financial and Practice Management 3	.1-11
DPER 9315	Interdisciplinary Course 3C	.1-11
DPER 9316	Pharmacology VI	.1-11

Certificate Requirements

Requirements for Graduation:

- Maintain a "B" (3.0 on a 4.0 scale) overall Grade Point Average (GPA)
- Successful completion of all required courses or their appropriate substitutes
- Attendance at all classes and clinics assigned
- Successful completion of exams
- Demonstrate clinical proficiency in Periodontics
- Be a Student Member of the American Academy of Periodontology
- Be a Student Member of the American Dental Association

Student Learning Outcomes

Mission Statement:

The primary objective of the Periodontics Residency Program is to produce outstanding clinical periodontists who engage in a broad scope of periodontal procedures and who are capable of engaging in research, teaching and leadership activities. We hope to produce the most well trained clinical periodontists coming out of residency programs in the U.S., so that they can offer the highest quality of care to their patients, provide for their families, and give back to the community and the profession.

This is accomplished by focusing on the following goals and objectives:

Goal 1

- Provide comprehensive training that assures resident knowledge and proficiency in periodontics.

Objectives:

- Demonstrate foundational didactic knowledge and insight in the biomedical sciences.
- Demonstrate a high level of clinical skill in a comprehensive variety of periodontal and dental implant treatment modalities.
- Demonstrate knowledge of classic and current periodontal and Implant literature; including interpretation, analysis, and critical evaluation.
- Demonstrate knowledge of systemic/medical considerations impacting patient periodontal status and provision of care.
- Demonstrate knowledge of pathogenesis/management of oral mucosal pathoses.
- Demonstrate knowledge of and clinical skills in multidisciplinary patient care (prosthodontic, orthodontics, TMD, endodontics).
- Demonstrate knowledge of and clinical skills in methods of adjunctive anxiety and pain control including conscious sedation using intravenous, oral and inhalation routes. Emphasis will be placed on IV sedation.

- Prepare residents for practice following graduation by introduction to principles of practice management.
- Demonstrate professional/ethical behavior in all aspects of residency training and patient care.

Goal 2

- Provide instructional skills that will enable residents to effectively communicate/transmit knowledge of periodontics and related subjects.

Objectives:

- Demonstrate knowledge of organizing, leading and presenting lectures, case presentations and seminars.
- Demonstrate ability to teach clinical periodontal evaluation, diagnosis and therapy to other oral health care providers.

Goal 3

- Prepare residents for specialty board certification.

Objectives:

- Successfully challenge the AAP In-Service Examination.
- Successfully evaluate case scenarios using ABP guidelines.
- Obtain specialty board certification by program graduates.

Goal 4

- Create an atmosphere of scientific inquiry and scholarship.

Objectives:

- Develop an understanding of the scientific method, hypothesis testing and use of evidence-based methodologies. Demonstrate active engagement in research leading to Master of Science of Dentistry degree by the conclusion of residency.
- Present research findings at local/national levels. Publish in scientific journals.

Goal 5

- Maintain rigorous evaluation of the residency program.

Objectives:

- Evaluation of the residency program by program graduates.
- Evaluation of faculty effectiveness by residents and Program Director.
- Provide frequent formal resident feedback.
- Evaluate goals, objectives and outcomes of the program annually.

School of Medicine

Contact

Fitzsimons Building
13001 E. 17th Place
Campus Box C290
Aurora, CO
Phone: 303.724.5375
Web: <https://medschool.cuanschutz.edu/>

About Us

Advancing Science, Improving Care

The University of Colorado School of Medicine is located on the Anschutz Medical Campus, one of the nation's newest health care campuses. Innovative architecture fosters collaboration among students, researchers and clinicians and extends to two world-class campus hospitals: University of Colorado Hospital and Children's Hospital Colorado.

The Facts

- More than 2 million adult and pediatric patients a year served
- Industry partners located in the adjacent Fitzsimons Innovation Community
- Campus site totals 256 acres of land including clinical, research, and education zones
- A model across the nation for the successful redevelopment of a decommissioned U.S. Army facility

The Name

In 2006, in recognition of a series of gifts from The Anschutz Foundation, the University of Colorado announced that its Aurora campus would be named the Anschutz Medical Campus. In 2018, the foundation donated \$120 million to the campus, bringing the foundation's total investment in the medical campus to nearly \$300 million since 2000.

The Mission

- Education - through the provision of educational programs to medical students, allied health students, graduate students and house staff, practicing health professionals, and the public at large;
 - Research - through the development of new knowledge in the basic and clinical sciences, as well as in health policy and health care education;
 - Patient Care - through state-of-the-art clinical programs which reflect the unique educational environment of the University, as well as the needs of the patients it serves and,
 - Community Service - through sharing the School's expertise and knowledge to enhance the broader community, including our affiliated institutions, other healthcare professionals, alumni, and other colleagues, and citizens of the state.
- Anesthesiology (MS) (p. 281)
 - Medicine (MD) (p. 288)
 - Office of Research Education (p. 334)
 - Biomedical Sciences (p. 335)
 - Cancer Biology (PhD) (p. 337)
 - Cell Biology, Stem Cells & Development (PhD) (p. 340)
 - Computational Bioscience (PhD) (p. 343)
 - Human Medical Genetics & Genomics (PhD) (p. 346)

- Immunology (PhD) (p. 349)
- Integrated Physiology (PhD) (p. 352)
- Medical Scientist Training Program (MD/PhD) (p. 355)
- Microbiology (PhD) (p. 365)
- Molecular Biology (PhD) (p. 368)
- Neuroscience (PhD) (p. 371)
- Pharmacology and Molecular Medicine (PhD) (p. 374)
- Rehabilitation Science (PhD) (p. 378)
- Structural Biology, Biochemistry & Biophysics (PhD) (p. 381)
- Physical Therapy (DPT) (p. 384)
- Physician Assistant Studies (MPAS) (p. 394)

Anesthesiology (MS)

University of Colorado Anesthesiologist Assistant Program

12631 E. 17th Avenue, Suite 2017
Mailstop 8202
Aurora, CO 80045

Phone: 303-724-1764 or 303-724-0197
Fax: 303-724-1761
Email: AAPProgram@cuanschutz.edu

Overview

The University of Colorado Anesthesiologist Assistant Program is a graduate medical education program in the University of Colorado School of Medicine. The Program accepts qualified individuals who desire to undertake rigorous didactic and clinical education in order to become knowledgeable, skilled anesthetists. Applicants must complete a baccalaureate degree in any major field of study from an accredited institution, including above average performance (letter grade of "B-" or higher) in courses required in a premedical curriculum (refer to required courses in the Admissions section). All prerequisite courses must be completed before the program's start date.

Individuals who successfully complete this program are awarded a Master of Science Degree in Anesthesiology by the University of Colorado. In February, June or October of their senior year, students take the National Certifying Examination for Anesthesiologist Assistants. Following graduation and successful completion of the Certifying Examination, graduates can become integral anesthetist members of an anesthesia care team practice lead by an anesthesiologist.

The University of Colorado Anesthesiologist Assistant Program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Accreditation Review Committee for the Anesthesiologist Assistant (ARC-AA).

Commission on Accreditation of Allied Health Education Programs
9355 - 113th St. N, #7709
Seminole, FL 33775
Phone: 727-210-2350
www.caahep.org (<https://www.caahep.org/>)

Admission Requirements

Academic Requirements

In order to enter the Master of Science Program in Anesthesiology, students will need:

- A bachelor's degree from an accredited institution
- An MCAT score attained within 5 years of applying to the program
- Completion of the prerequisite courses noted below
- A minimum of 8 hours of anesthetist shadowing (Applicants are encouraged to fulfill as many hours as possible)

- Background Check administered through the purchase of **package code UF28** on CastleBranch.com (<https://discover.castlebranch.com/>)
- A CASPer online assessment (see **Application Process page**)

Prerequisite Courses

Documentation that each of the prerequisites listed below has been completed. Competitive applicants will have a grade of B-minus (2.7) or higher. For those courses that have been repeated, the highest grade will be recognized. We accept courses taken at a four year institution, community college or online as long as they are from a regionally accredited institution.

The prerequisites must be completed within 7 years of the application deadline; however, if a student takes the MCAT and receives a score of 500 or higher, the 7 year requirement for prerequisites will be waived.

- **English:** 1 semester (7 year window DOES NOT APPLY)
- **General Biology with Lab:** 2 semesters total
 - General Biology I with lab (1 semester)
 - General Biology II with lab (1 semester)
- **General Chemistry with Lab:** 2 semesters total
 - General Chemistry I with lab (1 semester)
 - General Chemistry II with lab (1 semester)
- **Organic Chemistry with Lab:** 2 semesters total
 - Organic Chemistry I with lab (1 semester)
 - Organic Chemistry II with lab (1 semester)
- **General Physics with Lab:** 2 semesters total (trigonometry or calculus based is preferred)
 - General Physics I with lab (1 semester)
 - General Physics II with lab (1 semester)
- **Biochemistry:** 1 semester
- **Statistics:** 1 semester
- **Human Anatomy and Physiology:** 1 semester of combined A&P or 1 semester each of Human Anatomy and Human Physiology (Courses in vertebrate embryology and developmental anatomy or mammalian physiology and embryology will NOT satisfy this requirement.)

Advanced placement credit for prerequisite coursework that appear in official transcripts **may** be considered based on courses, scores, and student's overall undergraduate performance.

Credit Conversion Policy

The University of Colorado uses a semester system; however, the university does accept quarter credit hours. Quarter credit hours are worth 2/3 of 1 semester hour. (One semester is approximately 4-5 quarter hours, and two semesters is 9 quarter hours.) Quarter credit hours may be rounded to the nearest whole number at the discretion of the admissions committee with consideration given to the course work and grade earned.

Test Scores

Medical College Admission Test (MCAT) scores from within five years of the application cycle year. **The applicant must have MCAT score reports sent to CASAA. The GRE will NOT be accepted in place of the MCAT.**

Shadowing Experience

Applicants to the program **must** be familiar with the practice of anesthesia, including related activities in the operating room. Individuals applying to the program must spend at least 8 hours with an anesthesiologist or an anesthesiologist in an operating room environment observing the conduct of anesthesia. Applicants who meet the minimum requirement will be considered for admission, but additional hours are **strongly suggested**.

The Documentation of Familiarity with Anesthesia Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-documentation-of-familiarity-with-anesthesia-practice-form.pdf?sfvrsn=acede4b9_2) must be submitted as part of the application to verify the number of hours that the applicant has spent in the OR.

Background Check

A certified background check must be completed at the time of application. You will not be invited for an interview unless a background check from CastleBranch (<https://discover.castlebranch.com/>) has been completed. **Make sure that you ONLY purchase the UF28 Package Code (Background Check).** Do not purchase any of the other packages at this time.

Foreign Graduate Admission

Please visit our webpage (<https://medschool.cuanschutz.edu/anesthesiology/education/anesthesiologist-assistant-program/aa-admissions/foreign-graduate-admission/>) for more information.

Application Process

1. Create an applicant account on CASAA (<https://casaa.liaisoncas.com/applicant-ux/#/login>) (Centralized Application Service for Anesthesiologist Assistants).
2. Choose the **University of Colorado, Denver** from the list of programs.
3. Complete all four sections of the application (**Personal Information, Academic History, Supporting Information, and Program Materials**). The **Program Materials** section is specific to our program.
4. The references portion is called **Evaluations** and is located in the **Supporting Information** section. You are required to have a minimum of 3 evaluations. Once you have saved an electronic evaluation, an email request will automatically be sent to the evaluator on your behalf. Please advise your evaluator to look for this email in their inbox, as well as their spam or junk mail folder, as emails do occasionally get filtered out.
5. Please use updated transcripts to complete the online application. If a course is "In Progress" at the time of application, enter the letters **"IP"** for that course when entering Prerequisite Courses.
6. In the Program Materials section you will need to upload:
 - A **CV/Resume** (include any medical experience you may have)
 - Documentation of Familiarity with Anesthesia Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-documentation-of-familiarity-with-anesthesia-practice-form.pdf?sfvrsn=acede4b9_2)
 - upload under SHADOWING/HEALTHCARE HOURS
 - combine multiple forms into a single file
 - Documentation Concerning Technical Standards Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-technical-standards-form.pdf?sfvrsn=5aede4b9_2)
 - upload under OTHER
 - Criminal Background Check Release Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/background-check-release-form-on-website---castlebranch-5-3-19.pdf?sfvrsn=7dede4b9_2)
 - upload under OTHER
 - Drug Screen Release Form (https://www.ucdenver.edu/docs/librariesprovider54/education-aa-program/ucd-aa-program-drug-testing-release-form.pdf?sfvrsn=d2eee4b9_2)
 - upload under OTHER
7. Please note, you will be sending CASAA your official transcripts and MCAT score report from AAMC, not the Program Office. The Program Office will only need these items from you in the event that you are accepted into the Program.
8. In addition to the CASAA application, applicants must complete the **CASPer online assessment**. Successful completion of CASPer is mandatory in order to maintain admission eligibility. Information regarding this mandatory assessment is available on our website (<https://medschool.cuanschutz.edu/anesthesiology/education/anesthesiologist-assistant-program/aa-admissions/admission-requirements/>).

Degree Requirements

First Year

Fall		Hours
ANMS 5000	Orientation to Anesthesia	1
ANMS 5001	Introduction to Clinical Anesthesia	2
ANMS 6801	MSA-1 Seminar 1	1
ANMS 6701	Anesthesia Non-Technical Skills & Wellness I	1
ANMS 5012	Physiology I	2
ANMS 5010	Basic Cardiac Physiology	2
ANMS 5009	Anesthesia Monitoring and Delivery Systems	2
ANMS 5006	Simulation and Skills Laboratory I	1
ANMS 5008	Clinical Anesthesiology I	5
ANMS 5002	Perioperative Medicine	2
Hours		19
Total Hours		19

First Year

Spring		Hours
ANMS 5011	Anesthesia Principles and Practice I	2
ANMS 5013	Patient Monitoring II	2
ANMS 5016	Simulation and Skills Laboratory II	1

ANMS 5018	Clinical Anesthesiology II	5
ANMS 5200	Pharmacology I	2
ANMS 6012	Physiology II	4
ANMS 5007	Survey of Anatomy	2
ANMS 6811	MSA-1 Seminar II	1
ANMS 6711	Anesthesia Non-Technical Skills & Wellness II	1
Hours		20
Total Hours		20

First Year

Summer		Hours
ANMS 5021	Anesthesia Principles and Practice II	2
ANMS 5210	Pharmacology II	2
ANMS 5501	Anesthesia and Co-Existing Diseases I	2
ANMS 5026	Simulation and Skills Laboratory III	1
ANMS 5028	Clinical Anesthesiology III	7.5
ANMS 6007	Anatomical Imaging I	2
ANMS 6821	MSA-1 Seminar III	1
Hours		17.5
Total Hours		17.5

Second Year

Fall		Hours
ANMS 6031	Anesthesia Principles and Practice III	2
ANMS 6110	Physiology III	2
ANMS 6220	Pharmacology III	2
ANMS 6511	Anesthesia and Co-Existing Diseases II	2
ANMS 6038	Clinical Anesthesiology IV	7.5
ANMS 6831	MSA-1 Seminar IV	1
ANMS 5502	Clinical Imaging	2
Hours		18.5
Total Hours		18.5

Second Year

Spring		Hours
ANMS 6311	Senior Seminar II	2
ANMS 6212	Senior Project II	1
ANMS 6048	Clinical Anesthesiology V	10
Hours		13
Total Hours		13

Second Year

Summer		Hours
ANMS 6311	Senior Seminar II	2
ANMS 6212	Senior Project II	1
ANMS 6058	Clinical Anesthesiology VI	10
Hours		13
Total Hours		13

Third Year

Fall		Hours
ANMS 6321	Senior Seminar III	2
ANMS 6221	Senior Project III	1
ANMS 6068	Clinical Anesthesiology VII	10
Hours		13
Total Hours		13

Student Learning Outcomes

The Master of Science in Anesthesiology/MSA Program prepares students to be competent entry-level Anesthesiologist Assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

Competency Based Learning Objectives

Domain I: Cognitive (Knowledge)

Medical Knowledge – Students will have a mastery of the practice of Anesthesiology and be conversant in its subspecialties.

Systems-Based Practice – Students will demonstrate an understanding of university-based anesthesiology practice, including its interactions with other specialties, both medical and surgical. Students will practice cost-effective health care and resource allocation through evidence-based medical practice that does not compromise quality of care.

Domain II: Psychomotor (Skills)

By the end of the curriculum, the MSA students will have the psychomotor skills and demonstrate the proper technique of; IV placement, intubation with various airway devices, arterial and central line placement, and spinal and epidural placement.

Skills in these techniques will be established through:

Entry Level Skills Mastery – Students will be able to demonstrate a comprehensive knowledge of the practice of anesthesiology and its subspecialties through supervised clinical experiences and be able to perform as an entry-level anesthesiologist assistant.

Practice-Based Learning & Improvement – Students will be adept at gathering current information on their own, and will be able to judge the quality of this information as it pertains to their clinical milieu.

Domain III: Affective (Behavior)

By the end of the curriculum the MSA students will be; consummate professionals, passionate members of the patient care team, life-long learners, and patient care quality advocates.

Students will develop these skills through:

1. **Patient Care** – Students will train to become compassionate, efficient, and effective CAAs that maintain a constant focus on patient safety.
2. **Interpersonal & Communications Skills** – Students will have the ability to communicate needs efficiently and clearly (both verbally and in writing) to anesthesiologists, surgeons, patients, patient families, peers and all perioperative staff.
3. **Professionalism** – Students will demonstrate the ability to interact professionally with the OR staff, and will maintain a professional

image at all times, especially with respect to patients and their visiting family members.

Upon completion of the M.S. in Anesthesiology/MSA Program, students will be able to:

1. Evaluate patient medical history
2. Perform a physical examination
3. Understand the risks related to surgery
4. Formulate a safe and cost-effective anesthetic plan based on medical history, physical examination and type of surgery
5. Have the knowledge base to understand patient physiology and pathophysiology, pharmacology related to anesthesia
6. Have the knowledge base to appropriately respond to changes of patient condition during surgery
7. Use electronic medical record appropriately
8. Create a preoperative evaluation, intraoperative chart and a postoperative note in electronic medical record
9. Will be able to perform sedation, regional and general anesthesia safely and cost-effectively

Courses

ANMS 5000 - Orientation to Anesthesia (1 Credit)

Overview of basics of anesthesia to familiarize the student to basic competencies prior to their first clinical day. Topics covered include: medical terminology, pharmacology, anesthesia machine, basic monitoring, anesthesia care plans, drug dosing and calculations. Requisite: Must be admitted to MSA Program.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5001 - Introduction to Clinical Anesthesia (2 Credits)

Introduction to induction, maintenance, and emergence from anesthesia, history and types of anesthesia, universal precautions, infection control, OR layout, sterile fields and techniques, patient interaction, starting intravenous catheters and arterial cannulation, obtaining arterial blood samples, and applying ASA-standard monitors. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5002 - Perioperative Medicine (2 Credits)

A course on preoperative evaluation of the patient based on patient and surgery risk factors. Small group application of patient history and physical taking will also be utilized to allow students to apply concepts learned in class. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

ANMS 5006 - Simulation and Skills Laboratory I (1 Credit)

Exploration of pulse oximetry, capnography, blood pressure monitoring systems, anesthesia delivery systems, breathing circuits, fresh gas flow effect, theory of dilutional methods of cardiac output monitoring, and relations between mean circulatory filling pressures and central venous pressure using anesthesia simulator. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5007 - Survey of Anatomy (2 Credits)

Gross structures of the human body will be covered didactically and integrated with cadaver dissection demonstrations. This course will also develop the knowledge of the human anatomy necessary for the practice of anesthesiology. Requisite: Must be admitted to the MSA Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5008 - Clinical Anesthesiology I (5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5009 - Anesthesia Monitoring and Delivery Systems (2 Credits)

Students will learn about basic monitors related to the practice of anesthesia, including ECG, NIBP, SpO₂, respiratory gas analysis, temperature monitoring and other standard monitors. Students will be fluent in the interpretation of data from these basic monitors. They will also learn about anesthesia delivery systems including principles of ventilator function, breathing circuit configurations, and safety features of the operative setting including scavenging systems, machine checkout, and line isolation monitors.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5010 - Basic Cardiac Physiology (2 Credits)

This course will cover the principles of electrocardiography, ECG interpretation as well as arrhythmias and their pharmacological treatments. Cardiac anatomy and introduction to the different cardiac monitoring devices. ACLS/BLS for adults and PALS with an introduction to pediatric heart will be covered. Introduction to different cardiac surgeries and cardiac pharmacology.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5011 - Anesthesia Principles and Practice I (2 Credits)

Principles involved in the formulation of anesthetic plans based upon data obtained during the preoperative evaluation, including the formulation and practices of different anesthetic plans and techniques as related to specific surgical procedures and pathophysiology. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5012 - Physiology I (2 Credits)

Physiology 1: Principles of Airway Management and Respiratory Physiology: Structure, function, pathophysiology, disease and management of the human airway and pulmonary system will be covered. Basic and advanced principles of airway management, elective and emergent will be covered, including equipment and techniques. Examination, recognition, techniques and management involved in pediatric /adult difficult airways. Specific instruction on common disease states, restrictive and obstructive pulmonary disorders, mechanical ventilation, arterial blood gas analysis and how these concepts apply to patient under anesthesia care will be covered.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5013 - Patient Monitoring II (2 Credits)

More advanced monitoring including, BIS, SvO₂, arterial and central pressure monitoring, basics of ultrasound, advanced ECG and ST analysis. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5016 - Simulation and Skills Laboratory II (1 Credit)

Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will utilize critical thinking skills to fully integrate didactic knowledge in patient care situations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5018 - Clinical Anesthesiology II (5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5021 - Anesthesia Principles and Practice II (2 Credits)

Practical principles, application, and interpretation of various monitoring modalities including ECG, invasive and non-invasive blood pressure, oximetry, cardiac output, respiratory gas analysis, respiration, and instrumentation as they pertain to anesthesia practice. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5026 - Simulation and Skills Laboratory III (1 Credit)

Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will utilize critical thinking skills to fully integrate didactic knowledge in patient care situations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5028 - Clinical Anesthesiology III (7.5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia will be gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5200 - Pharmacology I (2 Credits)

General pharmacologic concept, membrane receptor, transport, biotransformation, pharmacokinetics and pharmacodynamics will be covered. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5210 - Pharmacology II (2 Credits)

Covers drugs that include inhaled anesthetics, opioids, barbiturates, benzodiazepines, anticholinesterases and anticholinergics, neuromuscular blockers, adrenergic agonists and antagonists, non-steroidal anti-inflammatory drugs, antiarrhythmics, calcium channel blockers, diuretics, anticoagulants, antihistamines, and antimicrobials. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5501 - Anesthesia and Co-Existing Diseases I (2 Credits)

This course focuses on the anesthetic considerations that must be accounted for in patients with co-existing diseases due to physiological changes. Disease states include substance abuse, obesity, obstructive sleep apnea, asthma, COPD, etc. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5502 - Clinical Imaging (2 Credits)

Gross structures of the human body will be covered with emphasis placed on imaging modalities, imaging interpretation, and clinical correlation. This course will further develop the knowledge and hands-on skills necessary for the practice of anesthesiology and related procedures. Prerequisite: Student must be admitted to MSA Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

ANMS 6007 - Anatomical Imaging I (2 Credits)

Gross structures of the human body will be covered with emphasis placed on imaging modalities and clinical correlation. This course will also develop the knowledge of the human anatomy necessary for the practice of anesthesiology and related procedures. Prerequisite: Must be admitted to MSA Program.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6012 - Physiology II (4 Credits)

Structure, function, anatomy, pathophysiology, disease, and management of the human cardiovascular, neurological and renal systems. Covers the principles of cardiovascular, renal and neurological physiology and how it applies to a patient's anesthetic as well as anesthetic risk. Pediatric physiology included.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6031 - Anesthesia Principles and Practice III (2 Credits)

This is a course on improving system-based learning and practice. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6038 - Clinical Anesthesiology IV (7.5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6048 - Clinical Anesthesiology V (10 Credits)

Clinical experience in required rotations through anesthesia subspecialty areas. Two#week and four#week interval rotations assigned, and will require call during some nights and weekends. Clinical practice is gained through one#on#one supervised instruction in operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6058 - Clinical Anesthesiology VI (10 Credits)

Clinical experience in required rotations through subspecialty anesthesia areas. Rotations assigned in two#week and four#week intervals, and will require call during some nights and weekends. Clinical practice gained through one#on#one supervised instruction in operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6068 - Clinical Anesthesiology VII (10 Credits)

Clinical experience in required rotations through anesthesia subspecialty areas. Rotations assigned in two#week and four#week intervals, and require call during some nights and weekends. Clinical practice gained through one#on#one supervised instruction in the operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6110 - Physiology III (2 Credits)

Pathophysiology in a systems approach: pregnancy physiology and pathophysiology, hepatic physiology and pathophysiology including coagulation pathways, and endocrine topics pertinent to anesthesia care. This course provides a perspective of the above topics that are integral to providing anesthesia to patients in a variety of settings. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6201 - Senior Project I (1 Credit)

Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6212 - Senior Project II (1 Credit)

Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6220 - Pharmacology III (2 Credits)

This is a continuation of anesthesia specific pharmacology. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6221 - Senior Project III (1 Credit)

Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6301 - Senior Seminar I (2 Credits)

Each student will be required to research, prepare, and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6311 - Senior Seminar II (2 Credits)

Each student will be required to research, prepare and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6321 - Senior Seminar III (2 Credits)

Each student will be required to research, prepare and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6511 - Anesthesia and Co-Existing Diseases II (2 Credits)

Continuation of Anesthesia and Co-Existing Diseases I. Focuses on anesthetic considerations that must be accounted for in patients with co-existing diseases due to physiological changes. Disease states include ischemic heart disease, valvular heart disease, systemic hypertension, pulmonary hypertension, coagulation disorders, etc. Prerequisites: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6701 - Anesthesia Non-Technical Skills & Wellness I (1 Credit)

(ANTS) will examine and develop an understanding of medical errors, situational awareness, decision making, leadership, management of stress and fatigue. In addition this course will cover pedagogical principles in medical education and professionalism. all of which are integral in developing well-rounded and adaptable clinicians. Requisite: Must be admitted to MSA Program.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

ANMS 6711 - Anesthesia Non-Technical Skills & Wellness II (1 Credit)

(ANTS) will examine and develop an understanding of medical errors, situational awareness, decision making, leadership, management of stress and fatigue. In addition this course will cover pedagogical principles in medical education and professionalism, all of which are integral in developing well-rounded and adaptable clinicians. Requisite: Must be admitted to MSA Program.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

ANMS 6801 - MSA-1 Seminar 1 (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6811 - MSA-1 Seminar II (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar. Requisite: Must be admitted to MSA Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6821 - MSA-1 Seminar III (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6831 - MSA-1 Seminar IV (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar. Requisite: Must be admitted to MSA Program

Grading Basis: Letter Grade

Typically Offered: Fall.

- The deadline for a requested deferral is May 1st of the year in which the student is scheduled to start. Deferrals after that date will not be accepted.

Program Leadership

Vesna Jevtovic-Todorovic, MD, PhD, MBA

Chair, Department of Anesthesiology

Jaime Daly, MD

Medical Director

Jillian Vitter, MD

Associate Medical Director

Serena Younes, MS, CAA

Interim Program Director

Eloise Mulroy, MHSc, CAA

Associate Program Director

Craig Mare, MS, CAA

Director of Simulation

Adam Ferrone, MD

Medical Director of Simulation

School of Medicine Deferment Policy

Students can request an opportunity to defer in writing. Normally, deferrals are granted for unusual or mitigating circumstances that create challenges for a student to enter the Master of Science in Anesthesiology at that time. Also some "once in a lifetime opportunities" may arise, making a request to defer reasonable. Some examples include difficult family circumstances, birth of a child, participation in the Olympics, a Fulbright Scholarship opportunity, Teach for America, etc. Students should enter when they have achieved a high degree of readiness to engage fully in the Anesthesiologist Assistant Program. The AA Program Directors will decide whether to grant the deferral.

If a student is a non-resident at the time of initial acceptance, it is not possible to move to Colorado and during the year of deferral become a Colorado resident. There are certain requirements regarding deferral that must be met:

- Student must complete the majority of paperwork as if entering in the year for which they applied and pay the \$1000 deposit.
- For the actual year in which the student plans to enter, a CASAA application must be completed. If the student makes an application for deferral and it is granted, the student will be in a category of "deferred/delayed admission."
- Deferrals are for one year period only.

Medicine (MD)

Doctor of Medicine (MD)

At the University of Colorado School of Medicine, we educate physicians who are curious, life-long learners with a commitment to serve the profession, our patients, and society.

Vision

Our graduates will be physician leaders capable of transforming the health of diverse communities.

Mission

Through a longitudinally integrated curriculum, we aim to educate physician leaders who are curious, life-long learners with a commitment to serve the profession, our patients, and society.

Values

Leadership. Curiosity. Commitment.

Leadership

Dean

John H. Sampson, MD, PhD, MBA, Vice Chancellor for Health Affairs at CU Denver and Dean for the School of Medicine

Associate & Assistant Deans

Jennifer Adams, MD, Assistant Dean, MD Curriculum

Jamie Baker, MD, Assistant Dean of Colorado Springs Branch

Peter Buttrick, MD, Senior Associate Dean for Academic Affairs

Thomas Campbell, MD, Clinical Research Officer, Associate Dean for Clinical Research

Karen Chacko, MD, Associate Dean, Clinical Outreach

Geoffrey Connors, MD, Associate Dean for Graduate Medical Education

Brian Dwinell, MD, Associate Dean of Student Life

Lotte Dyrbye, MD, MHPE, Senior Associate Dean of Faculty and Chief Well-being Officer

Anne Fuhlbrigge, MD, Senior Associate Dean for Clinical Affairs

Amiee Gardner, PhD, Associate Dean of Faculty Development

Jeff J. Glasheen, MD, Associate Dean, Quality and Safety Education

Elizabeth Gundersen, MD, Assistant Dean, Student Affairs

Amira del Pino-Jones, MD, Associate Dean for Diversity, Equity, and Inclusion

Scott Laker, MD, Associate Dean, Clinical Affairs/CU Medicine Medical Director of Adult Health

Abigail Lara, MD, Assistant Dean of Faculty Relations

Steven Lowenstein, MD, MPH, Associate Dean for Faculty Affairs

Miriam Post, MD, Assistant Dean of Faculty Affairs

Jennifer Reese, MD, FAAP, Assistant Dean of Faculty Well-being

Brian T. Smith, Senior Associate Dean for Administration & Finance; Executive Director and Chief Executive Officer of the University of Colorado Medicine

Jeffrey SooHoo, MD, Assistant Dean of Admissions

Chad Stickrath, MD, Assistant Dean MD Curriculum

Shikha Sundaram, MD, Associate Dean, Clinical Affairs, CU Medicine Medical Director for Children's Health

Bradford T. Winslow, MD, Associate Dean for Continuing Medical Education and Professional Development

Shanta Zimmer, MD, Senior Associate Dean for Education, Associate Dean for Office of Diversity & Inclusion

Contacts

School of Medicine Dean's Office

Fitzsimons Building, First Floor

13001 E. 17th Place, Mailstop C292

Aurora, CO 80045

Phone: 303-724-6407

Fax: 303-724-8028

Website: <https://medschool.cuanschutz.edu/deans-office/about-us/contact-us> (<https://medschool.cuanschutz.edu/deans-office/about-us/contact-us/>)

School of Medicine Office of Admissions

Fitzsimons Building, First Floor

13001 E. 17th Place, Mailstop C292
Aurora, CO 80045
Phone: 303-724-6407
Fax: 303-724-8028
Email: md-admissions@cuanschutz.edu

Admissions

AMCAS - Applying to Medical School

CU School of Medicine requires all prospective students to apply through the American Medical College Application Service (AMCAS) based in Washington, DC.

The AMCAS online application usually opens in early June. Normally there is a three to four-week delay before the school receives the application from AMCAS due to transcript verification. Students are encouraged to apply **EARLY**.

Degree and Coursework

The CUSOM requires that students have a baccalaureate degree from an accredited college or university prior to matriculation.

The CUSOM recognizes that the experiences and undergraduate academic experience of our applicants vary greatly. We encourage applicants to explore a diverse, interdisciplinary, and balanced undergraduate education, encompassing the necessary foundational knowledge in the biomedical sciences and humanities. Students need to be adequately prepared in the scientific underpinnings of modern medicine and also understand the psychosocial elements that are critical to its practice.

Accordingly, students should provide evidence to demonstrate competencies in the life sciences, social sciences, physics, and mathematics, based on the AAMC-HHMI Scientific Foundations for Future Physicians (<https://www.aamc.org/download/271072/data/scientificfoundationsforfuturephysicians.pdf>) and AAMC-Behavioral and Social Science Foundations for Future Physicians (<https://www.aamc.org/download/271020/data/behavioralandsocialsciencefoundationsforfuturephysicians.pdf>). These competencies, representing the cumulative knowledge, skills, and commitment to scholarship needed to undertake training as a future physician, can be met through traditional and/or interdisciplinary courses of study in an accredited institution of higher learning, or by other educational, employment, service or life experiences.

Competitive applicants should demonstrate in-depth competency in each of the following areas of study, as reflected by their academic achievements and letters of recommendation.

Biology: Applicants should demonstrate an understanding of molecular and cellular biology, genetics, and the principles underlying the structure and function of organ systems and the regulation of human physiology.

Chemistry/Biochemistry: Applicants should demonstrate competence in the basic principles of chemistry as it pertains to living systems, and knowledge of how biomolecules contribute to the structure and function of cells and organs.

Mathematics/Statistics and Physics: Applicants should demonstrate competence in the basic principles of physics and mathematics underlying living systems and must be able to apply quantitative reasoning, statistical principles, and appropriate mathematics to describe or explain phenomena in the natural world. A basic understanding of statistics or biostatistics is required to comprehend the quantitative aspects of medicine and biomedical research.

Social Sciences and Communication: It is important that applicants demonstrate competence in the humanistic understanding of patients as individuals and members of families, communities, and society. Applicants should be aware of factors that influence individual, community, and societal decisions regarding health and health care delivery. Applicants are expected to speak, write, and read English fluently.

Students are encouraged to consider additional coursework in biochemistry, computer sciences, genetics, humanities, and social sciences. AP and CLEP courses, as well as online courses, are viewed with a degree of comparability to college courses, as long as the US accredited degree-granting institution includes these credits on their transcript as fulfilling certain institutional requirements. Students who have AP or CLEP credit in the basic sciences are encouraged to take upper-level courses in these areas. Courses taken abroad are treated comparably to traditional courses, as long as these credits are included on the transcript of a U.S. accredited degree-granting institution.

College Major – Is there a Preferred Major?

All majors are valued. Students are expected to engage in a rigorous academic program that enables them to understand the basic principles of science central to medicine. Independent of the choice of major, applicants are expected to have acquired effective learning habits, refined their critical thinking skills, and engaged in the habit of lifelong learning.

MCAT

Students must take the Medical College Admissions Test (MCAT), with the oldest exam accepted no more than three years prior to matriculation year. For example, applicants applying for July 2026 matriculation must have MCAT results from January 2023 to October 2025. If the applicant takes the MCAT multiple times, the Admissions Committee will use the best one-time composite score.

Letters of Recommendation

Applicants are required to obtain letters to support their candidacy for admission. We require three to five letters or a committee summary letter; letters can come from a faculty member, clinical experience, research experience, or a current job as the letter transmits cogent information about the applicant's work. Obtaining a letter from the employer with who you are working with during the application year is highly recommended.

Evidence of a successful engagement in a post-college experience is considered a valuable addition to other letters that also may be part of your file.

Some colleges offer a pre-medical advising system and the committee writes letters for their students. A committee letter is sufficient to meet the medical school letter of recommendation requirements.

All letters must be transmitted electronically through AMCAS' application process. Please visit the AMCAS website for further information on how to apply and submit letters of recommendation, Letters of Rec FAQ. (<https://students-residents.aamc.org/applying-medical-school/faq/amcas-faq/>)

We strongly recommend that letters not be from family friends or others who know the student only peripherally.

Secondary Application

Upon receipt and verification of the AMCAS application, the Office of Admissions will email eligible applicants the link to our Secondary Application that is to be completed online and submitted by the last day of November.

The secondary application consists of:

- Secondary application processing fee – fee is non-refundable (fee is waived for FAP eligible applicants)
- Required CUSOM essay
- Optional essays of interest in branches or programs
- CASPer and Duet test results

Completed secondary applications are forwarded to the admissions committee who perform a holistic review of applications and invite select applicants for an interview. Interview invitations are distributed from roughly August through February.

The CASPer Test

All applicants applying to the University of Colorado School of Medicine are required to complete an online suite of assessments (Altus Suite), to assist with our selection process for the 2025-2026 Application Cycle.

Altus Suite is a standardized, three-part online assessment of non-cognitive skills, interpersonal characteristics, and personal values and priorities that we believe are important for successful students and graduates of our program. Altus Suite will complement the other tools that we use for applicant review and evaluation. In implementing Altus Suite, we are trying to further enhance fairness and objectivity in our selection process.

Altus Suite consists of:

- **Casper:** a 60-90 minute online situational judgment test (SJT)
- **Duet:** a 15-minute value-alignment assessment

You will register for Altus Suite for **Medicine (UME) (CSP-10111 - U.S. Medicine)**.

Access www.TakeAltus.com to create an account and for more information on **important dates and requirements**, and the Altus Suite assessments.

Application Fee Payments & Waivers

Students invited to complete the secondary application must submit an application processing fee of \$100 with the secondary application. An application fee waiver will be granted to applicants who received approval from the AAMC Fee Assistance Program (FAP). The secondary application fee is non-refundable.

Technical Standards for Admission

Applicants for admission to the School of Medicine and continuing students must possess the capability to complete the entire medical curriculum and achieve the degree. In addition to successfully completing all courses in the curriculum, students must be able to acquire the knowledge and skills necessary to function in a broad variety of clinical situations and to render a wide spectrum of patient care.

See Technical Standards for Admissions, Promotions, and Graduation here: Technical Standards for Admission (http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/school-medicine/doctor-medicine-md/SOM_Technical_Standards.docx)

Visiting Students

Requirements

1. A completed application must be on file no less than eight weeks prior to the course's beginning date.
2. Immunization form must be completed, signed by your school and returned with your application. Individual health records will not be accepted.
3. Respiratory Mask fit testing (Any type is fine - in general we use 3M N95)
4. HIPAA training
5. USMLE Step 1 Pass
6. Personal health insurance
7. BLS or ACLS certified Criminal Background Report
8. Malpractice Insurance \$1,000,000/\$3,000,000
9. In Good academic standing and in final year of study
10. Instruction for OSHA safety measures and infection control precautions

A nonrefundable application fee of \$150 for MD students is due on receipt of an offer for an externship. DO and International medical students are required to pay a nonrefundable fee of \$4,150 on receipt of an offer for an externship.

Upon completion of the course, student evaluations will be sent by the department course coordinator for the elective. If your school requires their evaluation form to be used please include the form with your application material. Visiting students are also responsible for supplying a copy to the course coordinator once assigned.

We ask that you bring your home school student ID with you. A temporary student ID will be issued, which along with your home school ID will be used for identification on clinical services.

Degree Requirements

Please note: The School of Medicine's Curriculum is currently undergoing reform. Please visit this page (<https://medschool.cuanschutz.edu/education/current-students/curriculum/curriculum-reform/>) for more information on how the curriculum will look for the 2025 student class and beyond.

Trek Curriculum

The Trek Curriculum integrates basic science elements longitudinally throughout the academic careers of our students to prepare them and enhance their personal and professional development as clinicians.

Plains Curriculum

In the Plains, early clinical reasoning sessions will focus on introducing the vocabulary and fundamental concepts. Diagnostic schemas (flowcharts of diagnostic possibilities centered around a chief concern) of common conditions framed around prototypical clinical cases discussed in basic medical science coursework will help link basic science knowledge to the clinical reasoning, communication, and physical examination skills taught in the clinical skills course. Early case-based clinical reasoning sessions will highlight aspects of information gathering from the history and physical examination as well as aspects of hypothesis generation and problem representation. Consistent practice with oral presentations and medical documentation will be one way that the development of a differential diagnosis, a leading diagnosis, diagnostic justifications, and management and treatment plans will be taught in the clinical reasoning sessions.

Code	Title	Hours
<i>Fall Coursework</i>		
IDPT 5010	First Course	1
IDPT 5016	Foundational Principles	9
IDPT 5020	Traverse	1-2.5
IDPT 5017	Hematologic & Lymphatic Systems	5
IDPT 5018	Gastrointestinal System	7
IDPT 5019	Pulmonary & Cardiovascular Systems	10
IDPT 5031	Mentoring & Scholarly Activity	1
IPHE 6000	IPE Healthcare Ethics & Health Equity	1
<i>Spring Coursework</i>		
IDPT 5021	Renal & Urinary Systems	5
IDPT 5020	Traverse	1.5-2.5
IDPT 5022	Nervous System	8
IDPT 5023	Musculoskeletal & Integumentary Systems	7
IDPT 5024	Mind & Behavior	5
IDPT 5020	Traverse	1.5-2.5

IDPT 5031	Mentoring & Scholarly Activity	1
IPCP 5000	Interprofessional Collaborative Practice	1
<i>Summer Coursework</i>		
IDPT 5025	Endocrine & Metabolic Systems	7
IDPT 5026	Reproductive System & Life Cycle	7
IDPT 5020	Traverse	1.5-2.5
IDPT 5031	Mentoring & Scholarly Activity	1
Total Hours		81.5-86

Foothills Curriculum

Longitudinal Integrated Clerkships (LICs) are teaching models in which students participate in the comprehensive care of patients over time, engage in continuity relationships with clinical faculty, known as preceptors, and meet core clinical competencies across multiple disciplines simultaneously (Worley et al. 2006).

Alpine-Summit Curriculum

The Alpine and Summit Curriculum encompasses the 20 months following the Foothills before graduation. This phase starts with 13 weeks of Advanced Science Courses that integrate authentic advanced clinical experiences with advanced science learning. This is followed by USMLE-protected study and exam time. Following that, students will develop an individual learning plan designed to deepen their knowledge and skills as well-rounded physicians-in-training, choose and prepare for their residency and enhance their ability to positively transform the health of their future community. Individualized plans include:

- 4-week Required Acting Internship
- 2-week Critical Care Course or 4-week ICU Course
- 4-week Integrated Science Selective
- 28 weeks of additional coursework (including additional Acting Internships, Away Rotations, Research, Electives, and Longitudinal Courses)

At each major curricular transition, students participate in a one- to four-week Basecamp curriculum to help them complement and consolidate prior learning and prepare for the next phase of learning.

Longitudinal Curriculum

Mentored Scholarly Activity

The MSA project (<https://medschool.cuanschutz.edu/education/current-students/curriculum/longitudinal-curriculum/mentored-scholarly-activity/>) is a four-year requirement for all undergraduate medical students. The project culminates in a capstone presentation in Phase IV before graduation. The goal of the MSA curriculum is to foster self-directed, life-long learning throughout the medical student's career. The MSA requires students to identify and work with a mentor to complete their projects, which also prepares them for working with mentors in their careers and serving as mentors to others in the medical profession. Please note: students enrolled in the Research Track will complete their MSA requirement through their participation in the Research Track.

Rural Track

In rural medicine, you will be truly needed and appreciated. You can have a rich, varied, rewarding professional and personal lifestyle. From the plains to the mountains, our state offers a variety of opportunities for students to live and train. The Rural Program includes a robust clinical experience that provides future physicians with the knowledge, skills, and support from like-minded students and faculty to serve rural and underserved communities.

Students in the program complete their Foothills clinical core year in a rural Colorado community. To prepare for this experience, students are invited to participate in an orientation the summer before school starts. During the Plains preclinical curriculum, a variety of lectures, labs, and workshops are held several times a month that will help interpret and bring a rural focus to what students are learning in their regular courses. In the Alpine Ascent phase of the curriculum there will be additional opportunities for participation in rural-focused courses.

Similar to the larger CUSOM curriculum, students will participate in a longitudinal integrated clerkship (LIC) model during the Foothills curriculum. Students in the Rural Program spend the year at dispersed sites in one rural Colorado community or several neighboring towns. Each site typically has one or two learners, so our students have extensive opportunities for hands-on experiences and participation in procedures. Students receive considerable one-on-one teaching and mentorship and have an active role in patient care. Those who are self-directed, highly motivated, and community-oriented are best suited for the Rural Program.

Curriculum Reform/Student Learning Outcomes

Guiding Principles for Curricular Reform

Vision: Our graduates will be physician leaders capable of transforming the health of diverse communities.

Mission: Through a longitudinally integrated curriculum, we aim to educate physician leaders who are curious, life-long learners with a commitment to serve the profession, our patients, and society.

Values/Pillars: Leadership, Curiosity, Commitment

1. We want our student outcomes to be tightly linked to our curricular content and delivery; therefore, we aim for our new curriculum to be Outcomes-Based: Our curriculum content, structure, and instructional strategies should support the type of physicians we want to produce with assessments that enhance learning. New research in medical education and strategies for improved adult learning aims to inform curricular approaches, therefore we aim for our new curriculum to be Evidence-Based: Our curriculum content, structure, and instructional strategies should be based on sound educational theory when possible. When not possible, we will strive to add to the evidence base through rigorous program evaluation.
2. Current structures in clinical care and in teaching lead to fragmentation of relationships between students, teachers, and patients; we aim for our new curriculum to focus on a diversity of Longitudinal Relationships: Many of the desired attributes we hope students develop are learned by example. The program must bring students into contact with strong, positive role models who are clinicians, investigators, peers, patients, advocates, and community members.
3. The science of medicine is evolving at a rapid pace necessitating the integration of relevant scientific concepts throughout medical training and into practice, therefore we aim to enhance the integration of foundational and more complex scientific concepts: The scientific knowledge and principles relevant to clinical medicine need to be 'integrated and sequenced optimally' across all years of medical school. Advanced sciences should be explored later in the curriculum, in the context of patient care experiences.
4. Physician leaders of tomorrow need to be well-rounded while also developing unique areas of expertise, therefore our new curriculum will create opportunities for Individualization: Students will have a choice in their learning and time to pursue an area(s) of interest in-depth and to individualize their learning, especially as they advance toward graduation outcomes and choose careers paths.
5. In some cases, the complexity of the clinical care environment and pressures for efficient care have sidelined our learners further from the bedside, therefore we aim for our new curriculum to enhance authentic, patient-centered experiences as early as possible in the clinical and community environments: The environment needs to provide opportunities for students to demonstrate their ability to act with regard for others (e.g., involvement with patients or community, service experiences) and demonstrate progressive competency in these interactions.
6. In the face of exponentially expanding knowledge, rapidly changing health care, and evolving societal systems, we recognize the importance of vitality and well-being. Our curriculum will support student and faculty vitality through meaningful relationships, connection to purpose, and personal development that emphasizes sustainability and the importance of diversity, equity, and inclusion.
7. Given the rapid pace of evolution of the medical sciences, we recognize that we cannot teach our students everything during the four years of medical school, therefore we strive to create graduates with a Growth Mindset: Graduates must be equipped with skills for a lifetime of inquiry, critical thinking and ultimately, the ability to make informed, evidence-based decisions in the face of uncertainty.

Learning Theory in the Trek Curriculum

By Paige Romer, MA, MS2

(September 2021) During the first week of orientation, Trek students completed a session called Learning How to Learn Medicine, in which they discussed several key topics from learning theory and how those topics would be relevant to them in medical school.

The session covered the following concepts and presented concrete strategies for how to implement these best study practices within the Trek curriculum.

Different Types of Memory

Working memory is the memory system that is used when you are actively thinking about a topic or learning it for the first time. Recent research has shown that the average person can hold approximately four pieces of information or four chunks (more on this later) in their working memory. Long-term memory is where information is stored for later use. The process of moving information from short-term memory to long-term memory is called encoding. The process of moving information from long-term memory to short-term memory is called retrieval. For students, one of the most effective ways to strengthen long-term memory is retrieval practice or the process of recalling information out of long-term memory and into short-term memory by self-testing.

Chunking

Chunks are pieces of information that are bound by meaning or use. Examples of chunks that students will create in medical school are the glycolysis pathway, a pediatric cough differential diagnosis, blood flow patterns in the upper limb, and the process of suturing. Chunking is important because it allows us to increase our working memory capacity. By holding four chunks instead of four discrete pieces of information in the working memory, we can make new connections and develop a deeper understanding.

Learning Illusions

Learning illusions are activities that feel like learning but do not involve true encoding or retrieval. Examples of encoding are rereading notes multiple times, highlighting a textbook, or rewatching a video on the same topic multiple times. When we engage in these activities, our working

memory tricks us because it recognizes familiar information, but no encoding actually happens. In the Learning How to Learn Medicine session, students discussed strategies that could be used in place of learning illusions, including rewriting notes from memory rather than rereading them or making flashcards while watching a video to later be used for retrieval practice.

Interleaving

Interleaving is the process of switching between different topics as you study. Interleaving creates stronger neural connections and allows for less obvious, more creative connections to be made between topics. It ultimately leads to better and more durable understanding along with flexible thinking skills.

Spaced Repetition

Spaced repetition is the process of self-testing on material over increasing intervals of time, rather than cramming and learning all the information at once. Spaced repetition has been shown to be one of the most effective ways of beating the forgetting curve, which shows that roughly 50% of new information is forgotten within a day of learning it if no retrieval practice occurs.

In the Learning How to Learn Medicine session, students were asked to consider times in their lives that they had used each of the above learning theories in the process of acquiring a skill. They each walked away with a plan for how to incorporate these strategies into their study practices.

During the session, students were also able to see how these theories are already woven into the Trek curriculum. For example, the LIC (Longitudinal Integrated Clerkship) model involves both interleaving and spaced repetition by having students switch between different disciplines throughout the week and spreading their learning out over the space of the entire clinical year. Additionally, the Plains curriculum involves interleaving by integrating the clinical sciences and medical sciences throughout each block.

The incorporation of learning theory into the Trek curriculum design will provide students with the opportunity to build the skills that will allow them to be successful, curious, and joyful lifelong learners.

From the Desk of Shanta Zimmer, Senior Associate Dean for Education

Clinical Reasoning in the Plains Year of the Trek Curriculum

(November 2020) Love to think, talk, or teach about clinical reasoning? Please read on! The CUSOM is planning to develop new educational materials, teaching methods, and assessment tools to explicitly introduce clinical reasoning concepts in the TREK curriculum. Developing cohesion of goals, learning objectives, and assessments related to clinical reasoning across the Plains, Foothills, and Alpine Ascent phases of the curriculum will be important and exciting educational work to be done! If you are interested in helping develop new educational materials in the Plains or collaborating on existing or anticipated teaching activities and assessments across the TREK curriculum, please reach out to todd.guth@CUAnschutz.edu.

Clinical reasoning has been defined in a general sense as “the thinking and decision-making processes associated with clinical practice” or even more simply “diagnostic problem solving” (Higgs and Jones, 2000 and Elstein, 1995). Clinical reasoning means different things to different individuals, but for the purposes of the TREK curriculum, we settled on a definition of clinical reasoning as the ability of students “to sort through a cluster of features presented by a patient and accurately assign a diagnostic label, with the development of an appropriate treatment strategy being the end goal” (Eva, 2005). Clinical reasoning conceptualized in this way can be deconstructed into seven discreet domains that allow for the alignment of teaching materials and assessment tools in the new TREK curriculum.

In the Plains, early clinical reasoning sessions will focus on introducing the vocabulary and fundamental concepts. Diagnostic schemas (flowcharts of diagnostic possibilities centered around a chief concern) of common conditions framed around prototypical clinical cases discussed in basic medical science coursework will help link basic science knowledge to the clinical reasoning, communication, and physical examination skills taught in the clinical skills course. Early case-based clinical reasoning sessions will highlight aspects of information gathering from the history and physical examination as well as aspects of hypothesis generation and problem representation. Consistent practice with oral presentations and medical documentation will be one way that the development of a differential diagnosis, a leading diagnosis, diagnostic justifications, and management and treatment plans will be taught in the clinical reasoning sessions.

Students will be assessed using a combination of workplace-based assessments in their preceptorship, non-workplace-based assessments, and objective structured clinical examinations (OSCE) during the Plains year. The assessment data will be organized around the seven domains of clinical reasoning and sample broadly across a variety of clinical content areas. Ideally, this student clinical reasoning performance data in the Plains can be linked to other data across clinical experiences in the Foothills and Alpine Ascent to provide a programmatic understanding of clinical reasoning performance in the TREK curriculum. Again, if you are interested in helping develop new educational materials in the Plains or collaborating on existing or anticipated teaching activities and assessments across the TREK curriculum, please reach out to todd.guth@CUAnschutz.edu.

MD candidates may choose to pursue careers other than clinical medicine for a variety of personal and professional reasons, and they may do so at different times in their training or careers. Alternative paths might occur directly out of medical school, out of internship once a license is earned, after residency, or after years of practicing clinical medicine. At any of these stages, a dual degree may be useful, including Ph.D., MBA, JD, MPH, MHA, etc.

The School of Medicine currently has four formal joint or dual degree programs, the Medical Scientist Training Program (MSTP), Master of Public Health (MPH), Master of Science in Bioengineering (MS), and the Masters in Business Administration (MBA) program.

MD/Ph.D Dual Degree

The MSTP program offers a combined MD/Ph.D. degree and is a rigorous multi-year program in which students complete the basic science curriculum and then enter graduate school to complete basic science research leading to a doctoral thesis before returning to complete the clinical curriculum. For MSTP Program (http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/mstp/Pages/MSTP.aspx) details

MD/MS in Bioengineering

The MD/MS in Bioengineering program enables current MD candidates to complete MS requirements in bioengineering. A motivated student can complete these requirements in three semesters, usually taking a year off between Phases III & IV (May to May). Additional time may be required depending on the student's course choices and research project. All students will be evaluated in a final oral defense examination that includes an open research seminar. For more information about Dual Bioengineering Degrees (<http://www.ucdenver.edu/academics/colleges/Engineering/Programs/bioengineering/GraduateProgram/MasterofScience/Pages/MasterofScience.aspx>).

MD/MPH Dual Degree

This dual degree is offered by the University of Colorado School of Medicine and the Colorado School of Public Health on the CU Anschutz Medical Campus. In addition to receiving a Doctor of Medicine (MD) degree, students concurrently receive the Master of Public Health (MPH) degree in a concentration of their choice: Applied Biostatistics; Community & Behavioral Health; Environmental & Occupational Health; Epidemiology; Health Systems, Management & Policy; Maternal and Child Health; or a custom concentration. **Only students already in or accepted into the University of Colorado MD program are eligible to apply.**

To learn more about this dual degree, please click here (p. 141) to view the full information within the Colorado School of Public Health portion of the academic catalog.

MBA in Healthcare Administration

The School of Medicine, working with the University of Colorado Denver's downtown campus, also provides the opportunity for students to earn a Master of Business Administration (MBA) degree in one calendar year. Students enter this program after completing Phases I, II, and III. Students must apply to the MBA program separately; however, the program will waive the requirement for the GMAT and use the student's MCAT scores. This program provides an excellent opportunity for medical students who wish to understand the business of medicine and to develop the skills necessary to work in health care administration. For additional details on the MBA in Healthcare Administration (<https://business.ucdenver.edu/mba/health-administration-mba/>)

MD/MS in Aerospace Engineering Medicine (Bioastronautics)

The University of Colorado School of Medicine (SOM) and Smead Department of Aerospace Engineering Sciences on the Boulder campus have developed a dual degree program in Medicine and Aerospace Engineering with an emphasis in Bioastronautics that will award both MD and MS degrees after completion of a 5-year integrated curriculum. The interdisciplinary dual M.D.-M.S. degree program incorporates experts in medicine, engineering, spaceflight, education, analog simulation, and remote environment expedition support. The program aims to support clinical, educational, research, and design projects intended to serve the most extreme environments on and off Earth. The goal of this program is to educate the next generation of leaders in human spaceflight.

This first-of-its-kind program will serve a growing need within the larger human spaceflight community for physicians with engineering backgrounds. We plan to create a cohort of students integrated into the space medicine community through a variety of opportunities including research, conferences, and mentorship. Students graduating from the program will be ideally positioned to, for example, pursue further training as physician flight surgeons, serve as medical officers for a human spaceflight company, or to conduct research or develop medical technologies required for long-duration exploration missions. By earning combined degrees in medicine and engineering, students will have a unique perspective and greater capabilities to contribute to this rapidly advancing field.

For additional details on the MS in Space Medicine (<https://medschool.cuanschutz.edu/spacemedicine/>)

Student Policies and Procedures

Student Policies (all Phases)

Policies, Procedures, and Guidelines (<https://medschool.cuanschutz.edu/education/current-students/support-for-students/policies-procedures-guidelines/>)

Core Clerkship/Foothills

Foothills Guidebook, Class of 2026 ([https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/ay-23-24-foothills-guidebook-final-23-24-\(1\).pdf?sfvrsn=2b2f40b4_1/ay-23-24-foothills-guidebook-final-23-24-\(1\).pdf](https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/ay-23-24-foothills-guidebook-final-23-24-(1).pdf?sfvrsn=2b2f40b4_1/ay-23-24-foothills-guidebook-final-23-24-(1).pdf))

Foothills Guidebook, Class of 2027 (http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/school-medicine/doctor-medicine-md/AY_24-25_Foothills_Guidebook_FINAL.pdf)

Post-Clerkship/Alpine-Summit

Post-Clerkship Guidebook – Class of 2025 (https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/2025-p4-guidebook_aug-2023.pdf?sfvrsn=4d4b3abb_0)

Post-Clerkship Guidebook - Class of 2026 (<http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/school-medicine/doctor-medicine-md/class-of-2026-alpine-summit-guidebook-new.pdf>)

Other

Transfer Student Policy (https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/transferstudentpolicy20.pdf?sfvrsn=5828a9b9_2)

Professionalism

The CU Anschutz Office of Professional Excellence (<https://www.cuanschutz.edu/offices/professionalism/#:~:text=The%20CU%20Anschutz%20Office%20of,on%20the%20Anschutz%20Medical%20Campus>) provides a private resource to obtain a fair and equitable process and resolution for all matters pertaining to professionalism concerns regarding students, residents, fellows, staff members, and faculty in any school or college on the Anschutz Medical Campus.

Teacher Learner Agreement

This Teacher Learner Agreement (https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/teacherlearneragreement-18-19.pdf?sfvrsn=3217c0b9_0) serves both as a pledge and a reminder to teachers and students that their conduct in fulfilling their mutual obligations is the medium through which the profession perpetuates its ethical values.

Risk Management

University Risk Management (https://www.cu.edu/risk/?_ga=2.146526452.1555130146.1594649193-320053204.1594649193) promotes a safe learning and working environment for the University of Colorado community.

Student Advocacy

As the Associate Dean for Student Advocacy, I help and advise medical and physical therapy students with any and all of their concerns. My interactions with students are entirely confidential and strictly “Off-of-the-Record”. I have been in this position for nearly two decades and have gained considerable experience with many issues. At your request, I can serve as your advocate at promotions and honor council deliberations and various interactions with faculty. I am connected with and can make referrals to a cadre of other confidential professionals who are skilled in addressing academic and many other issues. It is always better if you seek my consultation earlier rather than later. My contact information is listed below:

John E. Repine, MD
 Waring Professor of Medicine and Pediatrics
 Director Webb-Waring Center
 Associate Dean for Student Advocacy
 303-724-4788 (office 8118 in RC-1)
 303-917-4257 (cell)
John.Repine@cuanschutz.edu (john.repine@ucdenver.edu)

Disability, Travel, and Wellness Resources

As medical students, you have access to several resources from the AMA:

- Med-Plus Advantage Disability Income Coverage (<https://disabilityinsuranceagency.com/disability-insurance-quote/?msclkid=3a51269ea9b215bbae7c46d27895b73a>)
- Global Travel Service (https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/global-travel-20.pdf?sfvrsn=b58cdeb9_0)
- Stress and Wellness Program (https://medschool.cuanschutz.edu/docs/librariesprovider31/education-docs/ome/stress-and-wellness-20.pdf?sfvrsn=eab7deb9_0)

In addition to the pdfs attached above you can get more information from the Med Plus Advantage site (<http://www.medplusadvantage.com/>) and enter the code 644189 into the “My Med Plus Advantage” portion to access their certificates of coverage as well as membership cards and services. Also, you can contact your AMA Insurance Agency representative:

Brian Farmer
 National Account Executive, Brokerage Marketing
 AMA Insurance Agency, Inc.
 515 North State Street
 Chicago, IL 60654
 T: 312-464-5460
 M: 317-432-7656
 email: brian.farmer@amainsure.com (brian.farmer@amainsure.com)

Document Request

This online request form (https://ucdenverdata.formstack.com/forms/som_document_request/) can be used by former or current University of Colorado School of Medicine MD students. Requests may take up to 1 week after submission for processing. Upon completion, the Student Data Records Manager will send an email notification of completion.

Documents available:

- MSPE/ Dean's Letter
- Medical Education Verification
- True Copy of Diploma
- State Licensure (Form Only)
- State Licensure & Official Transcript

If you only need an official transcript (with no accompanying form or letter), please order the transcript from the Office of the University Registrar.

Wellness

Campus Health Center (<https://www.ucdenver.edu/anschutz/campushealth/>) - The clinic accepts most health insurance, offers same or next-day appointments, and walk-ins are welcome. Example of services: Immunizations, minor skin condition, minor eye care, minor sprains, routine lab testing (strep, flu, mono) nebulizer treatments, suture removal, ear infections, colds and flu, well-woman exams, urinary tract infections. Blood glucose and blood pressure checks are also available. The clinic also has a well-staffed mental health clinic with experienced practitioners.

Mental Health Services (<https://www.ucdenver.edu/life/services/student-health/mental-wellness/>) - Provides comprehensive and confidential mental health services for all students (including postdoctoral fellows and graduate students) enrolled in the schools located at the Anschutz Medical Campus (Medical, Dental, Nursing, Pharmacy, Public Health, Physician Assistant, Physical Therapy, postdoctoral programs, graduate school, etc.). Initial appointments are scheduled relatively quickly, often within the same week. Options for ongoing care include receiving treatment from the AMC Student Mental Health clinicians, the UCH Outpatient Psychiatry Clinic, and a community network of providers, depending on insurance coverage.

Colorado Physician Health Program (CPHP) (<https://cphp.org/>) - CPHP can assist students, physicians, residents who may have health problems, which, if left untreated, could adversely affect their ability to practice medicine safely. They can assist with Depression, Stress, Relationship Issues, ADHD, Chronic Pain, Emotional Problems, Bipolar, Career Issues, Substance Abuse, Professional Boundary Issues, Sleep disorders, Psychiatric Issues, etc. There is no charge to students for individual CPHP appointments CPHP provides: Evaluation and Assessment, Treatment Referral and Monitoring, Urine Drug Screen, Family services

Advocacy and Support Center (<https://www.ucdenver.edu/anschutz/studentresources/student-assistance/student-resources/Pages/CU-Anschutz-Advocacy-and-Support-Center.aspx>) - The CU Anschutz Advocacy and Support Center is a campus resource providing support to students, faculty, and staff who've experienced sexual assault or interpersonal violence at home or on campus in an education/clinical environment or a community/public setting.

Campus Resources

- Academic Calendars (<https://www.ucdenver.edu/anschutz/studentresources/Registrar/CourseListings/Pages/AcademicCalendar.aspx>)
- Bursar's Office – Student Billing (<https://www.ucdenver.edu/anschutz/studentresources/StudentBilling/Pages/default.aspx>)
- Campus Security/Police (<https://www.cuanschutz.edu/police/>)
- CARE Team (Campus Assessment, Response & Evaluation Team) (<https://www.ucdenver.edu/student/health-wellness/care-team/>)
- Commuting to Campus (<https://www.ucdenver.edu/anschutz/studentresources/student-assistance/student-resources/Pages/Parking-Transportation.aspx>)
- Copy and Fax Machines (<https://www.ucdenver.edu/anschutz/studentresources/student-assistance/academic-resources/Pages/Copy-Machines.aspx>)
- Dental Insurance (<https://www.ucdenver.edu/life/services/student-health/dental/Pages/default.aspx>)
- Disability Resources and Services (<https://www.ucdenver.edu/anschutz/studentresources/student-assistance/academic-resources/Pages/Disability-Resources-and-Services.aspx>)

- Financial Aid (<https://www.ucdenver.edu/anschutz/studentresources/FASO/Pages/FASO.aspx>)
- Lactation Rooms Anschutz and Denver Campuses (<https://www.cu.edu/doc/copy-lactation-spaces-51018-updatespdf-1/>)
- Library (<https://library.cuanschutz.edu/>)
- Lockers Information Email (tss.amcstudentlockers@ucdenver.edu)
- Lost and Found on Anschutz Medical Campus (<https://www.cuanschutz.edu/police/services/lost-and-found/>)
- Needlesticks and Exposures Report (<https://mobile.ventivtechnology.com/go/0ad06ef8280ea36e48ddcf5a3f0b59f2/>)
- Office of Equity (<http://equity.ucdenver.edu/>)
- Office of Inclusion and Outreach (<https://www.ucdenver.edu/about/departments/odi/oio/Pages/default.aspx>)
- Office of Student Campus Services, AMC (<https://www.ucdenver.edu/anschutz/studentresources/student-assistance/Pages/default2.aspx>)
- Parking and Transportation (<https://www.ucdenver.edu/about/departments/FacilitiesManagement/ParkingMaps/Parking/Pages/Parking.aspx>)
- Printing Services (<https://www.ucdenver.edu/about/departments/printing/Pages/PrintingServices.aspx>)
- Student Conduct and Community Standards (https://www.ucdenver.edu/life/services/standards/Pages/default.aspx%22%20/t%20%22_blank/)
- Student Insurance (<https://www.ucdenver.edu/life/services/student-health/insurance/Pages/default.aspx>)
- Student Housing (<https://www.ucdenver.edu/anschutz/studentresources/student-assistance/housing/Pages/home.aspx>)
- Veteran and Military Student Services (<https://www.ucdenver.edu/life/services/Veteran/Pages/vmsshome.aspx>)
- Wellness Center (<https://anschutzwellness.com/>)
- Writing Center (<http://writingcenter.ucdenver.edu/>)

Faculty

To view the full Faculty Directory for the University of Colorado School of Medicine, please visit this site (<https://som.ucdenver.edu/Profiles/>).

Courses

ANES 6038 - Clinical Anesthesiology IV (5.5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: GRD

Typically Offered: Fall.

ANES 8000 - Clinical Anesthesiology (4-16 Credits)

4 wks. Students will work one-on-one with anesthesia faculty and residents to gain further practical experience in all aspects of peri-operative care; improving skills gained in the third year and developing a deeper understanding of the breadth of anesthetic practice.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

ANES 8001 - Surgery Intensive Care AI (8 Credits)

The goal is to prepare MSIV's for internship by having them manage 'their' patients, present on multidisciplinary rounds, call consults, assist/performing procedures, discuss clinical topics & receive didactics. Honors requires clinical excellence and a written paper.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

ANES 8002 - Anesthesia Subspecialties (4-8 Credits)

4 wks. Max: 4. Course exposes students to subspecialty areas in Anesthesiology. Students will attain additional experience in selected areas of anesthetic practice. Options include Acute and Chronic Pain, L & D, Cardiothoracics, Neurosurgery, Transplants and Pre-Anesthesia Testing. Prereq: ANES 8000.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

ANES 8100 - ANES Elective Away (4-8 Credits)

This Anesthesiology elective will be held at a site in Colorado, another state or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

ANES 8600 - Research in Anesthesiology (4-16 Credits)

2-8 wks. Prereq: Special permission and individual arrangements required in advance. The student must receive prior approval from the Associate Dean for Student Affairs. This course allows students to complete a research project in Anesthesiology.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Spring.

ANES 8630 - ANES Research Elective Away (4-16 Credits)

This Anesthesiology research elective will be held at a site in Colorado or another state. Course is only offered 2, 4 or 8 weeks

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

DERM 5001 - Łód Navajo IHS Spring Break Derm Elective (4 Credits)

This course gives the first year medical student a weeklong immersive experience with the dermatology specialty and allows a unique opportunity for the student to learn about the barriers and facilitators to providing specialty care in a rural healthcare system on an American Indian reservation. It will teach social determinants of health, resource management, distance specialty care, and collaboration with other specialties.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DERM 8000 - Dermatology Clinical Elective (4 Credits)

This course is designed to provide a broad overview of medical, surgical and pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of common skin disease, and procedural dermatology including skin biopsies and cryosurgery.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

DERM 8001 - Advanced Dermatology (8 Credits)

This course is designed to provide a broad overview of medical, surgical and pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of common skin disease, and procedural dermatology including skin biopsies and cryosurgery. Requirements: Instructor Consent

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

DERM 8005 - Dermatology Elective Fort Collins Branch (4 Credits)

This course aims to expose students to a breadth of dermatology in various settings (pediatrics, adult medical, surgical, and dermatopathology).

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DERM 8033 - Clinical Pediatric Dermatology (4 Credits)

This course is designed to provide a broad overview of pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of pediatric skin disease, and pediatric procedural dermatology including skin biopsies, laser and cryosurgery.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

DERM 8300 - DERM Elective Away (4-8 Credits)

This elective will be held at a site in Colorado or another state. International electives not allowed.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

DERM 8600 - Research in Dermatology (4-16 Credits)

4,6, 8 wks. Max: 5. Research elective allows the student to design and implement a basic science, clinical or epidemiologic research project relevant to dermatology or cutaneous biology. Students are expected in research seminars and to present their results. Prereq: Course Director approval required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

DERM 8630 - DERM Research Away (4-16 Credits)

This research elective will be held at a site in Colorado or another state. International electives not allowed.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

EMED 6630 - Emergency Medicine in South Africa (8 Credits)

This is a 6 week clinical experience, students work in the Emergency Department of a public hospital in Cape Town, South Africa and contribute to ongoing research projects done in conjunction with Stellenbosch University. Prerequisite: Successful completion of EMED 6629. Course Restrictions: Course Director Approval.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

EMED 8004 - Emergency Med Univ Hosp (4-8 Credits)

2-4 wks. Max:4. Students are primary caregivers in a level II trauma center with a variety of patients and individual teaching time with attendings and senior residents. An excellent experience for students seeking instruction in the assessment and management of the undifferentiated patient.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

EMED 8005 - Emergency Medicine DHMC (8 Credits)

This rotation is designed for the senior medical student who may be applying to primary care or other specialties who wants to gain exposure to emergency medicine.

Grading Basis: Medical School HP

Typically Offered: Spring.

EMED 8006 - Emergency Medicine Career (8 Credits)

4 wks. Max:4. Student is primary caregiver for acutely ill/injured patients at DHMC Emergency Department, supervised by Emergency Medicine Staff. Daily lectures in traumatic/medical emergencies, conferences, "board rounds". Orientation, first day, 7:30 a.m. Admin Conf room.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Summer.

EMED 8007 - Emergency Medicine Career Elective – Anschutz Campus (8 Credits)

Students will rotate through Emergency Departments at University Hospital and Children's Hospital Colorado to gain education through a broad range of Emergency Medicine experiences. This course complements and does not replace 8006 and is offered during the summer of 2020. Emergency Medicine-Bound Senior Medical Students, Course Director Approval.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Summer.

EMED 8011 - EMED URM Career Elective (8 Credits)

Purpose: Guide and support medical students from URM groups who have an interest in pursuing EM as a career. This is an advanced clinical rotation at DHMC.

Grading Basis: Medical School HP

Typically Offered: Fall, Summer.

EMED 8017 - Peds Emergency DHMC (4-8 Credits)

2 or 4 wks. Max: 2. Students will serve as the primary caregivers in the Denver Emergency Center for Children at Denver Health, a pediatric emergency department treating 30,000 children annually. Students will be fully integrated into the team, treating children with acute and urgent illnesses.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

EMED 8024 - Clinical Toxicology (4-8 Credits)

4 wks. Max:2. Provides an introduction to medical toxicology at the RMPCD. Student will participate in clinical service including telephone consultation, fundamentals of environmental toxicology, public health concerns, and occupational toxicology. Each student will make one presentation toward the end of their rotation.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

EMED 8030 - Rural Emergency Medicine (4-8 Credits)

A continuation of the Emergency Care Clerkship, currently a two-week required component of Phase III study. This course is for students who seek more in-depth knowledge and additional clinical skills, relating to Emergency Care in the rural setting.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 84.

Typically Offered: Fall, Spring, Summer.

EMED 8032 - Emergency Medical Services (4 Credits)

The Emergency Medical Services (EMS) elective will expose students to the clinical care provided by ambulance services in the Northern Colorado region. Students will also have participation in the role of an EMS physician and the complex framework that support the EMS system. Learners will participate in clinical rides with paramedics in the 911 response system, interfacility transport and secure vehicle transport systems. They will also participate in the meeting calendar of the medical directors. This will build understanding of EMS, care limitations, operational realities and implementation of quality improvement projects using evidence-based medicine.

Grading Basis: Pass Fail with IP

EMED 8100 - EMED Elective Away (4-8 Credits)

This Emergency Medicine elective will be held at a site in Colorado, another state or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

EMED 8600 - Research EMED (4-24 Credits)

Designed for students interested in Emergency Medicine research. Tailored research experiences in the Denver area can be established in a variety of settings. Speak with course director to design this elective. Offered 4, 8, or 12 weeks. Mex enroll: 4.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

EMED 8630 - EMED Research Away (4-8 Credits)

This Emergency Medicine research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

FMMD 5010 - Rural Program Seminars and Workshops (1 Credit)

Course is open to & required for all students in the Rural Program. Sessions are focused on knowledge & skills that prepare Rural Program students for the rural longitudinal integrated clerkship & span these general domains: Clinical knowledge, clinical skills, community engagement & public health, professional ethics & healthcare business and finance.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 5040 - Family Medicine Survey (1 Credit)

Students will attend 12 weekly 1 hour sessions on a variety of foundational topics in primary care including family planning and contraceptive options with an accompanying skills workshop in contraceptive procedures, sports medicine in primary care with skills workshop in joint injections, addiction medicine and behavioral health in primary care, family centered maternity care with accompanying skills workshop in OB ultrasound, common dermatologic conditions in primary care with skills workshop in biopsy techniques, health equity and delivery of care to underserved populations. Students will have the opportunity to explore various models of primary care delivery and fellowship opportunities in family medicine.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

FMMD 8002 - UC Health Fam Med AI (8 Credits)

Offered all sections. 4 wks. Max:1. Experience CU Family Medicine! Students will be members of the inpatient service team at the Anschutz Inpatient Pavilion, take call, and will spend 2 half days per week at the A.F. Williams Family Medicine Center (outpatient clinic).

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8007 - Out-Patient Family Med (8 Credits)

Offered all sections. 4 wks. Max: 1. Course is an outpatient family medicine at A.F. Williams Family Medicine Center and Denver Health's Lowry Family Medicine Clinic. Multidisciplinary faculty including pharmacologists, behavioral scientist, and experienced family physicians and residents caring for a diverse group of patients.

Grading Basis: Medical School HP

FMMD 8012 - Oral Health: Acute Dental (4 Credits)

2 wks. Max:4. The focus of this elective is on recognition, assessment, triage and treatment of acute dental problems such as pain, infection and trauma. Students interested in rural or underserved primary care practice should take this elective. Prereq: 4th year medical student. Restrictions: This elective is offered only at selected times, students must communicate with Course Director about what times are available. It will not be offered in June, July, August, or December.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 8017 - Northern CO Fam Med/OB AI (8 Credits)

Students work with family medicine faculty & residents while acting as the primary provider for several patients daily. Students see patients & assist team with daily tasks, while participating in the care of hospitalized adults, patients in OB triage, labor & delivery, postpartum, & normal newborn. 2wks inpt medicine, 2wks OB/Newborn.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8018 - St. Joseph-Bruner FMC AI (8 Credits)

At the SJH FM Residency, the sub-intern will engage in both inpatient and outpatient clinical care. They will be an integral part of the Family Medicine Service during their inpatient weeks. The outpatient time will occur in the residency clinic, serving an urban, under-served patient population in Denver and surrounding areas.

Grading Basis: Medical School HP

Typically Offered: Spring, Summer.

FMMD 8019 - St Anthony Nth Fam Med AI (8 Credits)

Students will engage in outpatient and inpatient care during this sub-internship at a Colorado family medicine residency. You will be supervised by the senior resident or faculty attending while on this rotation. This rotation is split into Inpatient, OB if desired, and outpatient clinics.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8020 - St. Mary's Family Med AI (8 Credits)

Students will practice as a PGY-1 on this Sub-I. The schedule includes 2 wks admitting and rounding on the teaching service, 1 wk of night float with a focus on independence, cross-cover, and evening ICU & Peds rounds, and 1 wk of the family med clinic, a fully-integrated PCMH. Faculty attendings give individual attention to learning.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8021 - Southern CO Family Med AI (8 Credits)

During the Sub-I at the Southern CO Family Medicine residency, students will work with 2 interns and 2 upper level residents on the inpatient medicine service, with some opportunities to cross-cover on pediatrics & obstetrics. Several half-days per week, the student will be able to attend High-Risk OB and specialty outpatient clinics.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8022 - Swedish Family Medicine AI (8 Credits)

Students will engage in outpatient and inpatient care during this sub-internship at the Swedish family medicine residency. Students will work with residents and faculty in the out-patient clinic, on the Inpatient Service, in the nursing home and at the school-based clinic.

Grading Basis: Medical School HP

Typically Offered: Fall, Summer.

FMMD 8023 - Fort Collins Family Med AI (8 Credits)

We provide students with exposure to full scope family medicine. Our Sub-I includes 3 weeks of inpatient medicine, seeing patients on the medicine, peds and Ob services. There is 1 week of outpatient, where Sub-Is will see adults, children, and prenatal patients; and do nursing home visits, procedures, and other specialty care clinics.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8024 - NCFM – Wray Med/Ob AI (8 Credits)

Students work with family medicine faculty & residents while acting as the primary provider for several patients daily. Students see patients & assist team, while longitudinally participating in the care of patients between the ED, hospital, labor & delivery, and clinic. Requires commitment to participating in care over multiple settings. Pre-requisite: Open to students interested in pursuing a career in family medicine with specific interest in full-spectrum and rural family medicine.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8025 - NCFM – Sterling Med/OB AI (8 Credits)

Students work with family medicine faculty & residents while acting as the primary provider for several patients daily. Students see patients & assist team, while longitudinally participating in the care of patients between the ED, hospital, labor & delivery, and clinic. Requires commitment to participating in care over multiple settings. Requisite: Open to students interested in pursuing a career in family medicine with specific interest in full-spectrum and rural family medicine.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8030 - Outpatient Family Medicine, Denver Health Lowry (8 Credits)

Full spectrum outpatient family medicine. Emphasis in immigrant/refugee health and care for marginalized communities. FQHC with wrap-around services: integrated BH, clinical pharmacy, WIC, dental, family planning, etc. Special opportunities include refugee clinic, MAT, transgender care, procedures/vasectomy, sports medicine.

Grading Basis: Medical School HP

Typically Offered: Spring.

FMMD 8031 - Rural Health Policy and Advocacy Elective (4-8 Credits)

Students who have done their core clinical clerkships in a rural area will identify a need or group of needs in a rural community, and complete a policy advocacy project to address this need. Prerequisite: Only students who have successfully completed the rural LIC are eligible for this elective.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

FMMD 8032 - Rural Clinical Elective (4-8 Credits)

In this course, the student will participate in the care of patients in a rural setting. Students will work together with the course directors to identify preceptor(s) for this course. Preceptors will be from a variety of specialties that are available in rural areas. Prerequisite: Open to all students who have successfully completed core clinical clerkships.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

FMMD 8033 - Inpatient Family Medicine Elective (8 Credits)

Students will complete a 4 week elective and function as a team member on the Family Medicine Inpatient service at Denver Health Hospital. During this elective, students will have the opportunity to function at the level of an acting intern to provide inpatient care to Family Medicine patients.

Depending on student interest, there may be opportunities to spend time on the FM OB service at Denver Health, participating in the care of patients on labor and delivery, as well as rounding on newborn infants and providing postpartum care. Students will work directly with University of Colorado Family Medicine residents and Attendings.

Grading Basis: Medical School HP

Typically Offered: Spring, Summer.

FMMD 8034 - Rural Program Teaching Elective (2 Credits)

In this course, upper class Rural Program students will serve as Teaching Assistants (TAs) for the RP Foothills elective which occurs on Wednesdays from 10am-noon. TAs will assist with building the Foothills schedule, assist with hands-on workshops, and lead/facilitate at least one session for the 1st year students. Prerequisite: only open to students in CU School of Medicine's Rural Program

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 8035 - Intro Primary Care Sports Med (1-12 Credits)

The primary goal of this elective is to increase student exposure to and knowledge of the field of Primary Care Sports Medicine as well as various ways that Family Medicine physicians practice in the community and engage with their community with regards to fitness and athletics. A secondary goal of this elective is to start to build a foundation of knowledge regarding musculoskeletal medicine and medical care of active individuals. There will also be a focus on learning about injury prevention. This experience provides students with longitudinal mentorship in the case that they may be interested in a career in Sports Medicine and/or Primary Care. In order to increase exposure to the field of Primary Care Sports Medicine, there may be an opportunity for community based athletic coverage with faculty in the Division of Primary Care Sports Medicine.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 8036 - Activism, Reflective Transformation, Integrative Medicine, and Reproductive Justice (4 Credits)

This is a course through AMSA, that is in need of a medical school host sponsor institution. For many years, HEART-IM has taken place at the Quaker Center in Ben Lomond, California, where students spend the month in a cooperative living and learning environment, cooking and cleaning together, teaching and learning from each other. The Humanistic Elective in Activism, Reflective Transformation, and Integrative Medicine (HEART-IM) provides up to twenty-five fourth-year medical students with a unique and rewarding way to enrich their medical school careers and prepare for their future work as healer-physicians. Specific sessions will be focused on integrative medicine, reproductive healthcare (including abortion care and family planning) and the Reproductive Justice movement, cultural somatics, intentional community building, reflective transformation including meditative practices, and personal growth skills such as communication and intention. The experience is designed to cultivate each participant's vision of what it means to be a healer and support a plan for maintaining that vision throughout residency and beyond. For full description: <https://www.amsa.org/learn/heart-im>

Grading Basis: Pass/Fail

FMMD 8100 - FMMD Elective Away (4-8 Credits)

This Family Medicine elective will be held at a site in Colorado or another state. Students must obtain departmental approval one month prior to the start. 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

FMMD 8600 - Research in FMMD (4-24 Credits)

Students may participate in scholarly work directed by specific Family Medicine faculty members including practice-based research, curriculum development, patient education projects, and other scholarly activities. A DFM, MSA or research mentor must supervise and are responsible for evaluations.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

IDPT 5007 - Food Systems & Health (1 Credit)

Students participating in the Food Systems & Health Elective will explore the complex intersection of food systems and whole-person health through an interdisciplinary lens. The course emphasizes clinical and community health principles and provides students interactive opportunities to connect, discuss, and develop communication and advocacy skills.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5010 - First Course (1 Credit)

This immersive course provides students with basic tools needed to begin medical school with confidence and success. It will encourage curious, life-long learning, foster commitment to serve the profession, our patients & society, and begin the development of physician leaders capable of transforming the health of diverse communities.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5012 - Introduction to Global Health Research (1 Credit)

This seminar series is open to medical students and CHA/PA students in the Global Health Track. Topics include pre-travel health and safety considerations, ethical issues in global health, human rights and health, as well as research and philosophical tools for culturally appropriate care in a sustainable fashion. The class is required of Global Health Track Students. The University of Colorado requires that all Medical Students planning a global health project for their MSA be in the global health track and participate in this course.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5013 - Clinical Medical Spanish I (FCB) (1 Credit)

Course seeks to increase FCB 1st yr Med student comfort level interacting with Spanish-speaking patients. It is intended to be a precursor to clinical or community settings with Spanish-speaking patients. Hope to introduce students to the work done at CSU satellite campus in Todos Santos.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5014 - Narrative Medicine: Digital Stories and Community Engagement (1-2 Credits)

After introduction to digital storytelling basics from experts, learners will create their own stories to practice the skills of making a narrative video & appreciate & honor the vulnerability inherent in sharing a personal story.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5016 - Foundational Principles (9 Credits)

Introductory science content is encapsulated into a solid foundation upon which to construct more complex medical sciences knowledge while advancing students' professional competencies. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5017 - Hematologic & Lymphatic Systems (5 Credits)

This course explores basic science and clinical concepts related to normal physiology and disease states of the hematologic and lymphatic systems. Emphasis is on knowledge application. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5018 - Gastrointestinal System (7 Credits)

Clinical and basic science topics related to the normal function and diseases of the gastrointestinal tract and accessory organs will be merged with an overview of nutrient metabolism. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5019 - Pulmonary & Cardiovascular Systems (10 Credits)

Fundamentals of physiology, pharmacology, immunology, and anatomy will dovetail into the pathophysiology of pulmonary and cardiovascular diseases to facilitate diagnosis and treatment. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5020 - Traverse (1-2.5 Credits)

Traverse is a longitudinal experience including 5 dedicated weeks, during which students will complete comprehensive assessments of their clinical skills and medical knowledge. Longitudinal activities, such as direct patient care with preceptors, will support students' professional growth and development. Students will also be introduced to and prepare for the longitudinal integrated clerkships.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

IDPT 5021 - Renal & Urinary Systems (5 Credits)

This course encompasses normal physiology, histology and anatomy as well as the pathophysiological dysfunction and pharmacology of the renal & urinary systems. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5022 - Nervous System (8 Credits)

A foundational, interdisciplinary approach to nervous system structure and function in health and disease will include neuroanatomy, pathophysiology, and pharmacology, among others. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5023 - Musculoskeletal & Integumentary Systems (7 Credits)

This interdisciplinary course incorporates the anatomy, physiology and histology of skin, muscle, bone, peripheral nerves, cartilage, and ligaments with associated clinical conditions. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5024 - Mind & Behavior (5 Credits)

Students will explore the biological, developmental, environmental, and psychological processes underlying human behavior, cognition, and emotions so they can care for persons with mental illness. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5025 - Endocrine & Metabolic Systems (7 Credits)

Biochemistry, pathology, physiology, immunology, and pharmacology are combined with the clinical approach to diagnosis and treatment of disorders of the endocrine system. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 5026 - Reproductive System & Life Cycle (7 Credits)

The development, physiology, pathology, and pharmacology of the male and female reproductive systems are addressed along with changes in health and wellness across the lifespan. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 5027 - IHI Open School Basic Certificate (1 Credit)

Earning the IHI Open School Basic Certificate in Quality and Safety boosts your knowledge and skills — and proves to educators and residencies you are serious about changing health care for the better. To receive the Certificate, you must complete the following 13 Open School courses: QI 101 – Q105, PS 101 – 105, TA 101, PFC 101, and L 101.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5028 - One Health I (FCB) (1 Credit)

One Health is a transdisciplinary concept that focuses on issues at the intersection of Human, Environmental, and Animal Health. The One Health Practicum will bring together groups of interdisciplinary undergraduate, graduate, and professional students to evaluate real-world One Health challenges in the City of Fort Collins.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 5029 - Clinical Medical Spanish (1 Credit)

Students will learn and practice the language skills they need to communicate effectively with their Spanish speaking patients. The course is delivered in a hybrid format that allows students to complete weekly lessons and quizzes at their own pace and then join the live (synchronous) online sessions to practice the Spanish they are learning in the lessons.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5031 - Mentoring & Scholarly Activity (1 Credit)

Mentorship and scholarly activity are essential to maximizing personal and professional potential. Students will engage in the COMPASS program's professional identity formation curriculum and partner with Guides for mentorship, reflection, and goal setting. This course will also launch students' 4-year, longitudinal mentored scholarly activity project.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

IDPT 5033 - Clinical Medical Spanish II @ Fort Collins Branch (1 Credit)

This weekly 1-hour class seeks to build on the work done in the first medical Spanish elective for 1st year medical students. It is intended to be simulation-based and will serve as a practical precursor to clinical or community settings. Prerequisites: Clinical Medical Spanish IDPT 5029.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5034 - One Health II (FCB) (1 Credit)

One Health is a transdisciplinary concept that focuses on issues at the intersection of Human, Environmental, and Animal Health. This elective will give students the opportunity to teach about One Health concepts to the Northern Colorado community at large. It will also give students the opportunity to shadow at the CSU Veterinary Teaching Hospital to understand the similarities and differences between human and veterinary medicine and opportunities for collaboration.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5090 - Mentored Scholarship I (1 Credit)

A four year requirement for students to pursue and complete a mentored scholarly project and a capstone presentation. Project can be in one of the following thematic areas: basic and clinical research; epidemiology and public health; humanities and social sciences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring.

IDPT 5091 - MSA Summer Elective (12 Credits)

Students work intensively with mentors on their chosen MSA Project. Students critically review background literature, define a question/hypothesis, develop, and implement methods and student design, collect data, analyze, and interpret data, and submit written progress reports for their MSA project. Pre-requisite: IDPT 5090

Grading Basis: Pass/Fail

Typically Offered: Summer.

IDPT 5094 - Research Track Plains Elective (1 Credit)

The goals of the Research Track are: 1) to foster student development of an identity as a physician capable of being deeply involved with and completing research efforts and for graduates to acquire the knowledge and skills to successfully complete the components of a research project. This elective is only for students who have been accepted into the Research Track in the first trimester.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 5095 - Research Track Phase I (12 Credits)

Students complete training in citation manager software and initiate mentor-guided research. Prerequisite: Required if enrolled in Research Track.

Instructor consent required. Course Restrictions: Must be a Research Track Student, this course replaces Mentored Scholarship requirement.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5096 - Summer Research Phase I (1 Credit)

This course is for students desiring to do research at CU or other institutions during the summer in between first and second year.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 5200 - Introduction to Global Health (1 Credit)

This one-credit course is designed to introduce clinicians in training to critical topics in global health. The course consists of lectures and group discussions lead by experts in a variety of global health-related diseases, public health priorities, and health policy issues.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

IDPT 5600 - Topics in Biomedical Science and Research (4 Credits)

Research internship for undergraduate fellows in Graduate Experiences for Multicultural Students (GEMS) Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

IDPT 6006 - Obesity and Cardiovascular Disease (1 Credit)

The course will cover how obesity relates to cardiovascular disease including basic and clinical mechanisms on the pathophysiology of vascular biology, insulin resistance, risk factors, and outcomes, and how therapeutic interventions modify cardiovascular disease risk. Requirements: Course will span two semesters, Fall and then Spring

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

IDPT 6090 - Mentored Scholarship II (1 Credit)

A four year requirement for students to pursue and complete a mentored scholarly project and a capstone presentation. Project can be in one of the following thematic areas: basic research, clinical research, epidemiology and public health, humanities and social sciences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

IDPT 6095 - Research Track Phase II (1 Credit)

1. Demonstrate progress towards the completion of your research project and publicly communicate understanding of the project to others a. Present WIP to peers and faculty in an oral presentation b. Effectively respond to comments and questions from peers about your research efforts c. Identify scientific questions when others present Prerequisite: Required if enrolled in Research Track. Instructor consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 6652 - Key Cncpt Ped Dsablty 3 (2 Credits)

Grading Basis: Letter Grade

IDPT 6655 - Asst Tech: Assess Incl I (2 Credits)

Grading Basis: Letter Grade

IDPT 7005 - Foothills Basecamp - Transition to Clerkship (4 Credits)

Students develop knowledge and skills necessary to transition to clerkships with confidence and success. Through multidimensional skills and case-based sessions, students will advance clinical reasoning, psychomotor, communication and efficiency skills as well as dedicate time to reflection and professional identity exploration.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 7012 - Longitudinal Integrated Clerkship (2-6 Credits)

This is a multidisciplinary course required of students participating in the LIC. Students will be required to manage cohorts of longitudinal patients, participate in projects and small group discussions, engage in reflective practice and complete logging of clinical requirements. Department Consent Required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7013 - Longitudinal Internal Medicine (LIC) (2-6 Credits)

This course introduces adult medicine with emphasis on acute illness, chronic disease management, and preventive care. Students will combine inpatient and ambulatory experiences. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7022 - Longitudinal Pediatrics (LIC) (2-6 Credits)

This course introduces pediatric medicine, emphasizing illness and wellness of children and families, growth, development, physical and mental well-being. Students combine inpatient, nursery, and ambulatory experiences. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7032 - Longitudinal Obstetrics/Gynecology (LIC) (2-6 Credits)

This course focuses on care of women in OB/GYN clinics, labor and delivery, OB and GYN wards, and the operating room. Additionally, students will learn a newborn exam and fundamentals of newborn care. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7033 - Longitudinal Emergency Med (LIC) (2-3 Credits)

This course will provide an introduction to the initial evaluation and management of emergently presenting problems in adults and children. Emphasis will be on disease recognition, differential diagnosis, and stabilization of shock and trauma, as well as pre-hospital care and concepts of triage.

Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

IDPT 7042 - Longitudinal Psychiatry (LIC) (2-6 Credits)

This course will focus on psychiatric care of adults and children, and clinical experiences will include ambulatory settings, inpatient units, psychiatric emergency room, consults, and psychiatric specialties. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7049 - Clerkship Remediation (4-8 Credits)

This remediation course is designed to allow the student to remediate a specialty clerkship or LIC specific requirements.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 7052 - Longitudinal Surgery (LIC) (2-6 Credits)

This course focuses on surgical diseases. Students will participate in operative care and peri-operative care. Assessment and management of common inpatient and ambulatory procedures are emphasized from initial patient referral to discharge. Students will combine ambulatory, inpatient and operating room experiences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7062 - Longitudinal Family Medicine (LIC) (2-6 Credits)

This course focuses on broad spectrum family medicine including acute and chronic ambulatory care, hospital care, and obstetric care of adults and children. Students will participate in the provision of comprehensive patient-centered primary care and will focus on the longitudinal acute and chronic disease management, prevention and health. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7090 - Mentored Scholarship III (1 Credit)

A four year requirement for students to complete a mentored scholarly project and capstone presentation. Projects can be in one of the following thematic areas: basic research, clinical research, global health, epidemiology and public health, humanities and social sciences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring.

IDPT 7095 - Research Track Phase III (1 Credit)

Students clarify and plan Phase IV process for completing Research Track requirements. Prerequisite: Required if enrolled in Research Track.

Instructor consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 7101 - Clinical Practice Exam (CPE) Formative (1 Credit)

To advance to Phase IV, students must complete all required Phase III clerkships with passing grades, must complete the required Longitudinal Curriculum elements, the formative CAPE assessment, and successfully pass or remediate the Clinical Practice Exam (CPE).

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 7102 - Clinical Practice Exam (CPE) Summative (1 Credit)

To advance to Phase IV, students must complete all required Phase III clerkships with passing grades, must complete the required Longitudinal Curriculum elements, the formative CAPE assessment, and successfully pass or remediate the Clinical Practice Exam (CPE).

Grading Basis: Pass/Fail

Typically Offered: Fall, Spring, Summer.

IDPT 7160 - Philosophical Foundations of Research Ethics (2 Credits)

This course will examine the philosophical basis for current research ethics practices, address current ethical issues and controversies in biomedical research, and provide students with knowledge and analytical skills to address the ethical dimensions of biomedical research. Crosslisted: CLSC 7160

Grading Basis: Letter Grade

Typically Offered: Spring.

IDPT 7200 - Scientific Writing for Doctoral Students (2 Credits)

Scientific writing course for students engaged in research. Focuses on critical thinking, analytical writing, and oral presentation. Taught as a writing workshop, the course emphasizes effective communication with both professional and non-technical audiences. Restrictions: Must have passed preliminary examination; permission of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IDPT 7301 - Introduction to Life Science Technology Commercialization (1-3 Credits)

Course designed to familiarize graduate level engineering, business, law, science students with fundamentals of life science technology commercialization including drugs, devices, diagnostics, healthcare IT and platform applications. Three consecutive, 5-week classes, each 1 credit. Open to all graduate level students.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring.

IDPT 7610 - Phcl & Anat of Cntral Nerv Sys (1 Credit)

Grading Basis: Letter Grade

IDPT 7628 - Gerontological Pharm (2 Credits)

Grading Basis: Letter Grade

IDPT 7630 - Detertrn Prima Struct Biomolecl (4 Credits)

Grading Basis: Letter Grade

IDPT 7640 - Molecular/Cell/Dev/Endo (3 Credits)

Grading Basis: Letter Grade

IDPT 7642 - Introduction to Laboratory Animal Research (1 Credit)

Provides basic knowledge on the use of laboratory animals, animal welfare and animal models. Includes general concepts on animal biology and husbandry for most common laboratory species and incorporates essential principles of anesthesia, analgesia, surgery and peri operative care.

Grading Basis: Letter Grade

Typically Offered: Summer.

IDPT 7656 - MSTP MSIII Clinical Interval (1-3 Credits)

Course restricted to MSTP MSIII students for clinical gap intervals. Prerequisite: MSTP director approval required. Instructor consent required

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7727 - Directed Study Clinical Sci (4-24 Credits)

This course provides an opportunity for medical students to further develop and refine their knowledge of the clinical sciences. Course will include scheduled study time, regularly scheduled practice exams, tutoring in clinic content and test taking strategies. Prereq: Course Director approval required to add.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

IDPT 7777 - Off Time (0 Credits)

Grading Basis: Non-Graded Component

Repeatable. Max Credits: 24.

IDPT 7850 - Independent Study in Bioethics, Medical Humanities or Health Law (1-6 Credits)

Course is designed to meet the needs of students interested in conducting advanced studies of issues and topics in bioethics, medical humanities, or health law. Students will work under the direction of the course director on a specific research topic. Course Restrictions: Permission of the instructor. Repeatable for credit within the degree program, but not within the same term. Max credits - 6.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IDPT 8000 - Clinical Preceptorship Elective (2-4 Credits)

2.0 cr. Summer, 4.0 Fall and Spring. This course continues the established student-preceptor relationship from the FDC course. Students attend their preceptor office 2-3 times per month. Students will work with a panel of patients or families serving as their physician under the supervision of their preceptor. Prereq: IDPT 7000.

Grading Basis: Medical School HP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

IDPT 8003 - Geriatrics (4-8 Credits)

2-4 wks. Max: 2. Geriatrics elective will provide clinic exposure to caring for older adults in the outpatient primary care and sub-acute rehab settings. Learning objectives focus on the special needs of frail or chronically ill older adults and resources beyond direct physician care utilized for this population.

Grading Basis: Pass Fail with IP

IDPT 8007 - Medicine/Pediatrics (4-8 Credits)

2 or 4 wks. The focus of this elective is to help students discern whether to pursue combined residency training in Internal Medicine and Pediatrics. This course will expose students to possible career paths available for Med-Peds providers within primary and specialty care settings.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

IDPT 8011 - Clinical Nutrition (4-8 Credits)

2 wks. Max:1. Develop your nutrition assessment skills with this elective, tailored to your needs with adult and/or pediatric inpatients and/or outpatients with a variety of conditions and diseases. Active learning with exceptional mentors is emphasized.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8015 - Global Health Intl Project (8 Credits)

This course is the continuation of IDPT 6667 & 6668. Students will undertake a global health project at an international site under the supervision of their designated mentor and local supervisors.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

IDPT 8016 - Physician as Educator (2 Credits)

This elective is intended to develop your skills as an effective teacher in clinical and classroom settings. This will include participation in evening teaching workshops and co-precepting.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

IDPT 8018 - Global Health & Disaster (4 Credits)

This international health course is a two week training offered once a year as part of the University of Colorado School of Medicine Global Health Track. This course prepares its participants for international experiences and future global health work.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8020 - Physician as Advisor (2 Credits)

1 wk: Physician as Advisor teaches fourth year students to advise peer students in an Advisory College Program. It will prepare students for careers in academic medicine by developing skills in advising, leadership, and administration as well as self-assessment. Longitudinal course that can conflict with other courses. This is a 2 semester course and each semester counts for 2.0 credit hours. Prerequisites: Fourth year standing and selection as a "Student Advisor" in the Advisory College Program.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring.

IDPT 8021 - Costa Rica Spanish Immersion (4-8 Credits)

This capstone Spanish immersion course in Costa Rica includes home stays, intensive language instruction and public health and community outreach activities in under-served communities. Student should be passionate about providing care to disadvantaged patients in the USA or abroad and committed to improving their Spanish language skill. Requisite: Contact course coordinator for information. Department Consent required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

IDPT 8023 - Refugee Health II (4-8 Credits)

Refugee health II will provide students with exposure to the social factors which impact upon the health of refugees in the Denver metro region. Students will work with agencies providing services to refugees and participate in home visits and outreach activities within community settings.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

IDPT 8024 - Leadership Reading Elective (8 Credits)

This online reading elective is divided into 4 one-week modules and is designed to strengthen a student's understanding of leadership and how it impacts patient care, professionalism, and medical organizations.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8027 - Race in Medicine (4 Credits)

This course explores the role of racism and homogenous beliefs/values in medicine and how cultural incompetence perpetuates health disparities. Students learn about race as a social construct, theories related to class, and the impact of unconscious bias on health outcomes. The class urges students to confront discomfort in healthy ways.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8028 - The Business of Medicine (4-8 Credits)

This interactive course enhances students' Healthcare System Literacy, i.e. understanding how healthcare is structured, financed, and regulated. With micro- to macro-level modules, the course helps prepare students for personal practice challenges as well as for improving healthcare more broadly.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Spring.

IDPT 8030 - Laboratory Medicine (8 Credits)

Lecture-based elective provides a comprehensive overview of Clinical Pathology and laboratory testing. It reviews biochemical, physiologic, and pathologic phenomena on which laboratory tests are based and emphasizes approaches to the ordering, interpretation, and pitfalls of laboratory tests.

Grading Basis: Medical School HP

Typically Offered: Fall.

IDPT 8032 - Longitudinal Ultrasound Elective (4-8 Credits)

The longitudinal ultrasound elective is an elective designed to give students hands-on practice with ultrasound with a preceptor over the course of their fourth year. The students will work with the preceptor to complete 150 clinical ultrasounds and complete course learning objectives. Students will be assigned a preceptor based on their clinical area of interest.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8033 - MSTP Trailhead Course (4-8 Credits)

This course is specifically designed to prepare MD / PhD students, who are returning to clinical clerkships, for a successful transition into direct clinical care learning experiences. Students can choose to spend one month on an academic inpatient Internal Medicine, or General Surgery, service. (Students let the course director know whether they want to do Medicine or Surgery; these cannot be combined into one month.) Students will develop the knowledge, skills, and attitudes to work with an interdisciplinary team to workup, diagnose, and treat acutely ill adults in the inpatient setting.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 8035 - International Experiences (4-16 Credits)

This course allows fourth year students to complete an international experience at an approved and vetted international site. The experience may include clinical work, language immersion, or a combination of both.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

IDPT 8037 - Advanced Neurosciences (4-8 Credits)

This course will integrate neuroscience and clinical science as applied to diseases and disorders of the nervous system. The curriculum will integrate neuroanatomy, neurophysiology, and neuropharmacology with clinical neurology, neurosurgery, neuroradiology, and neuropathology.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8038 - Cardiology Connections (4-8 Credits)

This course is designed for post-clinical year medical students who wish to enhance their ability to utilize basic scientific principles and knowledge in the practice of cardiovascular medicine.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8039 - Advanced Immunology and Immunotherapy (4-8 Credits)

This course will investigate the cellular and molecular processes necessary to achieve an advanced understanding of how the immune system maintains balance and operates in health and disease. Recent immunotherapeutic advances that have revolutionized treatment options will also be examined. Intensive analysis of selected topics, primary literature and relevant clinical cases focused within the field of immunology will result in the development of content integration skills, critical thinking, and analysis skills that can be applied to the practice of medicine as well as global scientific and societal issues.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8041 - IHQSE Quality Improvement Practicum (4-8 Credits)

This is a one semester longitudinal course offered Fall and Spring semesters. This course fosters inter-professional communications and enables students to obtain knowledge and skills for Quality Improvement (QI). Students will be integrated into ongoing quality improvement projects and work with Attending and/or Resident.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring.

IDPT 8044 - Health Systems and Community Leadership Trail (4-6 Credits)

Students will be equipped with skills needed in leadership roles in healthcare organizations – group practices, academic departments, community non-profits, hospital executive teams. Learning strategies will be mentorship and simulation exercises supplemented with directed reading and classroom discussion. Emphasis is on balancing professional values with financial reality.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8046 - IHI Open School Basic Certification (2 Credits)

Students complete the Institute for Healthcare Improvement (IHI) Open School Basic Certificate in Quality and Safety, comprising 13 courses (17.75 total hours), which provides a well-rounded introduction to quality, safety, population health, equity, health care leadership, and person- and family-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8047 - LIC Ambassadors (2-8 Credits)

Students will apply to become LIC Ambassadors following their LIC Foothills year, enabling them to participate in leadership, education, and project work, while serving future students as a peer-mentor and advisor, supporting LIC program directors, participating in scholarly work, helping with faculty development, and developing skills in medical education and teaching. Pre-requisite: Student must have completed the LIC in which they are serving as an Ambassador, unless approved exception by the LIC Director and Assistant Dean of Medical Education, Clinical Clerkships.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

IDPT 8048 - Future Leaders in Medical Education (4-6 Credits)

Welcome to Future Leaders in Medical Education s. This course is designed to prepare medical students to be the future leaders, teachers, and researchers in medical education. By developing medical education skills that can be implemented on day one of intern year, students will leave the course prepared for their roles as medical educators in residency and with tools for their future careers. We will introduce students to topics such as adult learning theory, curriculum design, evaluation and assessment, teaching, feedback, education administration, medical education research and scholarship, careers in medical education, and designing inclusive learning environments.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8053 - Medical Improvisation (4 Credits)

The Medical Improvisation elective uses interactive improvisation theater techniques to increase learner ability and confidence in patient-centered communication. Prior research has established Medical Improvisation's suitability for both advanced and beginning clinicians and multiple medical schools have incorporated this curriculum.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8060 - Alpine Basecamp - Transition to Adv Clerkship (4 Credits)

The Alpine Basecamp will further develops students' knowledge, skills, and attitudes necessary to begin their advanced clinical rotations with confidence and success. Through skills practice and case-based sessions, students will advance clinical reasoning, psychomotor, communication, and efficiency skills.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8061 - Summit Basecamp - Transition to Residency (8 Credits)

The Summit Basecamp- Transition to Residency (TTR) is a curriculum designed to prepare graduating medical students to be safe, efficient, and confident day-1 interns.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8062 - Research Trail II (4-6 Credits)

The Research Trail provides research education and training tailored to the collective and individual needs of medical students with research/academiccareer interests.

Grading Basis: Pass Fail with IP

IDPT 8063 - Bioethics & Humanities Trail (4-6 Credits)

This course provides a broad introduction to bioethics and humanities. Through a combination of didactics and experiential, self-directed learning, learners will explore academic options and career pathways in bioethics and humanities. Learners can customize portions of the course to meet their needs and interests.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8066 - MSTP Advanced Neurosciences (4 Credits)

This course will integrate neuroscience and clinical science as applied to diseases and disorders of the nervous system. The curriculum will integrate neuroanatomy, neurophysiology, and neuropharmacology with clinical neurology, neurosurgery, neuroradiology, and neuropathology. Prerequisites: Course is only open to MSTP post-clerkship students who have successfully completed the pre-clerkship phase and most of the clerkship phase.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8067 - MSTP Advanced Immunology (4 Credits)

This course will investigate the cellular and molecular processes necessary to achieve an advanced understanding of how the immune system maintains balance and operates in health and disease. Recent immunotherapeutic advances that have revolutionized treatment options will also be examined. Intensive analysis of selected topics, primary literature and relevant clinical cases focused within the field of immunology will result in the development of content integration skills, critical thinking, and analysis skills that can be applied to the practice of medicine as well as global scientific and societal issues. Prerequisites: Course is only open to MSTP post-clerkship students who have successfully completed the pre-clerkship phase and most of the clerkship phase.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8068 - MSTP Cardiology Connections (4 Credits)

This course is designed for post-clinical year medical students who wish to enhance their ability to utilize basic scientific principles and knowledge in the practice of cardiovascular medicine. Prerequisites: Course is only open to MSTP post-clerkship students who have successfully completed the pre-clerkship phase and most of the clerkship phase.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8069 - Leading Patient Group Visits (3 Credits)

This longitudinal course aims to master anticipatory guidance for both prenatal and pediatric care. The model for the course is based on Centering Pregnancy and Centering Parenting which focuses on building strong relationships between providers and groups of patients. Prereq: Has completed clinical LIC year. Spanish speaking strongly preferred.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 9.

Typically Offered: Fall, Spring, Summer.

IDPT 8071 - One Health Trail Fort Collins Branch (4-6 Credits)

Welcome to the One Health Trail. We will investigate the myriad of ways that human, animal, plant, and environmental health are connected. We will travel and work within the local community to understand how human, animal, and environmental health intersects in the modern food supply chain, local arthropod control, wildlife and livestock management. We will evaluate frameworks, theories and methodologies employed by One Health practitioners. The course is designed to apply our critical analysis skills to current community health challenges and discuss One Health methods for solving those problems.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8072 - Medical Spanish Immersion Fort Collins Branch (2-4 Credits)

This course combines Spanish language learning with a health context. Students will develop their Spanish proficiency with a focus on health-related vocabulary and cultural context. By contributing to real-world community needs abroad, students will gain practical experience, broaden their understanding of global health systems, and analyze community health needs. Students will interact with health officials, administrators and patients, tour medical facilities, and interview community members.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 8073 - Nutrition & Culinary Medicine Selective (8 Credits)

The selective trains students to understand and communicate the impact of good nutrition on patient health and to work well with registered dietitians in interdisciplinary teams. In-person modules include case-based learning and meal preparation. Self-study online modules are paired with clinical shadowing of RDs and nutrition MDs.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8074 - Advanced Concepts in Public Health Selective (8 Credits)

The course will introduce students to the public health approach to improving health in both a present-day and historical perspective. We will compare/contrast these methods to those used in traditional medicine. We will then review public health, and community-based intervention strategies and policies addressing some of the most pressing public health crises. We will critically analyze changes in healthcare that could dramatically change population health, such as a universal health insurance system in the US. By evaluating international systems, we will debate the improvements and persistent health disparities that would exist if a universal health insurance model was adopted. Students will develop an understanding of the US public health system in order to better prepare themselves to collaborate effectively in the future to improve population health.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8075 - Climate Change and Environmental Health Selective (8 Credits)

Students will develop a strong foundation in planetary health while building a network of multi-disciplinary leaders in the field. Following a roadmap of lectures, self-directed learning activities, case studies, and field trips, students will confidently integrate environmental determinants of health into their professional practice.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8076 - Alpine Non-Surgical Musculoskeletal and Spine Medicine Selective (8 Credits)

The Alpine Non-Surgical Musculoskeletal (MSK) and Spine Care selective is a 4-week block that will focus on outpatient MSK diagnosis and management. Differential diagnoses will be emphasized within a MSK framework including symptom patterns, physical exam, imaging, and diagnostic injection interpretation. Students will be expected to learn management principles for acute and chronic conditions, including MSK health maintenance, secondary prevention, rehabilitation, medications, injections, and indications for surgery. Weekly didactics and scheduled self-study time will be used to facilitate medical knowledge development and application. The course will be pass/fail with grades based on attendance, participation, professionalism, and completion of assignments. Assignments will include a pre-test, post-test, online lectures, online learning modules, and readings. Core clinical conditions include osteoarthritis, joint injury, spine disorders, compression neuropathies, soft-tissue disorders (such as ligament sprains/tears, tendinopathies (including rotator cuff), bursitis, myofascial pain), chronic pain, and osteoporosis. MSK and spine conditions are among the most common explanations for visits to physicians' offices. Annually 15-30% of the population seeks care for MSK conditions. The presentation of such ailments is expected to increase with an aging population. Correspondingly, MSK knowledge and competency are integral for successful practices in internal medicine, family practice, emergency medicine, geriatrics, pediatrics, and others. Proficiency with the course outlined core competencies will enhance the professional growth of all students regardless of expected specialization.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8077 - Advanced Dissection Fort Collins Branch (1 Credit)

Students will develop their knowledge of clinically-relevant gross anatomy of a specific region of the body. They will also hone their technical skill in dissection, and practice producing and presenting a short presentation of their work to faculty.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

IDPT 8078 - Translational Medicine Selective Fort Collins Branch (8 Credits)

Students will use a clinical immersion to identify and learn how to effectively address an impactful knowledge gap in medicine. Training will include entrepreneurship, team building, regulatory issues, project/trial design, intellectual property, biotechnical/bioengineering resources, and effective communication of ideas and projects.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8079 - The Frontier of AI & Medicine Selective (8 Credits)

This course seeks to provide understanding of the current state of the art in ML/AI across multiple clinically relevant areas including imaging, health records, and genomics; to provide future practitioners with the knowledge to examine and critically think about performance assessments of AI systems; and to provide future practitioners with the understanding necessary to consider the ethical implications of AI deployments into clinical practice.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8090 - Mentored Scholarship IV (1-8 Credits)

A four year requirement for students to complete a mentored scholarly project and a capstone presentation. Project can be in one of the following thematic areas: basic research, clinical research, global health, epidemiology and public health, humanities and social sciences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring.

IDPT 8091 - MSA Phase IV Preparation (4-8 Credits)

Students work intensively with mentors on their chosen MSA Project. Students critically review background literature, define a question/hypothesis, develop and implement methods and study design, collect data, analyze and interpret data, and submit written progress reports for their MSA Project.

Prereq: MSA form required. Prior approval of Associate Dean for Student Affairs, Mentor, and Course Director required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

IDPT 8093 - IDPT Scholarly Activity (8 Credits)

This course is designed to allow students to complete scholarly work not appropriately covered by other available courses (e.g. MSA work beyond IDPT 8091). 4 weeks. Cannot be taken after section 47. Prereq: Special permission and individual arrangements required in advance. Student must have a faculty/project mentor who will sign off on the project. Student must receive prior approval from Assoc. Dean for Student Affairs.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

IDPT 8095 - Research Track Phase IV (1-8 Credits)

Students complete requirements for Research Track which includes submission to a national scientific journal of a first author manuscript which meets mentor-standards as appropriate for submission. Students will present their work at the Capstone event. Prerequisite: Required if enrolled in Research Track. Instructor consent required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring.

IDPT 8096 - Alpine Critical Care Course (4 Credits)

As a part of the critical care graduation requirement, all students rotate for 2 weeks in an intensive care unit (ICU) at a core SOM site and participate in didactics/skill sessions addressing essential critical care topics. Students have an opportunity to select an adult medical, adult surgical, or pediatric ICU experience.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8097 - Narrative Medicine: Foundation (2 Credits)

This is an asynchronous longitudinal reading and writing course with 6 gatherings for dinner and discussion. Students must additionally enroll in the clinical month-long rotation the same semester. The goal of this course is to develop "narrative humility" through close reading and practicing the skills of attention, representation, and affiliation. The reading portion of this course consists of didactic material specific to narrative medicine, fictional short stories, patient stories, and 3 longer texts. These readings and reflections will be evaluated through both assigned writings and discussions. Prerequisites: Must co-enroll in the 4 week clinical narrative medicine rotation the same semester

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Summer.

IDPT 8098 - Healer's Art (2 Credits)

The Healer's Art course utilizes principles of adult education, contemplative studies, humanistic and transpersonal psychology, cognitive psychology, formation education, creative arts and storytelling to present and explore human dimensions of medicine rarely discussed in medical training. Topics covered include deep listening, presence, acceptance, loss, grief, healing, relationship, encounters with awe and mystery and self-care practices. The curriculum enables students to uncover and strengthen the altruistic values, sense of calling and intention to serve that have led them to medicine, creating a firm foundation for meeting the challenging demands of contemporary medical training and practice. This spring the course will be held online in five synchronous sessions. In this format we welcome medical students from CUSOM and CSU, and DVM students the CSU and UAF campuses. Medical students will complete additional reading, clinical observations, and a reflective assignment about topics learned in the course and how they impact the clinical setting.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8099 - Narrative Medicine in Primary Care (8 Credits)

The goal of this course is designed to translate the narrative skills taught in the foundation course into clinical practice, specifically within the context of primary care. Students will practice the skills of paying attention to their patients' affect, representation of their lifeworld, and illness meaning through the use of a narrative framework and then formulate plans that faithfully represent their patients' goals and values. Then hopefully with care and practice the student will experience affiliation with their patients and their sufferings, bridging the divide between the worlds of illness and health.

Prerequisite: Must be co-enrolled or have previously taken the Narrative Medicine Foundation longitudinal course.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

IDPT 8101 - Global Health in Local Contexts (8 Credits)

This four-week advanced elective is designed for fourth-year medical students seeking an in-depth exploration of health equity and social justice at the local level with a focus on immigrant, refugee, and newcomer health.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8102 - Longitudinal Communication Coaching (4 Credits)

Longitudinal course spanning 2 semesters. Training in communications skills coaching and then longitudinal work with a DOCS coach and group over 3 sessions. Then substitute coach communication skill sessions within the DOCS curriculum. Prerequisites: Must submit a one paragraph essay which includes performance in the DOCS curriculum and passion for teaching to determine eligibility.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8103 - Environmental Health for Future Clinicians (4 Credits)

This course aims to bridge the gaps between public health and medicine by providing students with information about environmental health risks. The course is designed to help medical students learn more about how contaminants in the environment can impact patient health.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8104 - COAHEC National Underserved Scholars (1-2 Credits)

COAHEC National Underserved Scholars prepares students for practice in underserved areas throughout the US using didactic and experiential learning. The class aims to be a model for healthcare education with goals focusing on health equity, interprofessional collaboration, and producing physicians committed to addressing health inequities particularly within vulnerable populations. Throughout the course, students will learn from national experts who work with vulnerable populations to gain an understanding how the social determinants of health impact vulnerable communities from receiving medical care. These seminars will also provide an opportunity for students to get a variety of real-world approaches of how physicians approach the challenges of the social determinants of health, and how students can incorporate these lessons into a toolbox of sorts to have at the ready for their own practice. Additionally, eventually, students will have the opportunity to get involved in the Aurora community in a service capacity. While this serves to give back to the Aurora community, it also provides students the opportunity to get first-hand exposure to the social determinants of health and show how physicians can be involved in their communities outside of the clinic setting. In the first runs of the course, the students will act as mentors to URM high school students who may be interested in the medical field. This will continue until the elective expands and matures to become an important Friday food resource team for areas of Aurora as a Friday Food Fleet. Prereq: Open to students approved/accepted into AHEC Scholars program through application within AHEC.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8106 - Impacts of Climate Change through a One Health Lens (4 Credits)

Welcome to Climate Change & Health! This two-week, pass-fail, hybrid elective is open to medical students at CUSOM at the CSU branch. The primary aim of the course is to deliver key knowledge and skills in planetary health which physicians may be able to draw upon for the mindful practice of medicine in the midst of a climate crisis. We will identify the health impacts of climate change and discuss effective responses on the part of specific health services. Learners may have opportunities – together and in multidisciplinary settings - to apply knowledge to levels of prevention, climate mitigation, and adaptation, and to explain health co-benefits of climate action.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8107 - Comparative Oncology (4 Credits)

Comparative oncology is the study of naturally occurring cancers in companion (pet) animals with an emphasis on determining their translational relevance to human cancers. Cancer is a common disease in pet dogs and cats, and the pet-owning public is highly motivated to seek traditional and experimental therapies. Cancer in companion animals shares many similarities to cancer in humans including histologic appearance, tumor genetics, molecular targets, biologic behavior, and response to conventional therapies. The Flint Animal Cancer Center (FACC) at the Colorado State University Veterinary Teaching Hospital (CSU-VTH) is a world-renowned leader in companion animal cancer research, residency and fellowship training, and clinical cancer care. The FACC offers a multidisciplinary approach to clinical cancer care, including medical oncology, surgical oncology, radiation oncology and clinical trials teams, in customized treatment planning for each companion animal patient. Additionally, our team is supported by the Argus Institute, a team of licensed social workers who assist with guiding the clinical team in the delivery of difficult conversations (poor prognosis, end of life, etc) and encourage provider well-being and mental health support. The Argus team also supports animal caregivers including grief counseling, quality of life assessment, and end of life decision making.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 8108 - Language Access and Training to Work with Interpreters (4 Credits)

Welcome to Language Access and Training to Work with Interpreters. This course is designed to develop your abilities in facilitating language access and collaborating with interpreters in clinical settings. We will cover essential communication techniques, the ethical principles of language access, and the interpreter code of ethics followed by training to work with interpreters and simulated encounters. Through collaborative activities and reflective discussions, we will draw upon our shared knowledge and experiences to deepen our learning.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8110 - Preventive Medicine – Epidemiology & Public Health (4 Credits)

Welcome to Preventive Medicine. This course is designed to apply our clinical knowledge and critical analysis skills to public health and epidemiology. We will review and evaluate various concepts and methodologies that may be used in public health and epidemiology, specifically as they relate to One Health and population-level health. Learners may apply the principles of epidemiology to complete a research or service project that relates directly to vector-borne diseases.

Grading Basis: Pass Fail with IP

IDPT 8111 - Substance Use Disorders (4 Credits)

Welcome to the Fort Collins Branch Substance Use Disorders Elective. This elective is designed to build advanced clinical skills in the prevention, diagnosis, and treatment of substance use disorders (SUD). Regardless of what fields you ultimately enter following graduation, you will provide care to patients with SUD. We aim to cultivate an attitude of shared humanity and harm reduction in caring for patients with SUD. Additionally, we will use the lens of SUD to develop and practice advocacy skills that can be applied to other health policy and fields of practice.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8112 - Cancer Biology (8 Credits)

The Cancer Biology Course offers a 4-week integrated experience teaching key oncology concepts important for the care of cancer patients. Classroom learning will involve interactive sessions with case-based learning and application to clinical cases. We will focus on specific topics including how cancers develop, mechanisms of growth and resistance, as well as categories of oncology treatments such as hormonal therapies, targeted treatments, and immunologic approaches. The clinical component will allow students to build their skills seeing new oncology patients in multidisciplinary, tumor board settings, emphasizing radiology and pathology input in addition to specialists from medical, surgical, and radiation oncology. Learners will also have the opportunity for a broader, generalist oncology clinical experience at the VA or Denver Health, seeing patients of various tumor types.

Grading Basis: Pass Fail with IP

IDPT 8113 - Art in Medicine (8 Credits)

Art and Medicine is a class for third- and fourth-year students with the skills to utilize arts, humanities, and creativity to better understand issues of health equity, further their own personal growth and empathy, and improve perspective taking from their patients.

Grading Basis: Pass Fail with IP

IDPT 8114 - Experiences in Health and Nutrition-related Community Outreach (1 Credit)

Students will work with the Extension Office on outreach projects that address unique health-related needs of the local community. Experiences will include participation in planning and delivery of education around nutrition-related topics including food access, food safety, food preparation, gardening and farming, and healthy lifestyles. Students will interact with the public at the Larimer County Farmer's Market and have the opportunity to spend a day working on a farm. Other educational events that support topics such as healthy aging, living with chronic disease, youth activities, and climate-related topics will also be offered as opportunities during the elect

Grading Basis: Pass Fail with IP

IDPT 8601 - Research Track, Research I (8 Credits)

The first of two courses for Phase IV Research track medical students. Students are expected to spend full time working on their research project and towards the Track required goals of submitting an abstract and a first-author publication. Limited to and required for Phase IV (MS4) medical students who are in good standing in the Research Track. Course Director approval required. 4 weeks.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

IDPT 8602 - Research Track, Research II (8 Credits)

The second of two courses for Phase IV Research Track medical students. Students are expected to spend full time working on their research project and towards the Track required goals of submitting an abstract and a first-author publication. Restrictions: Limited to and required for Phase IV (MS4) medical students who are in good standing in the Research Track. May be repeated once as an elective. Prereq: IDPT 8601. Course Director approval required. 4 weeks.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

IDPT 8610 - Scholar's Year Research (2 Credits)

This 3-semester longitudinal course is an adjunct to the scholar's year for the work in progress during scholar's year, and requires twice a semester check ins with the Office of Student Life and reflection on career trajectory. Courses to be taken between 3rd year clinical courses and 4th year electives. Requisite: Must have successfully completed all 3rd year courses to enroll

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

IDPT 8890 - Clinical Experience for CTSI PhD Students (1 Credit)

Each student will identify a clinician mentor who will develop/direct clinical experience tailored to student's thesis research. It may include participation in relevant clinical conferences, a direct clinical experience, clinical research, and preparation of a clinical research protocol. Prereq: IDPT 7805 & 7646, EPID 6630, BIOS 6601 or equivalent. Restrictions: PhD Graduate Students.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IPCP 5000 - Interprofessional Collaborative Practice (1 Credit)

This course develops core competencies in teamwork & collaboration for incoming health professions students. Students will learn in Interprofessional teams coached by Interprofessional faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve Interprofessional collaboration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Spring.

IPCP 5500 - IP Collaborative Practice & Ed Independent Study (0.5-1 Credits)

The IPCP 5500 Independent Study, will allow students to explore IPCP content that complements and/or improves their knowledge and understanding of Inter-professional Practice and Education.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

IPHE 5500 - IP Ethics & Health Equity Independent Study (0.5-1 Credits)

The IPHE 5500 Independent Study, will allow students to explore IPHE content that complements and/or improves their knowledge and understanding of Inter-professional Practice and Education.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

IPHE 6000 - IPE Healthcare Ethics & Health Equity (1 Credit)

Develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical & health equity issues in clinical practice.

Integrates inter-professional collaboration & teamwork to teach students ethical theory & reasoning, professional ethics and its historical origins, and approaches to health care decision-making.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Fall.

MEDS 8001 - Medicine AI (8 Credits)

4 wks. Max:18. This course can meet Sub-I qualifications. The sub-intern functions as an intern and is responsible for the admission, evaluation, and continuing care of patients under the supervision of a Resident and an Attending. Subinternships are offered at DHMC, P/SL, UCH, VAMC, and St. Joseph's Hospital..

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8002 - Hospital Medicine AI (8 Credits)

Experience hospitalist medicine first hand by working one-on-one with an attending and developing a quality improvement initiative. You will also gain the skills to excel from the start of intern year by being the primary provider for your patients. This Sub-I course meets the CU SOM requirement for graduation.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8004 - Cardiology (4-8 Credits)

4 wks. Designed to offer a broad general exposure to adult cardiology, including history, physical examination, and an introduction and review of standard noninvasive testing. Rotations will be at UCH, DVAMC and DHMC with assignments based on timing of request and availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8006 - Allergy/Clin Immunology (4-8 Credits)

4 wks. Max:1. Offered at UH and NJMC. Allergy and clinical immunology with direct patient contact in allergy and immunology clinics. Opportunities to participate in inpatient consultations, observe clinical immunology laboratory techniques, and library research. Prereq: Course Director approval required to add course.

Grading Basis: Medical School HP

MEDS 8007 - Clinical Renal (4-8 Credits)

4 wks. Max:4. A four-week elective course in electrolyte, hypertensive, acute and chronic renal failure, glomerular (including diabetes) disorders, and hospital services. The students will see consults on all services, learn to maintain and analyze flow sheets, and review problems with residents and fellows.

Grading Basis: Medical School HP

MEDS 8009 - Clin Infectious Diseases (4-8 Credits)

2-4 wks. Max:4. UCH and DHMC. Hospital assigned. Hospitalized patients with a variety of infectious diseases are available for study. Diagnosis, pathophysiology, immunology, epidemiology, and management, including use of anti-microbial agents are emphasized. Students attend and participate in ward rounds and conferences. Prereq: Completion of core requirements for 3rd year students. Restrictions: Accept 4th year students only. Note: a 2 week elective maybe available. Student must make arrangements with Student Affairs and be pre-approved by Program Director before being confirmed to take elective course.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

MEDS 8010 - Clin Gastroenterology (4-8 Credits)

4-12 wks. Max:2. Students will participate in work up of both hospitalized and ambulatory patients with gastrointestinal (GI) illnesses. Gi pathophysiology will be emphasized. Students attend weekly conferences in clinical gastroenterology, radiology and pathology. They are invited to observe procedures. Hospital is assigned.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

MEDS 8011 - Pulmonary Medicine (4-8 Credits)

4 wks. Max: 2. UCH, DHMC, and DVAMC. This elective offers broad experience in pulmonary and critical care medicine. Students participate in consultations, attend conferences and clinics. A wide variety of pulmonary and critical care cases are seen.

Grading Basis: Medical School HP

MEDS 8012 - Clinical Rheumatology (8 Credits)

4 wks. Max:1. Students will learn how to recognize, diagnose, and treat common rheumatic disorders. Students will attend all formal teaching conferences in the Division of Rheumatology and attend 6 or more outpatient clinics each week. Prereq: Completion of all third year clerkships.

Grading Basis: Medical School HP

MEDS 8013 - Endocrinology (4-8 Credits)

2-4 wks. Max:2. Introduction to evaluation and management of endocrine disorders via outpatient clinics and inpatient consults at VAMC, DHMC, and UCH. Endocrine-focused history-taking and physical examination with a complete problem-oriented approach to patient care. Multiple conferences and close interaction with fellows and attendings.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

MEDS 8014 - Hematology / Oncology (4-8 Credits)

2-4 wks. Max:1. Students are exposed to a wide range of patients seen in consultation for hematologic and oncologic problems. Students may also elect to attend the numerous subspecialty outpatient clinics for patients with various malignancies. Prereq: MED, OBGYN, PED, PSCH 7000.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 12.

MEDS 8015 - Care for the Under-served (8 Credits)

This elective is for students interested in Internal Medicine and care for under-served populations. Students will rotate in a clinic at Denver Health, the DAWN clinic (student-run clinic for under-served patients), and complete a healthcare disparities project.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MEDS 8017 - Hospice/Palliative Care (4-8 Credits)

2-4 wks. Max:1. This is an introduction to hospice and palliative care. You will become a member of the interdisciplinary team at the Hospice of Saint John, focusing on the physical, social, psychological, and spiritual aspects of patient care for the terminally ill. Requirement: Contact Dr. Youngwerth one week prior to starting via Email Jean.Youngwerth@ucdenver.edu.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

MEDS 8018 - Advanced EKG and Cardiac Arrhythmia Fort Collins Branch (4 Credits)

This course will build on the basic EKG skills achieved during the basic science and clinical clerkship to better understand the conduction system of the heart and review the physiology behind an array of fascinating cardiac arrhythmias. Instruction will be provided through lectures and clinical sessions. Students will receive instruction on ECG interpretation, using fundamentals of cardiac electrophysiology to guide their approach. These principles will be applied as they round on the inpatient electrophysiology service and observe diagnostic and therapeutic interventions in the electrophysiology lab. We will also provide an overview of cardiac devices (pacemakers and defibrillators) by rotating through the device clinic, participate in procedures such as cardioversions, trans-esophageal ultrasounds, and loop recorder implants. This course is designed to provide a base of knowledge that will be applicable for all students, regardless of their intended clinical field of interest.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MEDS 8019 - Geriatric Medicine Fort Collins Branch (8 Credits)

Welcome to the Geriatric Medicine elective. This course is designed to expose learners to the care of older adults across different care settings. This course will introduce students to the complexities of medical care for older adults, including challenges that are unique to the older adult population.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MEDS 8023 - Medicine Consult (4-8 Credits)

Medicine Consult is for students interested in learning about medical issues of surgical patients and performing general medical consultations for non-medical services. This elective will be useful to the student interested in a career in hospital medicine or surgical subspecialties. Offered for 2 or 4 weeks. Prereq: 3rd year medicine

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8025 - Medical Oncology (8-12 Credits)

4-6 wks. Max:2. Students will learn the basic aspects of medical oncology by evaluation of patients in the general oncology and subspecialty oncology clinics. They will attend the weekly multi-disciplinary tumor conferences and fellow didactic conferences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

MEDS 8032 - Corrections Health Care (4 Credits)

2 wks. Max:1. Provide primary care to inmates in corrections facilities. Experiences include manipulative or drug-seeking patients, the interface between health care and the legal system, and issues in correctional health care (ie., HIV, TB). Prereq: One month notice needed to schedule this elective.

Grading Basis: Medical School HP

MEDS 8034 - Critical Care St Joe's AI (8 Credits)

4 wks. Max:2. This course can meet Sub-I qualifications. Student functions as an intern-equivalent and admits patients during overnight call every third day. Student will attend daily ICU interdisciplinary rounds and enhance skills in reporting, interpreting clinical information, communication, and patient management plans. Student will present an EMB-research clinical question.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8037 - Medical ICU Acting Internship (8 Credits)

This rotation will provide training in the care of critically ill ICU patients. Emphasized skills will include management of respiratory failure, hemodynamic instability, severe electrolyte abnormalities, gastrointestinal emergencies and common ICU procedures. Prereq: Sub I in Medicine or Surgery.

Grading Basis: Medical School HP

MEDS 8100 - MEDS Elective Away (4-8 Credits)

This Medicine elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

MEDS 8600 - Research in Medicine (4-24 Credits)

2-12 wks. Course provides an opportunity for seniors to participate in research at the clinical or basic science level. The student must consult with Dr. Horwitz or Dr. Aagaard about the varieties of options available. Course is graded on a pass/fail basis only. Restrictions: Not available sections 49-50.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

MEDS 8630 - MEDS Research Away (8-16 Credits)

This Medicine research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2, 4, 6, or 8 weeks. This course is graded on a pass/fail basis only.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

NEUR 8000 - Neurology Acting Internships (8 Credits)

This acting-internship offers students advanced neurologic clinical experience in a structured teaching setting. The primary objectives for this rotation are to learn how to effectively manage neurologic patients in an inpatient setting, gain experience in neurologic examinations and learn the basis of neuroanatomy and neurologic differential diagnosis. Inpatient Neurology will provide the core clinical experience for this rotation.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

NEUR 8001 - Neurology Elective (8 Credits)

This elective offers students further clinical experience with patients who have neurologic disorders. Students can rotate on either the inpatient service or a mix of ambulatory clinics and inpatient services at University of Colorado Hospital.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

NEUR 8100 - NEUR Elective Away (4-8 Credits)

This Neurology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

NEUR 8600 - Research in Neurology (4-24 Credits)

2-12 wks. For further course information, contact the Chairman, Donald Gilden, M.D., 303-724-4326. Prereq: Offered with Chairman's approval only. The student must receive approval from the Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

NSUR 8014 - Advanced Neurosurgery (4-12 Credits)

2-6 wks. Max:8. This course can meet Sub-I qualifications. Intensive rotation emphasizing care and management of neurosurgical patients, with close patient responsibility. Weekly conferences and lectures required and students must present a case with topic discussion. Recommended for students with interests in neurosurgery, neurology, emergency medicine and trauma surgery.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

NSUR 8100 - NSUR Elective Away (4-8 Credits)

This Neurosurgery elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered for 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

NSUR 8600 - Research in Neurosurgery (4-24 Credits)

2-12 wks. A written evaluation must be sent to Dr. Michael Handler and Lauren Buckles. Prereq: Departmental approval must be obtained and all arrangements made at least one month in advance.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

NSUR 8630 - NSUR Research Away (4-24 Credits)

This Neurosurgery research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

OBGY 5000 - Introduction to OBGYN (1 Credit)

This course provides a preclinical introduction to the dynamic and multifaceted specialty of OB-GYN. Students will learn about comprehensive reproductive healthcare from a variety of clinician experts in both lecture and hands-on/simulation-based learning sessions (i.e. IUD insertion, pap smears, suture skills).

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

OBGY 8000 - General Obstetrics AI (8 Credits)

4 weeks. Max:1. This Sub-I course meets the UC SOM requirement for graduation. Offered at DHMC only. Includes experience in outpatient high risk obstetrics, inpatient antepartum, intrapartum, postpartum and family planning. Student works under clinical supervision of residents and attending staff.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OBGY 8001 - General Gynecology AI (8 Credits)

4 wks. Max:1. This Sub-I course meets the UC SOM requirement for graduation. Offered at DHMC only. Includes experience in inpatient/outpatient gynecology, family planning, operative gynecology and postoperative care. Student works under supervision of residents and attending staff.

Grading Basis: Medical School HP

OBGY 8004 - High Risk Maternal/Fet AI (8 Credits)

4 wks. Max:1. Intensive exposure to problems of high-risk obstetrics. Student will work under supervision of the Maternal-Fetal Medicine Staff. Student will attend high-risk clinics, have primary responsibility for patient care in antepartum unit under supervision of chief resident.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OBGY 8005 - Gynecologic Oncology Acting Internship (8-12 Credits)

4 or 6 wks. Max:1. Student will attend GYN oncology clinics and scrub on all GYN oncology surgery, functioning as acting intern. All pathology will be reviewed with GYN oncologist. Literature review on selected subject required. Clinical research opportunities available.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

OBGY 8009 - GYN Subspecialties (8-12 Credits)

4 or 6 wks. Max:1. Student attends outpatient gynecologic diagnostic clinics, colposcopy and laser surgery, urogynecology, urodynamics, hysteroscopy, and pelvic pain. Student works under supervision of Gyn staff. Directed study and clinical research. Attendance at colposcopy biopsy review conference, preoperative and Gyn teaching conferences required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

OBGY 8011 - Family Planning (8 Credits)

4 wks. Max:1. This elective is designed to make the student proficient in providing family planning services: contraception, options counseling and termination procedures. Substantial emphasis will also be placed on participation in ongoing research activities of the division. Prereq: Passing grade in third year Women and Newborns clerkship (IDPT 7030).

Grading Basis: Medical School HP

OBGY 8012 - UH Gynecology AI (8 Credits)

4 wks. Max:1. This course can meet Sub-I qualifications. This course is designed to allow students to become integrally involved with the general gynecology service. Student will partake in all clinical activities of the service, including operative procedures, management of inpatient gynecology conditions, and emergency room consultation. Prereq: Passing grade in third year Women and Newborns Rotation (IDPT 7030).

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OBGY 8015 - Group Prenatal Care: Pregnancy & Parenting Partners (4 Credits)

Students will follow a cohort of women through a group prenatal and postpartum care program. Students will work with Certified Nurse Midwives (CNM) and group facilitators to provide prenatal exams and to facilitate educational sessions in an underserved population.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

OBGY 8016 - Doula Care and Racial Equity (8 Credits)

Students will learn about doula care and their critical role in improving outcomes for communities of color. Students will participate in doula training, shadow doulas and physicians, participate in simulations, and have in-person lectures about racism in the birth space. This learning will be supported by readings and resources.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

OBGY 8100 - OBGY Elective Away (4-8 Credits)

This Obstetrics/Gynecology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

OBGY 8600 - Research in OBGYN (4-24 Credits)

2-12 wks. Prereq: Departmental approval must be obtained and all arrangements must be made one semester in advance. The student must receive prior approval from the Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

OBGY 8630 - OBGY Research Away (8-16 Credits)

This Obstetrics/Gynecology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

OPHT 5610 - Biology of the Eye (2 Credits)

This one credit course introduces students to contemporary topics in vision science and ophthalmology by integrating cutting-edge basic science with translational research and clinical advances. The overall objective is to familiarize students with the core concepts and challenges in clinical ophthalmology and vision research.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

OPHT 8000 - Advanced Ophthalmology (4-8 Credits)

4 wks. Max:1. This elective is designed for senior students seriously considering a career in Ophthalmology. Students rotate at each hospital with in-depth exposure to each subspecialty area. Students are expected to participate with in- and out-patient care, call activities, teaching rounds, and conferences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OPHT 8002 - Pediatric Ophthalmology (4-8 Credits)

This elective is designed for senior students seriously considering a career in Ophthalmology. Students rotate at Children's Hospital Colorado with in-depth exposure to the diagnosis and clinical/surgical management of pediatric eye disease. Students are expected to participate with in- and out-patient care, call activities, teaching rounds and conferences. Prerequisite: OPHT 8000

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OPHT 8003 - Neuro-ophthalmology (4-8 Credits)

This elective is designed both for students considering a career in ophthalmology, as well as for students interested in neurology. Students will participate in the care of adults and children with diverse neuro-ophthalmologic disease through outpatient clinics, consults, and surgery.

Grading Basis: Medical School HP

Typically Offered: Spring.

OPHT 8004 - Ophthalmology - Glaucoma (4-8 Credits)

This elective is designed for students planning to pursue a career in ophthalmology. This elective is available only to students who have already completed a 4-week elective in OPHT 8000.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OPHT 8100 - OPHT Elective Away (4-8 Credits)

This Ophthalmology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks. Departmental approval required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

OPHT 8600 - Research Ophthalmology (4-24 Credits)

2-12 wks. A final written evaluation must be mailed to Course Director who will assign the final grade. Prereq: Arrangements must be made one month in advance. Departmental approval required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

OPHT 8630 - OPHT Research Away (4-16 Credits)

This Ophthalmology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

ORTH 5004 - Orthopedic Summer Externship (12 Credits)

The University of Colorado's Department of Orthopedics offers a six-week summer externship program for medical students interested in orthopedics. The program provides structured research courses and research opportunities, as well as early exposure to clinical orthopedics for students between their first and second year of medical school. Prereq: Rising MS2.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

ORTH 5005 - Introduction to Orthopedics (1 Credit)

This course consists of 14 weekly one-hour classroom sessions including interactive lectures covering the orthopedic subspecialties, small group discussion and case presentations. An elective reading list is provided. There are also four one-half day shadowing opportunities in the operating room and clinics. Student evaluation is pass/fail by attendance.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

ORTH 8001 - Orthopaedic Primary Care (4-8 Credits)

2-4 wks. Max:4. This course is designed as an elective in musculo-skeletal medicine in route to a career in primary care or other overlapping field. The focus is on outpatient musculoskeletal medicine. Restrictions: Offered spring semester.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Spring.

ORTH 8002 - Ortho Advanced Career Elective (8 Credits)

This advanced career elective is designed to offer extensive orthopedic medical knowledge and clinical experience to students who have completed ORTH 8000 and are seeking additional orthopedic training that would normally be obtained through elective away rotations. Must have completed ORTH 8000 AI.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Summer.

ORTH 8005 - Sports Medicine (4-8 Credits)

Max:1. Course provides clinical experience in musculo-skeletal sports medicine. Students will primarily be based in the CU Sports Medicine Clinic. Opportunities include participation in the clinic, operating room and the training room.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

ORTH 8006 - Alpine Orthopedics (8 Credits)

Orthopedic elective (4 weeks) designed for students on the path to orthopedic surgery residency who are seeking education and experience in a small mountain community. The course will be based out of Crested Butte, CO which has a high volume of sports injuries. Course will also offer exposure to rural orthopedics in Gunnison & Telluride. Prerequisite: Must have completed ORTH 8000 and be applying to orthopedic residency

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

ORTH 8007 - Intro to Clinical Orth Surgery (4-8 Credits)

Introduction to Orthopedic Surgery is designed to prepare fourth year medical students for sub-internship rotations in Orthopedic Surgery. Course includes lectures in anatomy, common injuries, treatment plans, and surgical intervention for eight sub-specialties of Orthopedics including: Trauma, Spine, Hand, Pediatrics, Sports, Adult Recon. Requisite: Students who plan to complete a sub-internship in Orthopedics and who are planning to pursue an orthopedic residency.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Spring.

ORTH 8100 - ORTH Elective Away (8 Credits)

This Orthopedic elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

ORTH 8600 - Research in Orthopedics (4-8 Credits)

4-12 wks. Provides an opportunity to participate in research at the clinical or basic science level. The student should contact the Departmental Office 3-4 months in advance to arrange a meeting with a member of the Orthopaedics faculty to define a project. Prereq: Approval from Course Director and Associate Dean for Student Affairs required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

ORTH 8630 - ORTH Research Away (4-16 Credits)

This Orthopedic research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

OTOL 6660 - Otolaryngology Career Elective (1 Credit)

The Career Elective in Otolaryngology - Head & Neck Surgery will provide diverse sub-specialty clinical and operative exposure with physician specialists who diagnose and treat disorders of the ears, nose, throat and related structures of the head and neck.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

OTOL 8000 - Clinical Otolaryngology (8-16 Credits)

4 or 6 wks. Max:3. Recommended for students considering an ENT career. Offers in-depth clinical and operative exposure. Also useful for those seeking primary care to further hone head and neck exam skills and treatment of ENT pathology.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

OTOL 8050 - Otolaryngology (ENT) (4 Credits)

Patient care in relation to head and neck - ear, nose and throat ailments. Students will experience both outpatient and inpatient interactions. Will see procedures in clinic as well as in the operating room and participate in rounds at the hospital.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OTOL 8100 - OTOL Elective Away (4-8 Credits)

This Otolaryngology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

OTOL 8600 - Research Otolaryngology (4-24 Credits)

4-12 wks. Objectives: 1) work in supervised environment to gain appreciation for research design, criticism and statistical analysis: 2) complete research project with potential to publish in peer-reviewed journal. Prereq: Prior approval from Associate Dean and course director required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

OTOL 8630 - OTOL Research Away (4-16 Credits)

This Otolaryngology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

PATH 8000 - Pathology (4-8 Credits)

2-4 weeks. Max:2. The Department assigns hospital by interests of the student. Anatomic pathology includes autopsy, surgical pathology, hematopathology and cytology. Clinical pathology includes clinical chemistry, microbiology, coagulation/blood banking and molecular diagnosis. Intended for those interested in clinical medicine, especially a pathology career.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PATH 8100 - PATH Elective Away (8 Credits)

This Pathology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PATH 8600 - Research in Pathology (4-24 Credits)

2-12 wks. Prereq: Department approval must be obtained and all arrangements made at least one month in advance. The student must also receive approval from the Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

PATH 8630 - PATH Research Away (4-16 Credits)

This Pathology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

PATH 8990 - Doctoral (1-10 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 10.

PEDS 8000 - Pediatric AI (8 Credits)

4 wks. Max:3. This course can meet Sub-I qualifications. Designed for those students who are interested in further training in pediatrics. Students will be integrated as a functional member of a pediatric ward team. Restrictions: A 2-month advance notice is required to drop this course.

Grading Basis: Medical School HP

PEDS 8003 - Community Prenatal and Perinatal Care Elective (4 Credits)

This 2-week elective will include exposure to the outpatient prenatal and postnatal obstetrical care of a patient population struggling with the social determinants of health. The student will gain a deeper understanding of the effects of the social determinants of health in the peri/postnatal setting and will experience the resources that support prenatal and postnatal patients. They will experience full spectrum prenatal and postnatal care from the OB intake assessment (including behavioral health assessment) to the post-partum visits and initial well childcare.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

PEDS 8004 - Pediatric Cardiology (8 Credits)

4 wks. Max:1. Evaluation of children with heart disease by history, physical examination, electrocardiography, roentgenography, echocardiography, and cardiac catheterization will be stressed. The student will make rounds with the cardiology team, see consults, attend outpatient clinics, and participate in cardiac catheterizations and conferences.

Grading Basis: Medical School HP

PEDS 8005 - Allergy and Immunology CHCO (4-8 Credits)

The student will work alongside allergy and immunology providers and share in the care of patients from clinic, as well as inpatient consults. Opportunities will be provided to observe skin testing, food/drug challenges, immuno-therapy, and pulmonary function testing. Offer 2, 4 wk

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Spring, Summer.

PEDS 8007 - Child Abuse and Neglect (4-8 Credits)

2 wks. Max:1. Held at TCH and Kempe Center. Basic principles of Child Abuse and Neglect; participate in team evaluation of outpatient and inpatient child abuse cases, and attend court with team members. Primarily observational and includes independent study. One case write-up required.

Restrictions: Not available sections 21-24.

Grading Basis: Medical School HP

PEDS 8008 - Birth Defects/ Genetics (4-8 Credits)

4,6,8, or 12 wks. Max:1. Rotation includes experience in the General Genetics, Inherited Metabolic Diseases, Muscle, Neurocutaneous and outreach clinics. Students will participate in diagnosis, pedigree assessment and management. Students will participate in consultations with faculty, attend conferences, visit laboratories; an oral presentation is required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

PEDS 8009 - Peds Infectious Disease (8 Credits)

4 wks. Max:1. This course provides experience in the pathophysiology, diagnosis, and therapy of childhood infections. Students evaluate in-patients and present cases at daily teaching rounds. Experience in the diagnostic Microbiology laboratory is provided. There is a weekly HIV/infectious disease clinic.

Grading Basis: Medical School HP

PEDS 8011 - Pediatric Pulmonary (8 Credits)

Max:1. Basic background knowledge in pediatric pulmonary physiology and disease will be provided. The student will attend rounds, clinics and weekly conferences and participate in hospital consultations. Students will be expected to present a seminar/case discussion on a pediatric pulmonary topic.

Weeks offered 4

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

PEDS 8012 - Pediatric Neurology (4-8 Credits)

4,6, or 12 wks. Max:1. Child Neurology provides students with the opportunity to gain experience evaluating children with a wide variety of neurological problems. Students will round on hospital and clinic patients, complete assigned readings and attend Neurology grand rounds.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

PEDS 8013 - Pediatric Endocrinology (4-8 Credits)

Max:1. A large variety of patients with abnormalities of growth and pubertal development, thyroid disorders, and diabetes mellitus are reviewed and treated each week. Seminars on selected topics are scheduled three times per week. Weeks offered 4.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8014 - Pediatric Rheumatology Clinical Elective (4-8 Credits)

Course description to be added later in OASIS

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8015 - Pediatric Neonatology AI (8 Credits)

4 wks. Max:3. This course can meet Sub-I qualifications. Student assigned to UCH, DHMC, or TCH and will participate actively in the care of critically-ill infants including work rounds, attending rounds, conferences and night call. Experience will be gained in procedures and ventilator management.

Grading Basis: Medical School HP

PEDS 8018 - General Academic Peds (4-8 Credits)

Max:1. This course offers exciting experience in ambulatory pediatrics at The Children's Hospital. There are 9 educational conferences per week. No night call. offer 2 wks

Grading Basis: Medical School HP

PEDS 8020 - Adolescent Medicine (4-8 Credits)

4 wks. Max:1. Provides basic knowledge and clinical skills in diagnosis and management of medical problems during adolescence. Including development of skills in interviewing and counseling adolescents in various health care settings. Students will prepare and present a seminar/case discussion on this topic.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8021 - Pediatric Disability Medicine (8 Credits)

Pediatric Disability Medicine is a four-week course designed to give students exposure to important concepts of disability, issues affecting children with disabilities and their families, multidisciplinary clinical care of this population and an introduction to transition to adulthood.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8022 - Peds Gastroenterology (8 Credits)

Max:1. Clinical rotation on pediatric gastroenterology inpatient and outpatient services and procedure unit and scheduled conferences. This rotation is designed for students with a specific interest in pediatrics and/or gastroenterology.

Grading Basis: Medical School HP

PEDS 8024 - Child Development/Behavior (4-8 Credits)

2 or 4 wks. Max:1. Medical students will participate in the medical assessment and treatment of children with developmental and behavioral problems. They will attend lectures, participate in the seminars, and observe multidisciplinary assessments of children with developmental disorders.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

PEDS 8025 - Peds Emergency Medicine (4-8 Credits)

Max:1. Students gain experience in assessment/management of common conditions in a pediatric emergency department including minor emergencies, acutely ill children, and traumatic diagnoses. Procedural experience at student's level, and at attending's discretion, will also be gained.

Grading Basis: Medical School HP

PEDS 8026 - Pediatric Nephrology (4-8 Credits)

4 wks. Max:1. Students will actively participate in the care and evaluation of patients under the direction of the attending and participating resident. Common problems such as hematuria, proteinuria, electrolyte disturbances, chronic renal insufficiency, hypertension, hemodialysis, peritoneal dialysis, and renal transplantation are addressed.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PEDS 8027 - Pediatric ICU AI (8 Credits)

4 wks. Max:1. This course can meet Sub-I qualifications. The sub-intern is responsible for evaluation and continuing care of patients under the supervision of a Fellow and Attending. The student will learn basic pathophysiology of critical illness and enhance skills in reporting and interpreting clinical data, and patient management. Prereq: IDPT 7020 Infant/Adolescent Care.

Grading Basis: Medical School HP

PEDS 8029 - Breastfeeding Management (4 Credits)

2 wks. Max:2. An introduction to breastfeeding as a medical topic, with precepting by lactation specialists at clinical sites and self-directed learning through complementary activities. Assessment and management of mother/infant breastfeeding dyad is emphasized. Contact Dr. Bunik two weeks before start or Laura.Primak@uchsc.edu.

Grading Basis: Medical School HP

PEDS 8030 - Vaccination in Pediatrics (4-8 Credits)

4 wks. Max:2. Students develop extensive knowledge in ambulatory general pediatrics with an emphasis on vaccine preventable diseases. Experiences include didactics on vaccination, vaccine screening, advocacy, and report writing. Exposure to laboratory vaccine research supported but requires availability. Prereq: MS III Pediatric Rotation.

Grading Basis: Medical School HP

PEDS 8031 - Pediatric Hematology/Oncology (8 Credits)

Students will participate in the clinical activities of the Pediatric Hematology-Oncology Service, both inpatient and outpatient. They will be involved in patient care, perform procedures including lumbar punctures and bone marrow aspirated/biopsies, and attend relevant conferences. Prereq: Successful completion of all third year clerkships. No restrictions at this time. Course will also be offered to externs.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8100 - PEDS Elective Away (4-8 Credits)

This Pediatric elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PEDS 8600 - Research in Pediatrics (4-24 Credits)

2-12 wks. Prereq: Student must receive departmental approval one semester in advance of rotation. Approval from the Associate Dean for Student Affairs required. Restrictions: Sections 49-50 not available.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 32.

PEDS 8630 - PEDS Research Away (4-16 Credits)

This Pediatric research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

PHMD 8000 - Physical Med & Rehab (4-8 Credits)

Max:4. This elective provides experience in the diagnosis and treatment of patients with pathology of the neurologic and musculoskeletal systems. 4 different locations (VA, Denver Health, University Hospital, The Children's Hospital) allow treatment of a variety of conditions related to rehabilitation.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PHMD 8100 - PHMD Elective Away (4-8 Credits)

This Physical Medicine and Rehabilitation elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Prereq: 800

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PHMD 8600 - Research Physical Med (4-24 Credits)

2-12 wks. Written evaluation must be sent by individual instructor, with course director responsible for final grade. Prereq: PHMD 8000. Obtain departmental approval and all arrangements made at least one month in advance and prior approval from Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

PRMD 6642 - Legislative Role Health Care Policy (2 Credits)

Grading Basis: Letter Grade

PRMD 8003 - Specialty Preventive Med (4-8 Credits)

4 wks. Max:4. Designed for students interested in exploring the field of preventive medicine. Tailored educational experiences in the Denver area in a variety of settings. Speak with course director to design this elective. Prereq: Course director approval required to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

PRMD 8100 - PRMD Elective Away (8 Credits)

This Preventive Medicine elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PRMD 8600 - Research Preventive Med (4-24 Credits)

2, 4, 8 or 12 wks. Designed for students interested in preventive medicine research. Tailored research experiences in the Denver area can be established in a variety of settings. Speak with the course director to design this elective. Prereq: Course Director and Associate Dean for Student Affairs approval required to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

PRMD 8630 - PRMD Research Away (4-16 Credits)

This Preventive Medicine elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

PRMD 9000 - Intercampus Spec Topics (1-10 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 10.

PSYM 8000 - Advanced Inpatient Psychiatry (8-12 Credits)

Students take responsibility as primary provider for seriously ill patients, work closely with treatment team directed by an attending psychiatrist. Students assume responsibilities for care of patients that interns typically assume: performing H&Ps, writing orders, giving "bad news" when appropriate.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

PSYM 8003 - Elective in Psychiatry (4-8 Credits)

Students in conjunction with the office of psychiatry medical student education, choose to work with patients on an inpatient psychiatry ward, outpatient clinic or other psychiatric units as a member of a treatment team.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PSYM 8004 - Advanced Child and Adolescent Inpatient Psychiatry (8-12 Credits)

4 or 6 wks. This Sub-I course DOES NOT meet the UC SOM requirement for graduation. Evaluate and manage adolescents with psychiatric disorders. Students will be members of multidisciplinary team learning about psychopathology, psychopharmacology, psychotherapy, family therapy and other treatment modalities. Students will learn about systems of care. Restrictions: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8006 - Clinical PSYM Consultation/Liaison (8-12 Credits)

Consultation-Liaison Psychiatry a unique discipline within the field of psychiatry which combines knowledge of medical illnesses, psychotherapy and psychopharmacology with an ability to forge liaisons within the medical community. Evaluate and help manage patients with psychiatric disorders within medical settings. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8007 - Clinical PSYM Emergency Services (8-12 Credits)

Learn elements of crisis intervention, and to make psychiatric diagnoses and evaluate lethality. Students will evaluate and help treat a broad range of psychiatric difficulties, and encounter the psychiatric and psychosocial problems they will see in their practices. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8008 - Forensic and Correctional Psych (4-8 Credits)

Introduction to the interface of criminal law and psychiatry. Students will be involved in the evaluation of people entering pleas of incompetency to stand trial and not guilty by reason of insanity as well as the treatment and restoration process. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8009 - Clinical PSYM Addiction (8-12 Credits)

Learn the essentials of identification, assessment, and treatment of patients with substance use disorders. Emphasis on screening and brief intervention techniques. Learn principles of detoxification for alcohol, opioids, and cocaine; interpretation of drug testing results; proper prescribing practices. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8010 - Clinical PSYM Eating Disorders (8-12 Credits)

Evaluate and manage patients with eating disorders under the direction of fellows and attendings. Student will gain specific knowledge of classification, epidemiology, etiology, physiology, and treatment of eating disorders. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8015 - Perinatal and Infant Mental Health (8 Credits)

Students will learn about maternal mental health during pregnancy and the first year postpartum, and gain understanding of infant mental health and the mother-baby relationship. Students will work in the following settings: outpatient mom-baby group therapy, psychiatric outpatient clinic, NICU, integrated mental health in OB/GYN and Young Mother's Clinic (pediatric primary care).

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8100 - PSYM Elective Away (4-8 Credits)

This Psychiatry elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PSYM 8600 - Research in Psychiatry (4-24 Credits)

2-12 wks. Research electives in various areas of Psychiatry. Contact Randy Ross, MD or Sharon Hunter, PhD for menu of research options. Prereq: The student must receive prior approval from the Associate Dean for Student Affairs and the course director to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

RADI 5005 - Clinical Ultrasound (1 Credit)

Ultrasound is being used by clinicians in many different settings for many different applications. This elective will introduce students to many of the primary applications for clinician-performed ultrasound. All of the meetings times will be devoted to hands-on ultrasound scanning. The scanning sessions will be in a small group setting with no more than six students per ultrasound machine. Students will be provided with pre-scanning session didactic materials to review.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

RADI 8000 - Diagnostic Radiology (4-8 Credits)

An introduction to the interpretation of images and the role of diagnostic imaging in patient care. Clinical observation, lectures, and independent study at UH/AOP. Only 2 days of absence permitted for any reason. Restrictions: Course not available sections 29 & 33. 4 wks. Max:4.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

RADI 8001 - Radiology for Non-Radiologists (2 Credits)

Two-week course providing specialty focused radiology education, designed to help students be prepared for both internship year and their future career. Students will spend time with specific sub-specialty trained radiologists, based on interest, while reviewing foundational radiology course work.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

RADI 8002 - Nuclear Medicine (4-8 Credits)

Max:2. Nuclear Medicine encompasses the various uses of radioactive compounds in medical diagnosis and therapy. Students participate in the supervision and interpretation of nuclear medicine procedures under the guidance of the staff/residents at the AOP. Students will attend daily conferences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

RADI 8003 - Pediatric Radiology (4-8 Credits)

Students will gain an understanding of the basics of pediatric imaging and correlation with anatomy and pathology. Students will learn basic approach to performance and interpretation of all imaging modalities including: x-ray, ultrasound, fluoroscopy, CT, MRI, nuclear medicine.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

RADI 8005 - Imaging Elective Fort Collins Branch (8 Credits)

This course is designed to build on your previously acquired basic Radiology knowledge and begin to explore more advanced Radiology topics as it is related to the field of Radiology as well as other specialties. Students will gain experience through a combination of on-site observation, self-directed independent learning, interactive ultrasound, and attendance of multi-disciplinary conferences and lectures. At the end of the rotation, you will have the opportunity to present an interesting case or imaging topic of your choosing to members of the education team and your peers.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

RADI 8007 - Interventional Radiology (4-8 Credits)

2-4 wks. Max: 3. Interventional Radiology is the treatment of disease conditions using minimally invasive means. These procedures are performed with X-rays, US, and CT guidance. The student will round with the team, participate in procedures, and attend daily conferences. Standard student evaluation used.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

RADI 8100 - RADI Elective Away (4-8 Credits)

This Radiology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. For rotation approval, students must first provide name, address, and phone number of preceptor to the course director. Students maintain sole responsibility for obtaining written evaluation. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

RADI 8600 - Research in Radiology (4-24 Credits)

Student must submit a research project description and the name of their preceptor to the course director prior to the start of the elective. Student is responsible for obtaining written evaluation 2 week rotation not Honors eligible.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

RADI 8630 - RADI Research Away (4-24 Credits)

This Radiology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 8 or 12 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

RAON 8005 - Radiation Oncology (8 Credits)

4 wks. Max: 2. The student will learn the basic tools and techniques of radiation oncology, evaluate patients before and after treatment, learn specialized exam techniques, participate in consultations and multi-modality cancer treatment planning. Students will attend and participate in multidisciplinary tumor conferences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

RAON 8100 - RAON Elective Away (8 Credits)

This Radiation Oncology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks. Prereq: RAON 8005. Departmental approval must be obtained one month in advance.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

RAON 8600 - Research RAD Oncology (8 Credits)

4 wks. This elective is designed to acquaint the student with current research developments, knowledge and techniques in radiation oncology. Prereq: RAON 8005. Departmental and Associate Dean of Student Affairs approval must be obtained and all arrangements made one semester in advance.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

RAON 8630 - RAON Research Away (8-12 Credits)

This Radiation Oncology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 or 6 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

SURG 5005 - Introduction to Surgery (1 Credit)

Intro to general surgery & a variety of surgical specialties with an emphasis on foundational skills & knowledge development.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

SURG 5094 - Department of Surgery Summer Research Program (12 Credits)

Department of Surgery Mentored Summer Research Program. You will be paired with a faculty mentor for a specific scholarly research project, guided through the completion of the project, and culminate in a research symposium.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

SURG 5660 - Career Elective In UROL (1 Credit)

Students will be exposed to the diverse spectrum of urologic practice through shadowing residents and attending's in clinic and observation in the OR. Students will spent 12.5 hours of observation in Urology with a faculty member split between the clinic and operating room. Students may be assigned to faculty at the University of Colorado Hospital or Denver Health. Students will be responsible for scheduling their observations times with the attending physician. Requirement: Must contact Course Director or Coordinator within the first two weeks of the course to arrange schedule after adding this elective.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

SURG 8000 - Gen Surg Univ AI (8-24 Credits)

4-12 wks. Max:4. This course can meet Sub-I qualifications. Students perform intern responsibilities on General Surgical Service at University of Colorado Hospital. Students alternate night call, write orders on assigned patients and participate in preoperative, operative and postoperative care of inpatients.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

SURG 8001 - Gen Surg DHMC AI (8-12 Credits)

4 or 6 wks. Max:3. This course can meet Sub-I qualifications. Join an Acute Care Surgery Team at a Level 1 Trauma Center. Course emphasizes pre-operative evaluation, operating room decisions and postoperative care outside the ICU. Student will attend clinics, rounds, conferences and surgical procedures.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

SURG 8002 - Gen Surg St Joseph's AI (8 Credits)

Held at Exempla St. Joseph Hospital with emergency & elective surgery. Emphasize pre- and postoperative care. Graduated operating room experience and exposure to skills lab. Active participation in surgery clinic. Housestaff team assignments with assigned faculty mentors. Active daily conferences, including Grand Rounds and M&M.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8004 - Multidisciplinary Breast Care (4-8 Credits)

Participating students will rotate with specialists in breast imaging, breast surgery, medical and radiation oncology, plastic surgery, and pathology to gain a 360-degree perspective on the evaluation and management of breast cancer. Students will attend the multidisciplinary breast cancer conferences to develop an understanding of how specialists work as a team to develop the optimal treatment plan.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

SURG 8008 - Advanced Cardiothoracic Surg (8 Credits)

4 wks. Max:2. This course can meet Sub-I qualifications. Adult cardiac and general thoracic surgery and critical care monitoring on the Cardiothoracic Service at UH and Denver VAMC. Students will participate in preoperative, operative and postoperative care.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8010 - Burn Critical Care/Surg (4-8 Credits)

4 or 6 wks. Max:1. This course can meet Sub-I qualifications. Acting sun-intern on Burn Service, working with Burn and related Surgical Critical Care cases. A high level of patient care responsibility, including bedside procedures, burn care and line charges. Work with attending faculty, and gain a multidisciplinary approach to burns.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

SURG 8011 - Hand Surgery (8 Credits)

Max:1. The students will participate in all aspects of the hand service including the emergency room, outpatient clinics, inpatient/outpatient operative and non-operative treatment. Emphasis is on acute hand and upper extremity diseases, trauma, their treatment and rehabilitation.

Grading Basis: Medical School HP

SURG 8012 - Urology Acting Internship (8-16 Credits)

4 wks. Max:4. This course can meet Sub-I qualifications. All students are required to rotate at hospitals, participate and perform physical exams, follow-up, clinic and surgeries. All Urology Conferences are mandatory. The Chief Resident, under supervision of the Attending, guides educational experiences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

SURG 8015 - Pediatric Surgery (4-12 Credits)

2,4, or 6 wks. Max:1. Student will assume major clinical responsibility for pediatric surgical patients, will work with housestaff, share patient care and work-ups, act as liaison to families, attend operations and teaching conferences, and actively participate in the surgical management of infants and children.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

SURG 8019 - Plastic Surgery (8 Credits)

Max:1. Students learn basic principles of wound healing, care, and management; management and reconstruction of maxillofacial trauma; head and neck cancer; congenital anomalies; tissue transplantation; cosmetic surgery; and plastic/reconstructive management of post-burn and post-surgical patients. Prereq: IDPT 7050.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8021 - Surgical Critical Care AI (8-12 Credits)

4 wks. Max:2. Assigned to surgical ICU, work with critical care residents, fellow and staff. Students gain experience in resuscitation, hemodynamic monitoring, mechanical ventilation, nutritional support, bedside ultrasound and all aspects in care of critically ill surgical patients.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

SURG 8030 - Transplant Surgery (8 Credits)

2-4 wks. Max:3. Medical student will round with transplant team, which includes: Surgeons, Nephrologists, and Hepatologists. They will be exposed to all aspects of transplant care including preoperative work up, donor surgery, transplant surgery, post-operative care.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

SURG 8032 - Vascular Surgery AI (8 Credits)

Students perform intern level responsibilities on the Vascular Surgery Service at UCH and Outpatient Based Lab. Students participate in pre, operative, and post-operative care for patients by scrubbing in on aortic reconstructions, carotid endarterectomies, lower extremity bypass, amputations, dialysis access, and peripheral endovascular cases.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8100 - Surg Elective Away (4-8 Credits)

This Surgery elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

SURG 8600 - Research in Surgery (4-24 Credits)

2-12 wks. Contact department for further course information. Prereq: The student must receive prior approval from the Associate Dean for Student Affairs and course director to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

SURG 8630 - SURG Research Away (4-24 Credits)

This Surgery research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 8 or 12 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

Office of Research Education

Overview

The Office of Research Education (ORE) is the home of 1 umbrella-admitting program:

- Biomedical Sciences (p. 335)

and 12 PhD-granting programs:

- Cancer Biology (p. 337)
- Cell Biology, Stem Cells & Developmental Biology (p. 340)
- Computational Bioscience (p. 343)
- Human Medical Genetics & Genomics (p. 346)
- Immunology (p. 349)
- Integrated Physiology (p. 352)
- Microbiology (p. 365)
- Molecular Biology (p. 368)
- Neuroscience (p. 371)
- Pharmacology and Molecular Medicine (p. 374)
- Rehabilitation Sciences (p. 378)
- Structural Biology, Biochemistry & Biophysics (p. 381)

ORE aligns within the School of Medicine and collaborates with the MD and the dual degree MD/PhD Program (p. 355).

Students in the Biomedical PhD programs receive the education and support to conduct innovative biomedical research. The PhD programs provide training in a wide variety of essential skills, including oral and written communication, leadership, and personal and professional integrity. The diverse, inclusive, and safe environment, fostered by the School of Medicine and Anschutz Medical Campus, supports the holistic training provided by our programs that prepares one for a wide range of career opportunities.

PhD Programs

- Biomedical Sciences (p. 335)
- Cancer Biology (PhD) (p. 337)
- Cell Biology, Stem Cells & Development (PhD) (p. 340)
- Computational Bioscience (PhD) (p. 343)
- Human Medical Genetics & Genomics (PhD) (p. 346)
- Immunology (PhD) (p. 349)
- Integrated Physiology (PhD) (p. 352)
- Medical Scientist Training Program (MD/PhD) (p. 355)
- Microbiology (PhD) (p. 365)
- Molecular Biology (PhD) (p. 368)
- Neuroscience (PhD) (p. 371)
- Pharmacology and Molecular Medicine (PhD) (p. 374)
- Rehabilitation Science (PhD) (p. 378)
- Structural Biology, Biochemistry & Biophysics (PhD) (p. 381)

Mission Statement

The 13 Biomedical PhD programs of The Office of Research Education in the School of Medicine collaborates to achieve a tripartite mission:

- To train excellent and diverse PhD graduate students in the critical thinking, research design and methods required for impactful biomedical research.
- To provide an intellectual center that enriches and furthers the curiosity that draws students and faculty to scientific research, innovation, education and communication.
- To foster strong scientific interactions between the basic science and clinical/translation research communities on our campus and across the nation to advance fundamental discoveries and improve health.

Contact Us

Associate Dean of Research Education

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Business Services Program Director

Jodi Cropper (jodi.cropper@cuanschutz.edu)

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Business Services Sr. Professional

Steve Frazier (stephen.frazier@cuanschutz.edu)

Biomedical Sciences

Overview

The Biomedical Sciences Program (BSP) is the premier umbrella admissions program for the AMC campus. Because the program is interdisciplinary, BSP students have the flexibility to choose one of 11 courses of study. We have over 200 training faculty representing all the basic and clinical departments on campus.

Admissions Requirements

To apply for admission applicants must submit the following:

- **Transcripts** | Transcripts from every institution you (the applicant) attended are required with your application. This includes transcripts from institutions regardless if a degree was earned (i.e. community colleges, transfers, etc.). For admissions review, a photocopy of an official transcript with the seal from the institution is sufficient. However, for enrollment, the graduate school requires an official copy sent from the institution directly. You can upload your unofficial photocopy to the application and you can have an official copy sent according to the following instructions:

Electronic Transcripts should be sent to graduate.school@ucdenver.edu

OR

Mail a physical copy to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

- **Letters of Recommendation** | Three (3) letters of recommendation are required as part of the application. By indicating your three (3) references on your application, they will be notified via email* to submit their letter of recommendation for you online. The Admission Committee assigns considerable weight to these letters in assessing a student's qualifications and probable success as a scientist. It is advantageous to have letters submitted by faculty who are well acquainted with the applicant's academic performance, research experience, and achievement potential.

BSP accepts a limited number of students each year and there are very few fellowships available for international students. We advise international students to consider applying through individual programs on our campus. Since tuition and fees are paid for and a stipend is received for all students, a financial affidavit showing adequate funds to live and study in the United States is not required during the application process.

Students whose native language is not English or who have completed their studies at an institution where English was not the language of instruction, must demonstrate English language proficiency by submitting scores of the Test Of English as a Foreign Language (TOEFL) or its equivalent (IELTS).

Degree Requirements

Year 1

Fall		Hours
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science	2
BMSC 7810	Core Topics in Biomedical Science	2
BMSC 7650	Research in Biomedical Sciences ^{Section 001}	1-3
BMSC 7650	Research in Biomedical Sciences ^{Section 002}	1-3
Hours		12-16

Spring

Complete 2 Elective Courses (selected by student)		
BMSC 7650	Research in Biomedical Sciences ^{Section 003}	1-3
Hours		1-3
Total Hours		13-19

Learning Objectives

The BSP trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts in the biomedical sciences.
- Understand the basic principles underlying numerous different disciplines within the biomedical sciences
- Read and critically evaluate the scientific literature.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

Courses

BMSC 7650 - Research in Biomedical Sciences (1-3 Credits)
Research rotation for students in the biomedical sciences in PhD program. Prereq: Consent of Instructor. Previously offered as IDPT 7650
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 20.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

BMSC 7655 - Preceptor Experience (1-5 Credits)
This course is intended for MD, MD-PhD, or other dual degree students who have successfully completed all coursework for Phases I and II of SOM curriculum, are on leave of absence from SOM and wish to maintain clinical exposure and training during the leave. Prereq: All Phase I and II SOM courses.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 5.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

BMSC 7811 - Responsible Conduct of Research (1 Credit)

This course provides training in the responsible conduct of biomedical research. It is geared towards early PhD graduate students and meets NIH guidelines. Ethical issues associated with specific topics commonly encountered by graduate students are presented and discussed.

Grading Basis: Letter Grade

Typically Offered: Fall.

BMSC 7812 - Rigor and Responsibility in Biomedical Research (1 Credit)

Course will integrate the concepts of rigor, repeatability and reproducibility by combining both wet and dry lab components focused on teaching these concepts and laboratory skills. We will seek to make these concepts routine considerations during the design and execution of any type of experiment. Instructor consent required.

Grading Basis: Satisfactory/Unsatisfactory

Typically Offered: Spring.

BMSC 7820 - Statistics and Data Analyses for the Biomedical Sciences (3 Credits)

This is an introductory course designed for students seeking a basic understanding of statistical concepts and applications. Students will develop statistical literacy and will be taught how to perform basic data analyses, including data summarization, graphical skills, and simple statistical methods for estimation and hypothesis testing. Students will learn how to read and evaluate statistical writing and how to write basic statistical methods. The course will include limited statistical computer programming using the R programming language. The course will not focus on mathematical formulas but will rather focus on building students' intuition and familiarity with statistical concepts. We will cover concepts such as random sampling, formulating proper hypotheses, bias, power and sample size, and multiple testing. Statistical methods will include both binary and continuous outcomes, including binomial testing, chi-square tests, t-tests, non-parametric tests and basic linear regression. Course examples will prioritize biologic examples routinely encountered in medical research studies. Prerequisites: Prospective students must be enrolled in a ORE graduate program or have explicit permission from the instructor.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

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Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Jessica Gamez

Program Administrator

Cancer Biology (PhD)

Overview

The Cancer Biology Training Program at the University of Colorado Denver | Anschutz Medical Campus is an interdepartmental program leading to the PhD in Cancer Biology. The Cancer Biology Program combines training in the basic biomedical sciences with opportunities to apply clinical and translational research to studies on human cancer.

Our highly accomplished training faculty includes over 50 basic and clinical scientists from 13 departments and divisions. Our curriculum is rigorous, yet flexible, and provides opportunities for advanced study in cellular and molecular oncology, as well as the translational medical sciences. Our research community includes a NIH/NCI designated Comprehensive Cancer Center, which brings together scientists with diverse research approaches to focus on the problem of cancer. The training program in cancer biology is supported by a NIH/NCI T32 training grant that provides funding for pre and post-doctoral trainees.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online Graduate School application.
- A \$50.00 domestic and \$75.00 international non-refundable application fee [credit card (on-line only), check, or money order]. No application will be processed unless this fee is paid.
- One (1) official transcript of all academic work completed to date. To be considered "official", the transcripts must come from the issuing institution directly to the University of Colorado Denver Graduate Admissions.
 - Electronic Transcripts should be sent to: graduate.school@ucdenver.edu
 - If sending a physical transcript, please mail to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

- Three (3) letters of recommendation.
 - The most informative letters will come from Professors who have mentored you in your research experiences. Professors who have taught science classes you have been enrolled in, or whom you have worked with in an advisory capacity, are also good choices. We do not recommend that you ask postdocs, technicians or fellow students for letters. Likewise, members of the community are generally not good choices, as typically their understanding of biomedical PhD training, and hence their ability to evaluate your potential, is limited.

International students must meet ALL of the requirements above and those required by International Admissions.

Degree Requirements

A minimum of 3 elective credits are required (as specified in the CANB handbook) in addition to the specified courses below.

First Year

Code	Title	Hours
FALL		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science <small>Student May Select</small>	2
BMSC 7810	Core Topics in Biomedical Science <small>Cancer Biology</small>	2
BMSC 7811	Responsible Conduct of Research	1
CANB 7650	Research in Cancer Biology ⁰⁰¹	1-10
CANB 7650	Research in Cancer Biology ⁰⁰²	1-10
CANB 7613	Research Seminars and Journal Club	1

Code	Title	Hours
SPRING		
CANB 7600	Molecular Mechanisms of Cancer	4
CANB 7690	Grant Writing in Cancer Biology	2
CANB 7650	Research in Cancer Biology ^{0V3}	1-10
CANB 7610	Pathobiology of Cancer Mini-Course	1

Suggested Elective:

CANB 7602	Special Topics in Cancer Biology	1
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Code	Title	Hours
SUMMER		
CANB 8990	Doctoral Thesis	1

Second Year

Code	Title	Hours
FALL		
CANB 7650	Research in Cancer Biology ^{0V3}	1-10
CANB 7613	Research Seminars and Journal Club	1
<i>Electives as Desired</i> ^{3 credits of electives with only 1 credit from CANB 7602}		

Code	Title	Hours
SPRING		
CANB 7650	Research in Cancer Biology ^{0V3}	1-10
CANB 7613	Research Seminars and Journal Club	1
CANB 7610	Pathobiology of Cancer Mini-Course	1
CANB 7602	Special Topics in Cancer Biology ^{If didn't complete first year}	1

Electives as Desired ^{3 credits of electives with only 1 credit from CANB 7602}

Code	Title	Hours
SUMMER		
CANB 8990	Doctoral Thesis	1

Third Year

Code	Title	Hours
FALL		
CANB 7650	Research in Cancer Biology ^{0V3}	1-10
CANB 7613	Research Seminars and Journal Club	1
<i>Electives as Desired</i>		

Code	Title	Hours
SPRING		
CANB 7613	Research Seminars and Journal Club	1

CANB 8990	Doctoral Thesis	Take after completing comps exam	1-10
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Electives as Desired

Code	Title	Hours
SUMMER		
CANB 8990	Doctoral Thesis	1

Fourth Year & Beyond

Code	Title	Hours
CANB 8990	Doctoral Thesis	1-10

*Enroll in 5 credits (Fall/Spring); 1 credit (Summer)**Electives as Desired*

Learning Objectives

The Ph.D. program in Cancer Biology trains graduate students to become proficient and successful investigators who are able to:

1. Demonstrate a basic knowledge of central concepts in the biomedical sciences.
2. Understand the current concepts in Cancer Biology.
3. Read and critically evaluate the scientific literature.
4. Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
5. Orally communicate ideas and research results effectively.
6. Effectively communicate ideas and research results in written form.
7. Integrate and apply the communication and research skills through oral presentations at scientific seminars, conferences, and other venues, submission of competitive applications for research funding, authorship of abstracts, peer-reviewed publications, and a thesis dissertation.

Training Goals

Training in the Cancer Biology PhD Program is based on six comprehensive training fundamentals that strive to integrate knowledge bases with interrelated skills.

Laboratory based training

Through conduct of laboratory-based research trainees utilize their didactic knowledge base; learn experimental design and hypothesis testing, implementation and problem solving, data interpretation and hypothesis revision, and oral and written communication skills.

Didactic knowledge base

Our coursework provides students with a firm foundation in cancer biology and innovative technologies to enable them to conduct the most relevant and cutting-edge research.

Hypothesis driven research

Our training includes a strong emphasis on skill development for hypothesis generation and testing. These skills are emphasized in course work, journal clubs, written and oral communication, clinical exposure and laboratory research.

Clinical relevance

We believe that understanding the patient experience and the clinical relevance of their laboratory research will help students to better focus their research plan and develop more nuanced hypotheses. Many clinical related opportunities are available including clinic shadowing and special topics courses that include options to learn about clinical trial design, drug resistance, drug targeting of cancer subtypes, etc.

Communication skills

Research advances are only achieved if scientific discovery is effectively communicated to the rest of the scientific community and the public. Written and oral presentation skills are developed by presentations in seminars and journal clubs, written research proposals and fellowship applications.

Career and professional development

Opportunities for professional development are available throughout a student's matriculation. These include strengths and goals evaluation, mentoring by the primary mentor and research advisory committee, exposure to various scientific career paths, and professional networking at scientific meetings.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

CANB 7600 - Molecular Mechanisms of Cancer (4 Credits)
This is an advanced course that will focus on mechanisms of cancer initiation and progression. The course will include didactic presentations, primary literature analysis and workshops. The course is open to all graduate students but requires some prior knowledge of Cancer Biology.
Grading Basis: Letter Grade
Typically Offered: Spring.

CANB 7602 - Special Topics in Cancer Biology (1 Credit)
Special topics of particular interest to graduate students in the Cancer Biology program. Registration requires department approval. Max hours: 4 credits/4 topics. Requisite: 008754
Grading Basis: Letter Grade
Repeatable. Max Credits: 1.
Typically Offered: Spring.

CANB 7610 - Pathobiology of Cancer Mini-Course (1 Credit)
Provide understanding of clinical issues associated with human cancer. Contains didactic and lab components. The latter will focus on pathology of human tumors at macroscopic/microscopic levels. Students will gain understanding of cancer diagnosis/epidemiology/treatment through student of specific tumor types. Prerequisite: Students are required to take this course twice during their time in the CANB program. IDPT 7806, IDPT 7807, IDPT 7808, IDPT 7809.
Grading Basis: Letter Grade
Repeatable. Max Credits: 1.
Typically Offered: Spring.

CANB 7613 - Research Seminars and Journal Club (1 Credit)

Current research topics in experimental pathology, virology, and tumor biology. Graduate students and faculty presentations.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7620 - Histophysiology (3 Credits)

Discussions of cell interactions, tissue physiology, and renewal based upon the histologic cell types and structures present. Where pertinent, pathologic alterations will be introduced to facilitate identification of the important normal functions/structures.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CANB 7640 - Bioinformatics (2 Credits)

This course introduces basic concepts of bioinformatics needed to perform large-scale genomic data mining. A computer workshop will provide students with the relevant and minimal skills to analyze, access and visualize high-throughput data using open source programs and public databases. Prerequisites: IDPT 7806, IDPT 7807, IDPT 7808, IDPT 7809 ; Corequisite: BIOS 6606

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7650 - Research in Cancer Biology (1-10 Credits)

Research work in cancer biology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CANB 7660 - Advanced Topics: CANB (1 Credit)

The specific topics covered in this course vary from year to year. For Fall 2011 the topic will be "Cancer cells and their environment: how the extracellular milieu influences tumor progression" offered by Dr. Schedin.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7680 - Hypothesis Development and Experimental Design (3 Credits)

Students will discuss recent research papers and develop new hypotheses that extend the findings in the papers. Research proposals to test the hypothesis will be written and an oral defense of the proposal will be performed. Prereq: CANB 7600, IDPT 7806, IDPT 7807, IDPT 7808, IDPT 7809.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7690 - Grant Writing in Cancer Biology (2 Credits)

This course will use didactic presentations and writing workshops to develop a fellowship grant in the NIH style. Focus will be on grantsmanship, persuasive writing and the peer review system.

This course will run consecutively with CANB7600. Corequisite with CANB 7600

Grading Basis: Letter Grade

Typically Offered: Spring.

CANB 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in cancer biology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

PHCL 7605 - Responsible Conduct of Research (1 Credit)

The Department of Pharmacology in the University of Colorado School of Medicine organizes and offers an interactive course during the fall semester entitled "Responsible Conduct of Research". The course is designed to inform students, trainees and faculty to the NIH requirements for ethical and responsible research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

Policies

Publication Requirement: Publications are the culmination of the research done in the lab. It is the obligation of all scientists to share their findings with their peers and the public. Students are required to have at least one primary, first-author paper submitted and in review at a peer-reviewed journal at the time of their thesis defense. The student's manuscript should be the focus of their thesis work. Under exceptional circumstances, co-first author publications may fulfill this requirement with approval of the steering and thesis committees. The decision to let the student defend is at the discretion of the thesis committee and student's mentor.

Contact Us

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Program Administrator

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Cell Biology, Stem Cells & Development (PhD)

Overview

In the Cell Biology, Stem Cells and Development (CSD) PhD program, our students utilize hypothesis-driven experimental approaches and cutting edge technologies to pursue important questions from basic mechanisms in developmental and cell biology to translational applications of stem cell biology.

CSD students and faculty have common interests in understanding the molecular and cellular mechanisms that underlie development, disease, stem cell biology and regeneration. This common curiosity promotes extensive interaction among labs and creates a fantastic intellectual environment. Our CSD Program is structured to provide training in hypothesis-driven experimental approaches coupled with cutting edge technologies. We foster creativity and independence, enabling students to pursue important questions at the junctures between the fields of cell, developmental, and stem cell biology.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online application
 - Personal Statement: A roughly one-page personal statement describing the applicant's career goals and purpose for seeking a Cell Biology, Stem Cells & Development PhD
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Past Work Statement
 - Three recommendations: to be completed by people who know your professional, academic and/or personal achievements or qualities well. As such, references must be from professional contacts, such as employers, supervisors, former faculty, preceptors, or professional colleagues. References from clergy, family members, friends or politicians will not be accepted.
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars) for domestic applicants. Checks or money orders should be made out to the University of Colorado.
- Interview: After the application is complete a telephone or video interview will be arranged with the applicant and around 6 faculty members. This interview will afford the program the opportunity to understand the needs of the applicant and for the candidate to ask questions. The interview process is designed to assess the applicant's knowledge of the profession, communication, and ability to perform in a positive, professional manner when working with others. To be considered for admission, applicants must participate in the interview process.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

OR Electronic Transcripts should be sent to:
graduate.school@cuanschutz.edu

International students must meet ALL of the requirements above and those required by International Admissions; additionally, their application fee is \$75 U.S. Dollars.

Degree Requirements

First Year

First Year		Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science ^{Core} Topics A	2
BMSC 7810	Core Topics in Biomedical Science ^{Core} Topics B	2
CSDV 7650	Research: CSDV ^{Section 001}	1-5
CSDV 7650	Research: CSDV ^{Section 002}	1-5
Hours		12-20
Spring		
CSDV 7650	Research: CSDV ^{Section 001}	1-5
CSDV 7605	Stem Cells and Development: An Integrated Approach	3-4
CSDV 7606	Critical Analysis of Research in CSD	3
Hours		7-12
Summer		
CSDV 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		20-42

Second Year

Second Year		Hours
Fall		
CSDV 7000	Cells, Stem Cells, and Development: Advanced Topics Discussion	1
CSDV 7650	Research: CSDV ^{Section 0V1}	1-5
MOLB 7950	Informatics and Statistics for Molecular Biology	3
Hours		5-9
Spring		
CSDV 7650	Research: CSDV ^{Section 0V1}	1-5
CSDV 7000	Cells, Stem Cells, and Development: Advanced Topics Discussion	1
Hours		2-6
Summer		
CSDV 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		8-25

Third Year & Beyond

Third Year

Fall		Hours
CSDV 7605 or CSDV 8990	Stem Cells and Development: An Integrated Approach (ask Program Administrator) or Doctoral Thesis	3-4
CSDV 7000 or CSDV 7100	Cells, Stem Cells, and Development: Advanced Topics Discussion (ask Program Administrator) or Advanced Writing Workshop	1
Hours		4-5
Spring		
CSDV 7650 or CSDV 8990	Research: CSDV or Doctoral Thesis	1-5
CSDV 7000 or CSDV 7100	Cells, Stem Cells, and Development: Advanced Topics Discussion ((ask Program Administrator)) or Advanced Writing Workshop	1
Hours		2-6
Summer		
CSDV 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		7-21

Learning Objectives

The PhD program in Cell Biology, Stem Cells and Development trains graduate students to become proficient and successful investigators who are able to:

1. Demonstrate a basic knowledge of central concepts in the biomedical sciences.
2. Understand the current concepts in Cell Biology, Stem Cell Biology and Development.
3. Read and critically evaluate the scientific literature.
4. Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
5. Present research results in peer-reviewed publications and in a dissertation.
6. Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
7. Write a competitive application for research funding.
8. Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

Courses

BMSC 7650 - Research in Biomedical Sciences (1-3 Credits)
Research rotation for students in the biomedical sciences in PhD program. Prereq: Consent of Instructor. Previously offered as IDPT 7650
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 20.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

CSDV 7000 - Cells, Stem Cells, and Development: Advanced Topics Discussion (1 Credit)
This course is a student-led paper discussion focusing on advanced topics pertaining to cell biology, stem cells, and developmental biology. Students will select, present, and discuss primary articles on diverse topics within these fields. Restriction: Students in the CSD program only, 2nd year and beyond.
Grading Basis: Satisfactory/Unsatisfactory w/IP
Repeatable. Max Credits: 6.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring.

CSDV 7100 - Advanced Writing Workshop (1 Credit)
This course is a student-led writing workshop focusing on developing writing skills through submission, editing, and discussion of drafts. Draft types will be chosen by the students enrolled and will include manuscripts, these, and documents related to career development. Students must have completed/passed their comprehensive exam in respective program; priority to CSDV PhD students.
Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall, Spring.

CSDV 7605 - Stem Cells and Development: An Integrated Approach (3-4 Credits)
Integrative introductory course incorporating the related fields of Cell Biology/Developmental Biology/Stem Cells. Through lectures, contemporary literature discussions, student presentations, enrollees will gain a sophisticated understanding of the biological concepts/experimental approaches underlying current understanding of cell, developmental, and stem cell biology. Pre-Requisite: IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 4.
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

CSDV 7606 - Critical Analysis of Research in CSD (3 Credits)

First-year students will learn to critically evaluate scientific literature in preparation for writing and critiquing research grant proposals. Primary literature will focus on cell and developmental biology related to CSDV 7605. Each session concludes with written mini-proposals and peer critiques. For CSDV & BSP first year students. If possible, limit to CSDV-PHD and BMSC-PHD plans. Else: Prerequisite: IDPT 7806 & 7810; Corequisite: CSDV 7605
Grading Basis: Letter Grade
Typically Offered: Spring.

CSDV 7650 - Research: CSDV (1-5 Credits)

Research work in cell biology, stem cells and development. Prereq: Consent of the instructor.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 10.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

CSDV 8990 - Doctoral Thesis (1-10 Credits)

Doctoral Thesis work in Cell biology, Stem Cells and Development. Prereq: Consent of Instructor.
Grading Basis: Letter Grade with IP
A-GRAD Restricted to graduate students only.
Additional Information: Report as Full Time.
Typically Offered: Fall, Spring, Summer.

MOLB 7950 - Informatics and Statistics for Molecular Biology (3 Credits)

This course covers the design and analysis of common molecular biology experiments with thorough coverage of statistical and informatic approaches to data analysis. The course begins with a "boot camp" that covers use of shell programming, R/R Studio, and Python scripting in bioinformatics. Pre-Req: MOLB-PhD or CSDV-PhD students only
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Computational Bioscience (PhD)

Overview

The program was founded by Professor Lawrence Hunter, founder of the International Society for Computational Biology, and the popular ISMB and PSB conferences. The CPBS Program is globally recognized for its research and teaching of computational biology and bioinformatics at the University of Colorado's Anschutz Medical Campus. The Program is designed to produce graduates with depth in computational methods and molecular biomedicine, an intimate familiarity with the science and technology that synthesizes the two, and the skills necessary to pioneer novel computational approaches to significant biomedical questions.

The Computational Bioscience Program of the University Of Colorado School Of Medicine is dedicated to training computational biologists who aspire to achieve excellence in research, education and service, and who will apply the skills they learn toward improving human health and deepening our understanding of the living world. The Computational Bioscience Program provides graduates with the foundation for a lifetime of continual learning. Our curriculum integrates training in computation and biomedical sciences with student research and teaching activities that grow increasingly independent through the course of the program. Our graduates are able to do independent computational bioscience research, to collaborate effectively with other scientists, and to communicate their knowledge clearly to both students and the broader scientific community.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online application
 - Personal Statement: A roughly one-page personal statement describing the applicant's career goals and purpose for seeking a Computational Bioscience PhD
 - Resume: The applicant's current resume or curriculum vitae, including professional work/practice since graduating with a bachelor's degree (or equivalent).
 - Past Work Statement
 - Three recommendations: to be completed by people who know your professional, academic and/or personal achievements or qualities well. As such, references must be from professional contacts, such as employers, supervisors, former faculty, preceptors, or professional colleagues. References from clergy, family members, friends or politicians will not be accepted.
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars) for domestic applicants. Checks or money orders should be made out to the University of Colorado.
- Interview: After the application is complete a telephone or video interview will be arranged with the applicant and around 6 faculty members. This interview will afford the program the opportunity to understand the needs of the applicant and for the candidate to ask questions. The interview process is designed to assess the applicant's knowledge of the profession, communication, and ability to perform in a positive, professional manner when working with others. To be considered for admission, applicants must participate in the interview process.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:

University of Colorado Denver

Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

OR Electronic Transcripts should be sent
to: graduate.school@cuanschutz.edu

International students must meet ALL of the requirements above and those required by International Admissions; additionally, their application fee is \$75 U.S. Dollars.

Degree Requirements

First Year

Year 1

Fall		Hours
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science Topics A	2
BMSC 7810	Core Topics in Biomedical Science Topics B	2
CPBS 7601	Computing Skills in the Biomedical Sciences	2
CPBS 7602	Introduction to Big Data in the Biomedical Science	2
CPBS 7605	Ethics in Bioinformatics	1
Hours		15

Spring

CPBS 7712	Research Methods in Biomedical Informatics	4
CPBS 7605	Ethics in Bioinformatics Section 001	1
CPBS 7605	Ethics in Bioinformatics Section 0V3	1
Hours		6

Summer

CPBS 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		22-31

Second Year

Year 2

Fall		Hours
BIOS 6601	Applied Biostatistics I	3
Or take 1 of the following courses:		
BIOS 6611	Biostatistical Methods I	
BIOS 6631	Statistical Theory I	
CPBS 7605	Ethics in Bioinformatics	1
Hours		4
Spring		
CPBS 7605	Ethics in Bioinformatics	1
Hours		1

Summer		
CPBS 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		6-15

Third Year & Beyond

Year 3

Fall		Hours
CPBS 7605 or CPBS 8990	Ethics in Bioinformatics (Confirm with Program Administrator) or Doctoral Thesis	1
Hours		1

Spring		
CPBS 7605 or CPBS 8990	Ethics in Bioinformatics (Confirm with Program Administrator) or Doctoral Thesis	1
Hours		1

Summer		
CPBS 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		3-12

Learning Objectives

Educational Goals and Objectives

Knowledge Goals - Graduates demonstrate their knowledge of core concepts and principles of computational bioscience, and the ability to apply computation to gain insight into significant biomedical problems. This knowledge includes mastery of the fundamentals of biomedicine, statistics and computer science, as well as proficiency in the integration of these fields. Graduates contribute to the discovery and dissemination of new knowledge.

Knowledge Objectives

1. Demonstrate knowledge of the scientific principles that underlie the current understanding of molecular biology, statistics and computer science.
2. Demonstrate an ability to productively integrate knowledge from disparate fields to solve problems in biomedicine using computational methods.
3. Demonstrate knowledge of the types and sources of data most commonly used in computational bioscience, including knowledge of all major public data repositories.
4. Demonstrate the knowledge of the classes of algorithms most often applied in computational bioscience, and their domains of applicability.
5. Demonstrate an understanding of the principles and practice of the scientific method as applied in computational bioscience, including experimental design, hypothesis testing, and evaluation of computational systems.

Communication Skills Communication Skills Goals - Graduates demonstrate interpersonal, oral and written skills that enable them to interact productively with scientists from both biomedical and computational domains, to clearly communicate the results of their work in appropriate formats, and to teach others computational bioscience

skills. Graduates are able to bridge the gap between biomedical and computational cultures.

Communication Skills Objectives

1. Communicate effectively, both orally and in writing, in an appropriate range of scientific formats, including formal presentations, collaborative interactions, and the critique of others' work.
2. Demonstrate familiarity with both biomedical and computational modes of expression, and be able to communicate clearly across disciplinary boundaries.
3. Demonstrate commitment and skill in teaching to and learning from students, colleagues, and other members of the scientific community.

Professional Behavior Professional Behavior Goals - Graduates demonstrate the highest standards of professional integrity and exemplary behavior, as reflected by a commitment to the ethical conduct of research, continuous professional development, and thoughtfulness regarding the broader implications of their work.

Professional Behavior Objectives

1. Act in an ethically responsible manner, displaying integrity, honesty, and appropriate conduct at all times.
2. Recognize the limits of one's knowledge, skills, and behavior through self-reflection and seek to overcome those limits.
3. Always consider the broad significance of one's professional actions, including their implications for society and the living world.

Self-Directed and Life Long Learning Skills Self-Directed and Life Long Learning Goals - Graduates demonstrate habits and skills for self-directed and life-long learning, and recognize that computational bioscience is a rapidly evolving discipline. Our focus is on the development of adaptive, flexible and curious scientists able to comfortably assimilate new ideas and technologies during the course of their professional development.

Self-Directed and Life Long Learning Skills Objectives 1. Recognize the need to engage in lifelong learning to stay abreast of new technologies and scientific advances in multiple disciplines. 2. Locate, evaluate and assimilate relevant new knowledge and techniques from a wide variety of sources.

Courses

BIOS 6611 - Biostatistical Methods I (3 Credits)

This first course in applied statistics covers basic descriptive methods and probability; parametric and nonparametric inference for the one- and two-sample location problem; ANOVA, ANCOVA, and multiple linear regression. Matrix notation, R, and SAS are used. Prerequisite: differential calculus or permission of instructor

Grading Basis: Letter Grade

A-PUBH BIOS

Typically Offered: Fall.

BIOS 6631 - Statistical Theory I (4 Credits)

This course presents an introductory coverage of the theory of discrete and continuous random variables and applications to statistical problems. Topics include probability theory, transformations and expectations, common families of distributions, multiple random variables, and properties of a random sample. Prereq: Differential and integral calculus.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)

Course will focus on the fundamental principles of biomedical sciences.

Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology.

Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

CPBS 7605 - Ethics in Bioinformatics (1 Credit)

Discussions of professional conduct, social implications of research and questions raised by biomedical research, with an emphasis on topics relevant to computational biologists. Active student participation is required. Offered every other year.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CPBS 7712 - Research Methods in Biomedical Informatics (4 Credits)

This course focuses on application of algorithms to analysis of different types of big data and provides training in how to plan, develop, execute and report on research in computational biology. Topics include: 1) Molecular Data; 2) Biomedical data; 3) Drug/disease data.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CPBS 8990 - Doctoral Thesis (1-10 Credits)

Doctoral Thesis work in Computational Bioscience. Prerequisites: Permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Professor

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Human Medical Genetics & Genomics (PhD)

Overview

The Human Medical Genetics and Genomics Graduate Program (HMGGP) at CU Anschutz is an interdisciplinary, interdepartmental program designed to coordinate outstanding graduate training and research opportunities in all aspects of Human and Medical Genetics. The HMGGP faculty are committed to a dynamic and outstanding program that provides training and mentorship to the next generation of leaders in the fields of human and medical genetics and genomics.

The Human Genome Project and a diverse group of technological advances have brought about a revolution in almost all fields of medicine and biomedical research. The availability of genomic DNA sequences of humans and other species has enabled discovery of genes critical to development and disease and genetic variations that predispose to common debilitating diseases. Furthermore, tests to rapidly identify genetically susceptible individuals are being developed, and new technologies to treat or even prevent these diseases are being brought on line. Genetics and genomics provides the foundation for “Precision” or “Personalized” medicine which will bring about improved health, longevity, and quality of life.

It is the mission of the Human Medical Genetics and Genomics Graduate Program to be at the forefront of this revolution. The Human Medical Genetics and Genomics Graduate Program builds on close engagement with our students, who are integral to our ongoing mission to build towards the future. The Program is continually adding new Training Faculty, providing students with an outstanding group of scientists from whom to select as Thesis Advisors and mentors. Our goal is to provide students a world-class graduate training experience in an interactive and collaborative environment that allows for an individualized learning experience.

Admission Requirements

Admission Philosophy

Students are selected on the basis of past academic performance, previous laboratory research experience, and, where possible, individual interviews. We select students who show high intellectual achievement, creativity, independence, and strong motivation to become successful scientists. Our Program recognizes that students who are attracted to a career in genetics and genomics can have highly varied backgrounds.

Admissions Requirements

Coursework | Although there are no formal undergraduate course requirements, students with a solid undergraduate foundation in mathematics and biological and chemical sciences have performed best in the Program. It is suggested that applicants have completed courses in biology, chemistry (general and organic), physics, genetics, calculus, and statistics before entering the Program.

Graduate Record Exam (GRE) | The GRE General Test and Subject Test are not required for application to HMGGP but will be considered if submitted. To send scores directly to HMGGP, please designate GRE code 4875.

How to Apply

APPLICATION WILL OPEN ON SEPTEMBER 1st.

DEADLINE FOR APPLICATIONS IS DECEMBER 1st.

PRIORITY DEADLINE FOR INTERNATIONAL APPLICANTS IS NOVEMBER 1st.

To apply for admission applicants must submit the following:

- Online Graduate School application (included in the application is the Research Statement, Professional Background, and Future Goals Statement, and Colorado residency form).
- A \$50.00 domestic and \$75.00 international non-refundable application fee. No application will be processed unless this fee is paid.
- Three (3) letters of recommendation.
- GRE test scores (optional). Use GRE code 4875 (optional)
- TOEFL or IELTS scores and financial support verification (international students only).
- One (1) official transcript of all academic work completed to date. To be considered “official”, the transcripts must come from the issuing institution directly to the University of Colorado Denver Anschutz Medical Campus graduate program. Use the following address:

Electronic Transcripts should be sent to: graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

Degree Requirements

First Year Students

First Year		Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science	2
HMGP 7610	Topics in Human Genetics	1
HMGP 7650	Research in Human Medical Genetics (Sections 001 AND 002)	1-10
Hours		10-19
Total Hours		10-19

First Year		Hours
Spring		
HMGP 7600	Survey of Human Genetics	3-4
HMGP 7610	Topics in Human Genetics	1
HMGP 7650	Research in Human Medical Genetics	1-10
Hours		5-15
Total Hours		5-15

First Year

Summer		Hours
HMGP 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Second Year Students**Second Year**

Fall		Hours
HMGP 7610	Topics in Human Genetics	1
HMGP 7650	Research in Human Medical Genetics (Section 0V3)	1-10
Hours		2-11
Total Hours		2-11

Second Year

Spring		Hours
HMGP 7610	Topics in Human Genetics	1
HMGP 7650	Research in Human Medical Genetics (Section 0V3)	1-10
Hours		2-11
Total Hours		2-11

Second Year

Summer		Hours
HMGP 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Third Year Students**Third Year**

Fall		Hours
HMGP 7610	Topics in Human Genetics	1
HMGP 8990	Doctoral Thesis	1-10
Hours		2-11
Total Hours		2-11

Year 3

Spring		Hours
HMGP 7610	Topics in Human Genetics	1
HMGP 8990	Doctoral Thesis	1-10
Hours		2-11
Total Hours		2-11

Third Year

Summer		Hours
HMGP 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Fourth Year Students & Beyond**Year 4**

Fall		Hours
HMGP 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Year 4

Spring		Hours
HMGP 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Year 3

Summer		Hours
HMGP 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Learning Objectives

The PhD program in Human Medical Genetics trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts in the biomedical sciences.
- Understand current concepts in human genetics and genomics.
- Read and critically evaluate the scientific literature.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Present research results in peer-reviewed publications and in a dissertation.
- Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
- Write a competitive application for research funding.
- Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

HMGP 7600 - Survey of Human Genetics (3-4 Credits)

Survey of human genetics, including Mendelian and other types of inheritance, chromosomes and cytogenetics, molecular and biochemical basis of genetic disease, quantitative genetics and gene mapping, developmental and cancer genetics, clinical genetics, and genetic screening and prenatal diagnosis.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

HMGP 7610 - Topics in Human Genetics (1 Credit)

Two-semester course based on weekly HMGP seminar series. Students meet with speakers and discuss seminar or related topics and arranged readings. Grade based on class participation and required paper and presentation. Required for 1st, 2nd and 3rd year HMGP students.

Prerequisite: Graduate standing.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

HMGP 7630 - Independent Study in Human Medical Genetics (1-2 Credits)

Independent study is intended to permit students to carry out directed reading and discussion with a specific faculty member other than their thesis advisor. Consent of the faculty member offering the independent study and the program director are required.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

HMGP 7650 - Research in Human Medical Genetics (1-10 Credits)

Research work in human medical genetics. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

HMGP 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in human medical genetics. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Contact Us

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Policies

Please refer to the Graduate School Policies page (p. 186).

Immunology (PhD)

Overview

The doctoral program in Immunology at the University of Colorado Anschutz Medical Campus trains students in diverse areas of immunology that includes innate and adaptive immunity, host-pathogen interactions, tumor immunity, autoimmunity, immune deficiencies, and vaccine development.

The Immunology Graduate Program at the University of Colorado Anschutz Medical Campus is amongst the most prominent basic Immunology graduate research training Programs in the country. Since its founding in 1989, our Program has conferred over 150 PhD degrees to students from a variety of ethnic and cultural backgrounds. Our curriculum combines formal coursework with mentoring by an engaged faculty in a collaborative environment. The Program draws from the academic strengths of three institutions that contribute significant resources and house our training faculty and students – The CU Denver | Anschutz, National Jewish Health, and the Barbara Davis Center for Childhood Diabetes.

Students in the program receive comprehensive training in diverse areas of immunology and gain the intellectual foundation and technical expertise necessary for performing cutting-edge basic and translational research. Trainees also gain skills in data analysis, technical writing, and oral presentation to further prepare them for making impactful contributions throughout their careers – whether they pursue careers within or outside of academia.

Admissions Requirements

Applicants with proven scientific ability, indicated through performance in a college level science program and/or in a research laboratory. Prior research laboratory experience ensures that students have basic skills and are familiar with the laboratory research environment. We strongly encourage applications from qualified underrepresented minorities. The Program and members of our training faculty have a strong commitment to inclusivity and a solid history of success in training minority and other under-represented student populations.

Applications will open September 1.

DEADLINE FOR APPLICATIONS IS DECEMBER 1st.

There are 3 ways to enter the Immunology Program:

- Apply directly to the Immunology Graduate Program.
- Apply to the Biomedical Sciences Umbrella Program and join the Immunology Graduate Program after your 1st year.
- Those interested in pursuing an MD/PhD with research interests in Immunology may apply to the Medical Scientist Training Program and complete their PhD portion through Immunology. Note: the MSTP follows a separate application process with different deadlines. Please visit the MSTP website for more information.

Applications will open September 1, and all application and supplemental materials are due no later than December 1. Applications received after December 1 may not be considered.

To apply for admission applicants must submit the following:

- **Online Graduate School application**
- A \$50.00 domestic and \$75.00 international non-refundable application fee.
- One (1) official transcript of all academic work completed to date. To be considered "official", the transcripts must come directly from the issuing institution.

Electronic Transcripts should be sent to graduate.school@cuanschutz.edu

OR

Mail a physical copy to:

University of Colorado Denver
Graduate School
Mail Stop C5000
13001 E. 17th Place
Aurora, CO 80045

- Three to five (3-5) letters of recommendation. Letters should be from individuals such as college professors or faculty mentors who are familiar with your academic and/or laboratory achievements. Such letters should be submitted electronically through the on-line application.
- GRE scores are no longer required for admission.
- International Applicants only: Students whose native language is not English or who have completed their studies at an institution where English was not the language of instruction, must demonstrate English language proficiency by submitting scores of the Test of English as a Foreign Language (TOEFL) or its equivalent. **Visit International Admissions for more information.**

Degree Requirements

First Year

First Year

Fall		Hours
IMMU 7650	Research in Immunology ⁰⁰¹	1-5
IMMU 7650	Research in Immunology ⁰⁰²	1-5
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science (Topic A)	2
BMSC 7810	Core Topics in Biomedical Science (Topic B)	2
BMSC 7820	Statistics and Data Analyses for the Biomedical Sciences	3
Hours		15-23

Spring

IMMU 7650	Research in Immunology ⁰⁰¹	1-5
IMMU 7662	Immunology	6
Hours		7-11

Summer

IMMU 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		23-44

Second Year

Second Year		
Fall		
		Hours
IMMU 6110	Introduction to Bioinformatics	3
IMMU 7607	Science as a Profession	1
IMMU 7650	Research in Immunology ^{0V3}	1-5
IMMU 7602	Special Topics in Cancer Immunology	1
IMMU 7604	Special Topics in Signal Transduction in the Immune System	1
IMMU 7608	Immunology of Infection	1
IMMU 7609	Immunology of Autoimmune Diseases	1
Hours		9-13
Spring		
IMMU 7650	Research in Immunology ^{0V3}	1-5
IMMU 7605	Workshop in Scientific Writing	1
IMMU 7603	Special Topics-Immunologic Basis of Human Disease	1
Hours		3-7
Summer		
IMMU 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		13-30

Learning Objectives

Graduate education in general | Post-baccalaureate education is an essential component in the development of future leaders, academicians, and scientists. The influence of graduate education on society reaches essentially all aspects of our lives including our safety, economy, health, and overall quality of life.

Immunology program in specific | The immune system has evolved to defend host organisms against the vast number of foreign agents that may be encountered throughout life and that are capable of compromising health and leading to possible death. A doctoral education in Immunology specifically trains individuals to not only define the mechanisms by which the immune system accomplishes this task but also to establish possible interventions that preclude, attenuate or neutralize these threats.

The PhD program in immunology trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts in the biomedical sciences.
- Understand the current concepts in immunology.
- Read and critically evaluate the scientific literature.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Present research results in peer-reviewed publications and in a dissertation.
- Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
- Write a competitive application for research funding.
- Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

IMMU 6110 - Introduction to Bioinformatics (3 Credits)
An intensive course aimed to introduce basic theory and concepts of commonly used bioinformatics workflows encountered in immunology and microbiology NGS data sets. This course is also designed as a workshop; all workflows will be directly applied to pre-existing datasets. Pre-requisite: At least one semester of any R programming.
Grading Basis: Letter Grade
Restricted to IMMU, MICB, MICR, BSBT students
Typically Offered: Spring.

IMMU 7602 - Special Topics in Cancer Immunology (1 Credit)
This interactive course aims to introduce important concepts, models and approaches in cancer immunology. The focuses are mechanisms relevant to the immune response in the context of cancer development and immunotherapy. Students are assessed via presentations, participation, and a paper.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

IMMU 7603 - Special Topics-Immunologic Basis of Human Disease (1 Credit)
Perform translational studies, as they either test hypotheses established in mouse models or lead to new testable hypotheses that will advance understanding of pathogenesis of human disease. Greater understanding of disease pathogenesis will allow for development of new treatment options. Prereq: IMMU 7662.
Grading Basis: Letter Grade
Repeatable. Max Credits: 1.
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

IMMU 7604 - Special Topics in Signal Transduction in the Immune System (1 Credit)
In-depth course, designed primarily for immunology graduate students in their second year, who have completed IMMU 7602. The course covers selected topics (8 in all) encompassing a wide range of topics in signal transduction through receptors important in the immune system. Prereq: IMMU 7662.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

IMMU 7605 - Workshop in Scientific Writing (1 Credit)

This workshop will consist of one session weekly for students to be critiqued on writing assignments designed to provide basic training in writing grant proposals and manuscripts.

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7607 - Science as a Profession (1 Credit)

This course discusses ethical issues, conflicts of interest, and regulations for working with humans or animals. It also includes instruction on writing papers and grants, giving effective presentations and advice on finding jobs in academia and industry.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

IMMU 7608 - Immunology of Infection (1 Credit)

Students will discuss and present selections from the current literature on topics related to the interaction of the immune system with microbial causes of infectious diseases.

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7609 - Immunology of Autoimmune Diseases (1 Credit)

Following a brief introduction on autoimmune diseases by the instructor, the students will discuss and present assigned papers from the current literature on topics related to immune mechanisms and cell types leading to various autoimmune diseases.

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7650 - Research in Immunology (1-5 Credits)

Research work in immunology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IMMU 7662 - Immunology (6 Credits)

This course covers the basic principles of the immune system. Included are discussions on (I) the innate and adaptive immune responses, (II) the molecular and cellular basis of immune specificity and (III) aspects of clinical immunology.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IMMU 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in immunology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Program Calendar

August – Department of Immunology & Microbiology Scientific Conference & Retreat

October – Immunology Program & Microbiology Program Student (only) Retreat

October – MPID T-32 Mini-symposium

Weekly – Research in Progress Seminar with the Microbiology Program

Weekly- Immunology Student Journal Club

Weekly – Speaker Series with Microbiology Program

Twice per year – Student Invited Speaker Seminar and meetings

Contact Us

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Co-Program Director

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IMMU@cuanschutz.edu

Immunology Graduate Program

Mail Stop C290

13001 E. 17th Place

Aurora, CO 80045

Integrated Physiology (PhD)

Overview

Integrated Physiology is a multidisciplinary PhD training program that prepares students for careers in biomedical research. Students in Integrated Physiology have opportunities to explore how cells, organ systems and organisms regulate complex physiological functions through integration of molecular, cellular and physiological mechanisms.

Entrance Requirements

The Integrated Physiology Program seeks highly motivated students with the strong backgrounds in quantitative sciences and a passion for biomedical research.

GPA and Test Scores (optional) | The average undergraduate GPA of accepted students is 3.40. If you are submitting GRE scores, take the exam no later than October so that their scores will be available to the Program.

Coursework and Research | Students seeking admission should have taken Organic Chemistry, Biology, General Physics, and college level mathematics through Calculus. Courses in Biochemistry, Physical Chemistry, Genetics and Physiology are recommended. Research experience is strongly recommended. Students with excellent records and research experience who lack specific courses are encouraged to apply. Where additional course-work is necessary to provide background of sufficient depth for our rigorous curriculum, supplemental courses or reading programs can be designed.

How to Apply

Application will open on September 1st.

DEADLINE FOR APPLICATIONS IS DECEMBER 1st.

PRIORITY DEADLINE FOR INTERNATIONAL APPLICANTS IS NOVEMBER 1.

To apply for admission applicants must submit the following:

- Online Graduate School application.
- A \$50.00 domestic and \$75.00 international non-refundable application fee [credit card (on-line only), check, or money order]. No application will be processed unless this fee is paid.
- Three (3) letters of recommendation.
- GRE test scores (optional)
- TOEFL or IELTS scores and financial support verification (international students only).
- One (1) official transcript of all academic work completed to date. To be considered "official", the transcripts must come from the issuing institution directly to the University of Colorado Denver Graduate Admissions.

Electronic Transcripts should be sent to:
graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000

13001 E. 17th Place
Aurora, CO 80045

International students must meet ALL of the requirements above and those required by International Admissions.

Plan of Study

First Year

Year 1		Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science	2
IPHY 7650	Research in Integrated Physiology	2
IPHY 7652	Special Topics in Integrated Physiology	1
Hours		11
Total Hours		11

Year 1		Hours
Spring		
IPHY 7650	Research in Integrated Physiology	1
IPHY 7652	Special Topics in Integrated Physiology	1
IPHY 7800	Comprehensive Physiology	6
IPHY 7803	Signaling in Physiological Systems	3
Hours		11
Total Hours		11

Year 1		Hours
Summer		
IPHY 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Second Year

Students are required to take one advanced topics or elective course in their second year. Electives should be chosen in consultation with the Program Director and the student's mentor.

Year 2		Hours
Fall		
BMSC 7811	Responsible Conduct of Research	1
BMSC 7820	Statistics and Data Analyses for the Biomedical Sciences	3
IPHY 7650	Research in Integrated Physiology	1-10
IPHY 7652	Special Topics in Integrated Physiology	1
Hours		6-15
Total Hours		6-15

Year 2		Hours
Spring		
IPHY 7650	Research in Integrated Physiology	1-10
IPHY 7652	Special Topics in Integrated Physiology	1
CANB 7620	Histophysiology	3
IPHY 7802	Grant Proposal Writing	1

BMSC 7812	Rigor and Responsibility in Biomedical Research	1
Hours		7-16
Total Hours		7-16

Year 2

Summer		Hours
IPHY 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Third Year & Beyond

Year 3		Hours
IPHY 7652	Special Topics in Integrated Physiology	1
IPHY 8990	Doctoral Thesis	1-10
Hours		2-11
Total Hours		2-11

Learning Objectives**Graduate education in general**

Doctoral education is the foundation of future scholarship and the primary “engine” driving the research enterprise. It prepares future faculty and leaders in academia as well as in many other areas of industry, government, and society in general.

Integrated Physiology program in specific

Understanding mechanisms underlying the function of various systems in the body that contribute to both normal and pathological physiology is the fundamental prerequisite for all applied research in biology. Doctoral education in Integrated Physiology trains students in basic integrated physiology concepts spanning multiple organ systems from molecular/cellular physiology to systems physiology using state of the art approaches.

The philosophy of our graduate program is to emphasize state-of-the-art research approaches at all stages; and that begins with the recruitment phase. We identify candidates with excellent undergraduate academic credentials, with a strong preference for those who have participated in independent research. During the first year in the program, students must complete three formal laboratory-based research rotations. Each research rotation is intended to examine testable hypotheses, as well as to provide exposure to new laboratory techniques. At the conclusion of each rotation, a post-rotational seminar is presented to the Program Faculty and Students.

During the first two years in the program, students are required to take a number of courses to prepare them for research careers in physiology. These include a core course in molecular and cellular biology overseen by the Graduate School, and Program core courses in Comprehensive Physiology and Histophysiology. Additional requirements include courses in Ethics, Biostatistics, and Rigor & reproducibility. Beginning in the second year, a number of electives are also available emphasizing topics such as: neuropharmacology/neurobiology, cancer biology, bioinformatics, principles of pharmacology, advanced topics in molecular biology, cell and molecular signaling, and structural biology. Students are also required to participate in weekly Integrated Physiology Journal Clubs and Seminar Series throughout their time in the program.

The PhD program in Integrated Physiology trains graduate students to become proficient and successful investigators who are able to:

Demonstrate a basic knowledge of central concepts in the biomedical sciences.

Understand the current concepts in Integrated Physiology.

Read and critically evaluate the scientific literature relevant to physiology, in specific, and the basic and clinical biomedical sciences, in general.

Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.

Present research results in peer-reviewed publications and in a doctoral dissertation.

Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.

Understand the basis of writing and submitting competitive applications for research funding.

Be competent in self-evaluation of acquired skills and understand how these skills may be perceived by external peers.

Develop a mature and meaningful Personal Development Plan (PDP) that will facilitate attainment of career objectives.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

CANB 7620 - Histophysiology (3 Credits)
Discussions of cell interactions, tissue physiology, and renewal based upon the histologic cell types and structures present. Where pertinent, pathologic alterations will be introduced to facilitate identification of the important normal functions/structures.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

IPHY 7650 - Research in Integrated Physiology (1-10 Credits)

Research work in Integrated Physiology. Prerequisite: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IPHY 7652 - Special Topics in Integrated Physiology (1-3 Credits)

This course provides instruction in a specialized area of Integrated Physiology. Course content and the extent of the course varies from year to year. Prerequisite: Enrollment in PhD Program in Graduate School.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IPHY 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in physiology.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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Medical Scientist Training Program (MD/PhD)

Overview

The Medical Scientist Training Program provides rigorous training for students interested in a career in clinical medicine and basic science research.

The MST Program's mission is to provide students with the breadth and depth of training necessary to excel as clinician scientists.

Colorado has strengths in Molecular and Cellular Biology, Immunology, Epidemiology, Mechanical Engineering, Biomedical Engineering, Virology, Neuroscience, Endocrinology, Pharmacology, and Cancer Biology, which provides an exciting spectrum of research opportunities for MSTP students.

The MSTP Admissions Committee is looking for individuals with a demonstrated commitment to medical research and service to community. The committee looks at applicants as whole individuals, equally assessing academic achievement with past experience. Letters of recommendation, substantive bench research experience, test scores, and life experiences are all considered.

As a federally funded program, the University of Colorado MSTP is National in scope. It is open to US citizens and Permanent Residents of all 50 states, the District of Columbia, and Puerto Rico. MSTP actively recruits women and underrepresented students. We are committed to the enrollment of a diverse body of talented students.

Application Process

Application Information

2026 Entering Class

Initial application to the MST Program at the University of Colorado involves the completion of the American Medical College Application Service (AMCAS) On-Line Application and the submission of the SOM secondary application and payment of fee.

The deadline for submission of a complete MSTP application via AMCAS is **November 30, 2025**. A complete application includes the following:

- **AMCAS Application** (must be submitted by October 15, 2025)
- School of Medicine **Secondary Application** and fee (must be received by November 30, 2025)
- **CASPer Exam** and **Altus Suite** Results (received by November 30, 2025). Altus Suite includes the following exams:
 - CASPer: a 60-90 minute online situational judgement test (SJT)
 - Snapshot: a 10-minute one-way interview with standardized questions
 - Duet: a 15-minute value-alignment assessment
- All **Letters of Recommendation**

Recommendation Letters

The MSTP accepts three to five letters of recommendation (or a committee composite letter) submitted through AMCAS (<https://students-residents.aamc.org/applying-medical-school/faq/amcas-faq/>)

- Example letter writers include:
 - previous or current research mentors,
 - instructors, physicians or employers.
- References should come from individuals who know the applicant well enough to comment on their educational background.
- The MST Program has access to letters sent by electronic submission to the CU School of Medicine.

AMCAS Instructions

The deadline for the AMCAS primary application submission is October 15, 2025.

- Applicants must instruct AMCAS to forward their AMCAS application to the University of Colorado.
- Applicants must select the MD/PhD Program Type on their application.

This will permit applicants to submit essays describing their interest in the combined MD/PhD program.

- Primary AMCAS Application Deadline is October 15, 2025
- Secondary Application Deadline is November 30, 2025

Admission Requirements

Degree and Coursework Requirements

The University of Colorado School of Medicine requires that students have a baccalaureate degree from an accredited college or university prior to matriculation.

The University of Colorado School of Medicine recognizes that the experiences and undergraduate academic experience of our applicants varies greatly. We encourage applicants to explore a diverse, interdisciplinary and balanced undergraduate education, encompassing the necessary foundational knowledge in the biomedical sciences and humanities. Students need to be adequately prepared in the scientific underpinnings of modern medicine and also understand the psychosocial elements that are critical to its practice.

Accordingly, we have moved away from traditional, specific course based requirements, and have revised our prerequisites and academic expectations such that students should provide evidence to demonstrate competencies in the life sciences, social sciences, physics and mathematics, based on the AAMC-HHMI Scientific Foundations for Future Physicians (<https://www.aamc.org/download/271072/data/scientificfoundationsforfuturephysicians.pdf>) and AAMC-Behavioral and Social Science (<https://www.aamc.org/download/271020/data/behavioralandsocialsciencefoundationsforfuturephysicians.pdf>) Foundations for Future Physicians. (<https://www.aamc.org/download/271020/data/behavioralandsocialsciencefoundationsforfuturephysicians.pdf>) These competencies, representing the cumulative knowledge, skills and commitment to scholarship needed to undertake training as a future physician, can be met through traditional and/or interdisciplinary courses of study in an accredited institution of higher learning, or by other educational, employment, service or life experiences.

Competitive applicants should demonstrate in-depth competency in each of the following areas of study, as reflected by their academic achievements and letters of recommendation.

Biology: Applicants should demonstrate an understanding of molecular and cellular biology, genetics, and the principles underlying the structure and function of organ systems and the regulation of human physiology.

Chemistry/Biochemistry: Applicants should demonstrate competence in the basic principles of chemistry as it pertains to living systems, and knowledge of how biomolecules contribute to the structure and function of cells and organs.

Mathematics/Statistics and Physics: Applicants should demonstrate competence in the basic principles of physics and mathematics underlying living systems and must be able to apply quantitative reasoning, statistical principles, and appropriate mathematics to describe or explain phenomena in the natural world. A basic understanding of statistics or biostatistics is required to comprehend the quantitative aspects of medicine and biomedical research.

Social Sciences and Communication: It is important that applicants demonstrate competence in the humanistic understanding of patients as individuals and members of a families, communities, and society. Applicants should be aware of factors that influence individual, community, and societal decisions regarding health and health care delivery. Applicants are expected to speak, write, and read English fluently.

Students are encouraged to consider additional coursework in biochemistry, computer sciences, genetics, humanities, and social sciences. AP and CLEP courses, as well as on-line courses, are viewed with a degree of comparability to college courses, as long as the US accredited degree granting institution includes these credits on their transcript as fulfilling certain institutional requirements. Students who have AP or CLEP credit in the basic sciences are encouraged to take upper level courses in these areas. Courses taken abroad are treated comparably to traditional courses, as long as these credits are included on the transcript of a U.S. accredited degree-granting institution.

MCAT

Students must take the Medical College Admissions Test (MCAT), with the oldest exam accepted no more than three years prior to matriculation year. For example, applicants applying for August 2021 matriculation must have MCAT results from January 2018 - October 2020. If the applicant takes the MCAT multiple times, the Admissions Committee will use the best one time composite score from that sitting.

The CASPer Test - Computer-Based Assessment for Sampling Personal Characteristics

As a part of the supplemental (secondary) application, all applicants to the University of Colorado School of Medicine are required to complete an online assessment (CASPer), to assist with our selection process. Successful completion of CASPer is mandatory in order to maintain admission eligibility. CASPer results need to be sent to CUSOM by the noted distribution date located on the CASPer website (<https://takecasper.com/dates-times/>). Learn more about CASPer here: www.TakeAltus.com (<https://takealtus.com/>)

Letters of Recommendation

Applicants are required to obtain letters to support their candidacy for admission. We require three to five letters; letters can come from a faculty member, clinical experience, research experience, or a current job as the letter transmits cogent information about the applicant's work. Obtaining a letter from the employer who you are working with during the application year is highly recommended. Evidence of a successful engagement in a post-college experience is considered a valuable addition to other letters that also may be part of your file. Some colleges offer a pre-medical advising system and the committee writes letters for their students. A committee letter is sufficient to meet the medical school letter of recommendation requirements. All letters must be transmitted electronically through AMCAS' application process. We strongly recommend that letters not be from family friends or others who know the student only peripherally.

Secondary Application and the Completion of the Applicant's File

Upon receipt and verification of the AMCAS application, the SOM Office of Admissions will email eligible applicants the link to our Secondary Application that is to be completed online and submitted by November 30th of the application year.

The secondary application consists of:

- Secondary application processing fee – **Fee is Non-refundable**
- CASPer test results

Completed secondary applications are forwarded to the MSTP admissions committee who perform a holistic review of applications and invite select applicants for an interview. Interview invitations are on a rolling basis – October through February.

Application Fee Payments and/or Fee Waivers

Students invited to complete the secondary application must submit an application processing fee of \$100 with the secondary application. The application fee waiver will be granted **ONLY** to applicants who received approval from the AAMC Fee Assistance Program (FAP). **The secondary application fee is non-refundable.**

Students learn through a sequence of interdisciplinary Blocks and Threads that are designed to gradually build student competency in our mission of education, research, clinical care, and community service. At the University of Colorado, we provide future physicians scientists with the scientific, clinical, and communication skills necessary to develop and effectively deliver state-of-the-art health care to an increasingly diverse population.

Currently, MSTP students complete both required Medical and Graduate School Curricula, USMLE, Preliminary Graduate Exam and lab rotations during their first two years (MS1-2).

Our curriculum Integrates basic science and clinical material throughout all phases; Encourages independent, self-directed learning; Promotes advanced clinical examination and clinical reasoning skills.

MSTP Specific Courses:

(For full course descriptions, please visit the Courses (p. 358) tab.)

- **Thesis Years - Foundations of Doctoring (MSTP 7655)** allows students to work with a physician scientist preceptor of their choosing during the duration of their PhD. This course is designed to allow the MSTP students to continue their clinical training during their thesis years. They will work in the clinic (or inpatient setting) with an academic physician-scientist who specializes in a clinical area of interest to the student. The goals of this course are to maintain and further the clinical skills learned during Phases I and II, to provide opportunities for MSTPs to engage in clinical/translation scholarly activities, to allow MSTPs to sample potential career choices, and to minimize the anxiety often encountered upon re-entry into the clinics after an extended absence. By interacting at this early stage with a physician-scientist clinical mentor, MSTP students will experience first-hand how academic physicians can effectively and efficiently organize and spend their time. We anticipate that opportunities for establishing collaborations between their research and clinical mentors, involvement in clinical research, and writing of clinical reviews will emerge.
- **Molecules to Medicine** for MSTP pre-clinical students (MSTP 7805) is required for first year MSTP students. One or two students are assigned to a specific topic and are expected to present the background leading up to the paper(s) as well as what was done in the study, the conclusions, and implications of the work. All students in the class are expected to read (and understand) the selected paper(s) and be prepared to ask questions and/or discuss any figure in the paper. MSTP Faculty are selected by the course director, MSTP's Pre-Clinical Associate Director, and asked to lead a 2-hour session with students, providing 2 articles related to a topic of their choice that the student(s) will present on. The faculty member should provide context for the topic and help guide the discussion and presentations.
- **MSTP Seminar (MSTP 7645)** is a required course for first year MSTPs to attend once a week to hear and present summer lab rotation talks, as well as hear the thesis year MSTPs' research update talks. This seminar provides an opportunity for the students to also hear from invited guest speakers on topics such as Mental Health Services, Disability Services, and PhD Programs on both the Anschutz and Boulder Campus.
- **MSTP Reading with a Professor (MSTP 7652)** is intended for MSTP first year students to identify a mentor to meet on a weekly/biweekly basis to discuss papers that have been assigned by the mentor. MSTP students often choose their mentor based on who they will be doing a laboratory rotation allowing the focus of the meetings to be on papers relevant to the summer project with a written proposal at the end regarding the project. The choices of subject and format are up to the student and mentor. The student is expected to show initiative and responsibility in identifying the specific topic.
- **MSTP Clinical Capstone (MSTP 7755)** is a week-long (5-day) clinical immersion course designed to assist MSTP students' transition back to medical school. Students will follow 2-3 patients, present on rounds, call consultants, and discuss care plans with patients and their families. Additional didactic sessions will focus on logistical aspects of functioning on an inpatient team.
- **Summer Research Rotations – MSTPs are required to do a minimum of 2 lab rotations before choosing one to be their thesis lab for their PhD work.** Students begin their first required summer rotation after completion of the first year curriculum. Students complete a second required laboratory rotation after their second/LIC year. The principal purpose of the two rotations is to aid students in selecting a thesis advisor and to provide exposure to a variety of research problems and laboratory techniques. While rotating, students are encouraged to participate in all lab activities to get an idea of what it will be like to be a member of that particular lab. Students may complete a first rotation in the summer prior to starting Medical School. The choice of a research advisor and project is perhaps the most important decision of the student's first two years in the

program. The quality of the projects underway in the laboratory, the influence of postdoctoral fellows and other students in the lab, the level of the advisor's involvement and the character of the advisor's relationship with the student will help to shape the rotation experience.

Legacy Curriculum Diagram (for students currently in their PhD Years)

Hybrid Curriculum Diagram (for the matriculating class of 2020 only)

Trek Curriculum Diagram (beginning 2021)

Program Learning Outcomes

MSTP does not confer either the MD or PhD degree, but rather we recruit students who seek to complete both degrees. We have a highly integrated curriculum combining medical and graduate courses in the first year, complete of the Graduate Preliminary Exam at the end of the first year, medical courses in the second year, and the students then enter a degree-granting graduate program. Once they complete all of the requirements for the PhD, they return to medical school to complete the last two years of clinical training.

The MST Program trains combined degree students to become proficient and successful clinicians and investigators who are able to:

- Demonstrate advanced knowledge of central concepts in the biomedical sciences
- Understand the current concepts in medicine and their chosen PhD field
- Read and critically evaluate the scientific literature
- Communicate effectively through oral presentations at seminars, conferences, and venues
- Write a competitive application for research funding
- Develop ancillary skills to obtain positions in a wide range of biomedical venues
- Become innovators and leaders in their respective fields and careers

Courses

MSTP 5017 - Hematologic & Lymphatic Systems (5 Credits)

This course focuses on the basic science and clinical concepts underlying the origin, development, normal function, and related hematologic and immunologic disease states. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

MSTP 5022 - Nervous System (8 Credits)

A foundational, interdisciplinary approach to nervous system structure and function in health and disease will include neuroanatomy, pathophysiology, and pharmacology, among others. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MSTP 5025 - Endocrine & Metabolic Systems (7 Credits)

Biochemistry, pathology, physiology, immunology, and pharmacology are combined with the clinical approach to diagnosis and treatment of disorders of the endocrine system. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MSTP 5026 - MSTP Reproductive System & Life Cycle (9 Credits)

Same as course IDPT5026.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

MSTP 7645 - MSTP Seminar (1.5 Credits)

Designed to expose MSTP and physician scientist students to research programs and opportunities in biomedical sciences at the CU Anschutz Medical campus and selected departments of the CU Boulder campus. Previously offered as IDPT 7645.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

MSTP 7651 - MSTP Lab Research Rotation (1.5-3 Credits)

This course is a 6 week laboratory rotation experience in an MSTP training laboratory. This course allows for MSTP students to rotate in the lab of an MSTP-appointed faculty in advance of selection of their graduate thesis program and lab. MSTP students should use this rotation to learn about the science and dynamics of the lab so that they can assess potential fit for their thesis studies. Prerequisite: Acceptance into the MST Program and signed permission from the MSTP Director.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring, Summer.

MSTP 7652 - MSTP Advanced Topics (1-5 Credits)

This course is designed for students in the MSTP and consists of in-depth small group (1-7 students) sessions that provide in-depth didactic and/or paper readings on subjects related to research rotations or thesis projects. Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci core courses); consent of Instructor. Previously offered as IDPT 7652

Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

MSTP 7655 - Thesis Years - Foundations of Doctoring (1-5 Credits)

This course intended for MD or MD-PhD students who have successfully completed all coursework for Phases I and II of SOM curriculum, are on leave of absence from SOM and wish to maintain clinical exposure and training during the leave. Prereq: All Phase I and II SOM courses. Previously offered as IDPT 7655

Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

MSTP 7755 - MSTP Clinical Capstone (1 Credit)

This 5-day clinical immersion course designed to acquaint MSTP students with clinical training. Didactics and discussions focus on clinical skills and inpatient medicine teams. In practical activities, students follow 2-3 patients, present on rounds, call consultants, and formulate plans of care.

Previously offered as IDPT 7755

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Spring.

MSTP 7805 - Case Studies: Molecules to Medicine (1 Credit)

This course is targeted for first year MSTP/Physician-Scientist students. Clinical cases will be presented/discussed by faculty and students to provide clinical context for basic science principles taught in the graduate core courses (IDPT 7811-7815). Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci Core Courses). Crosslisted: IDPT 5002. Previously offered as IDPT 7805.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

Policies

Expectations of MST Program Students

The key expectation of each student admitted into the CU Anschutz Medical Campus Medical Scientist Training Program is that they take full advantage of all CU Anschutz resources and couple that with personal responsibility to achieve optimal success. During the first two years of combined medical and graduate school training, there are clear and tangible academic and research milestones every MST Program student must meet. In the first two years, it is expected that students will obtain passing grades in their coursework, successfully complete two research rotations, and pass the MSTP Graduate Preliminary exam and USMLE Step I exam. In the third year, students should begin thesis research and successfully pass the Comprehensive Exam. During this year, students will organize the National M.D./Ph.D. Student Conference. In the subsequent years of thesis research, the milestones become less clear and success relies on a student's own self-motivation, intellectual drive and hard work. Graduate school is not a job – it is training for a challenging career; a student's success at this stage of training and in subsequent steps will depend on the student's own drive, initiative, and effort. The Thesis Advisor and Committee are in place to provide scientific and professional guidance and support. It is the student's responsibility to utilize his/her Thesis Advisor and Committee to lead a successful graduate experience and career.

Ultimately, the student determines their success!

Expectations for Ph.D. Training

The MST Program has the following expectations for a student's thesis career,

1. A student should be self-motivated. Motivation should come from within and not be determined by the mentor or arbitrary deadlines.
2. A student should work the necessary hours in the lab to complete his/her experiments. Graduate school is not a five-day a week, 9-5 job. The effort that students put in will be reflected in their success and the timetable for their graduation.
3. A student should be intellectually engaged in their research project. The mentor often initially conceives the project. However, by the Comprehensive Exam, the student should be actively participating in experimental decisions and research directions. In subsequent years, the student should take progressively more control in the execution and direction of their research. Conversely, a student may design his or her own project and have it critiqued and approved by the advisor.
4. A student must take initiative for his/her career and be accountable for successes and failures in research. If things are not working in the lab, the student should coordinate with the advisor to find a solution. The Thesis Advisor and Committee exist to help students, but students must be proactive.

Expectations for Clinical Training

The MST Program has the following expectations for a student's clinical training.

1. A student should master taking a clinical history, performing a physical exam, and sharpening clinical skills.
2. A student should have working knowledge of all of the clinical data for the patients in his/her care and contribute to the differential diagnosis and management plan.
3. A student should maintain professional behavior at all times. Professionalism includes, but is not limited to, working as part of the team, contributing to all aspects of patient care, and becoming familiar with the current and relevant clinical literature.

Expectations for Professionalism

The Medical Scientist Training Program has the following general expectations for an MSTP student:

1. A student must respond to emails from MSTP, the SOM, the Graduate School, Graduate Programs and mentor(s) in a timely manner (within 4 hrs if urgent and within 24 hrs if not urgent).
2. A student must notify the MSTP and SOM if they travel for any personal reason and expect to be away during class time; and notify MSTP and their PhD mentor if they travel during the research period.
3. Professional behavior is expected at all times. Self-reflection to assess whether the student is behaving in the most appropriate and professional manner will be expected.

Over the past decade, many medical and graduate school curricula have dealt with issues related to student professionalism. We expect that MST Program students will maintain the highest standards of professionalism throughout their training and career years. Failure to meet these expectations can lead to dismissal from MSTP.

What do we mean by the term "professionalism (<http://www.nbme.org/PDF/Publications/Professionalism-Conference-Report-AAMC-NBME.pdf>)"? We expect students to demonstrate:

- *honor and integrity*: being honest and answering questions truthfully
- *excellence and scholarship*: reading papers related to clinical situations while doing clerkships
- *respect*: across the board - of patients, other health care professionals, instructors, other students, and members of a research team
- *leadership*: mentoring those that can benefit from your knowledge and organizing a team or group with which you work; insight
- *accountability*: strong work ethic; timeliness; responding in a timely manner to e-mails sent by administration, advisors, instructors; commitment; dedication; legal/policy compliance
- *responsibility*: motivation; self-evaluation; independence; take the initiative to communicate regularly with faculty advisors, especially in matters related to research and progress within the graduate program
- *caring and compassion*: communication; sensitivity; tolerance; openness
- *altruism*: helping others who are busy; participation in student or school organizations

General Information

Welcome to the Medical Scientist Training Program

At the University of Colorado School of Medicine and Graduate School, the MST Program targets highly motivated students interested in a career in academic medicine. The successful student receives both the M.D. and Ph.D. degrees at the completion of the curriculum. During the first two years, the students take a combined medical and graduate school basic science curriculum designed to provide the scientific basis necessary both to biomedical research and medical practice. Students rotate through at least two research laboratories to obtain substantive research experience prior to the choice of a laboratory for thesis work. During the subsequent two to four years, the students enter a graduate program in one of the basic science departments fulfilling the requirements for the Ph.D., including successful defense of a dissertation and publication of at least two papers in peer reviewed journals. In the last portion of the program, the students return to the medical school curriculum to complete their clinical training.

New Student Information

The successful applicant to the MST Program enters the University of Colorado with dual status as a medical and a graduate student. The School of Medicine (SOM) Admissions Office handles all of the necessary paperwork for admittance to the School of Medicine and plans an orientation week before the MSI fall semester; the SOM Orientation is REQUIRED. Throughout the summer, students will receive several communications regarding Student Orientation Week. Please notify the School of Medicine of any postal or email address change to avoid a delay in receiving this important information.

The Graduate School Application Part is processed by the MST Program Administrator. Eligibility for admission to the Graduate School cannot be approved without the submission of the following:

- Official Transcript(s) from each College/University attended. Transcripts are not shared between the SOM and Graduate School
- Final Transcript from degree-granting institution documenting receipt of the undergraduate degree
- Tuition Classification for Colorado Residency. You will submit a form for both the SOM and Graduate School

MSTP will host a orientation prior to the SOM orientation to review MSTP specific information for the new students. There the newly matriculated students will meet with key faculty and MSTP Leadership. Representatives from the Medical and Graduate schools are present to outline requirements and answer any questions.

Email Communications

All communication relating to MSTP, Graduate School, School of Medicine, Faculty, and Staff must be with a "@cuanschutz.edu" email address; personal accounts such as gmail or yahoo should not be used. Students on the Boulder campus during their thesis years may use the "@colorado.edu" as a secondary email address, but emails coming from Anschutz Medical Campus will be sent to their "@cuanschutz.edu" email first. A student must respond to emails from MSTP, the SOM, the Graduate School, Graduate Programs and mentor(s) in a timely manner (within 4 hrs if urgent and within 24 hrs if not urgent).

Financial Support

Accepted students receive full funding, including a stipend (currently \$34,000/year, as of August 2021), tuition, health and dental insurance, and fees for the entire period of study. The MST Program provides the financial support during the students' medical school program years and the PI/thesis mentor and/or graduate program provides support during the students' thesis years. Continued support is contingent upon satisfactory academic, research, and professional performance by the student. *Deficient performance in any one of these areas can be grounds for dismissal from the MST Program or graduate program in which they are completing their PhD work, and result in termination of financial support (i.e., payment of tuition, fees and stipend) provided by the MST Program or by the PI/mentor.*

When a student enters a thesis lab, the thesis mentor assumes complete responsibility for the student's stipend, tuition, fees and associated research costs. The Program strongly encourages students to apply for fellowship support during the research years. The student returns to MST Program support upon defending a thesis and returning to medical school, unless other funds have been obtained.

Students who transfer to The University of Colorado Boulder or National Jewish Health for their Ph.D. should check with their Ph.D. Program for details regarding their financial support. These programs may vary slightly in their financial support and supporting medical insurance compared to what is provided on the Anschutz Medical Campus.

Qualification for financial aid may be affected for students assigned to the MSTP NIH T32, an F30 or F31 slots.

Student Health Insurance

All students will receive health and dental insurance coverage. Students will be automatically signed up for the University Student Health Insurance Program when registered for a minimum of 5 credit hours, unless they have alternate health insurance in place and specifically waive the University plan. Before the fall and spring semesters, students will need to fill out a waiver form through the Office of Student Health Promotion (<http://www.ucdenver.edu/life/services/student-health/insurance/Pages/default.aspx>), and follow the office's deadlines. Students must notify the MST Program Office if they plan to waive the student insurance. For more information on the plan and what it covers, contact Student Health Services at (303) 724-7674 or by email at: CUAnschutzStudentInsurance@cuanschutz.edu. **As previously listed, coverage of medical insurance differs at CU Boulder and/or National Jewish Health.**

Tuition Bills

The MST Program Administrator will pay tuition bills for each semester for students in their medical years. That tuition bill will reflect charges for the core courses for which students are pre-registered. It is the student's responsibility to notify the Administrator if a course has been added or dropped during the add/drop period and to return any refund checks from the Bursar's Office to the MST Program Office. Students must also inform the Administrator if they have financial aid or have submitted a waiver for medical and/or dental insurance.

Establishing Colorado Residency

All out-of-state students are required to petition for In-State Tuition Classification within their first year. It takes one year to establish Colorado residency. This process is outlined in a handout entitled "How to Establish Domicile for Tuition Purposes" and found on the Office of the Registrar's website [HERE \(https://www.cuanschutz.edu/registrar/residency/current-students/\)](https://www.cuanschutz.edu/registrar/residency/current-students/). Students need to read this information carefully so that they

understand the process. The MST Program will pay out-of-state tuition during the first year ONLY. Each student must begin to establish residency IMMEDIATELY upon his or her arrival in Colorado.

Ways to establish residency:

1. Register your automobile with the State of Colorado
2. Obtain a State of Colorado driver's license (even if you don't have a car)
3. Register to vote (even if you don't plan to vote)
4. Obtain a lease agreement or proof of home ownership with the student's name on the document

Submit early if possible.

Any student failing to meet the residency deadline will be personally responsible for the difference between in-state and out-of-state tuition rates.

Questions about residency should be directed to the Registrar's Office.

Office of the Registrar
University of Colorado | Anschutz Medical Campus Campus Box A054, Education II North
13120 E. 19th Avenue
Aurora, CO 80045
Email: TuitionClassification@CUAnschutz.edu
Voice: 303-724-8000
Fax: 303-724-8060

Student Tutoring Assistance

The MST Program and the School of Medicine have tutoring services available. Any student having difficulties in their classes should contact the MST Program Office immediately. With approval from the Director or Associate Directors, the MST Program will assist with tutoring fees and will help pay for additional preparatory courses. Students are encouraged to seek help early, as course remediation can delay student progression through an already tight timetable.

Publications and Acknowledgments

All student publications, including abstracts, journal articles and theses, should acknowledge the MST Program along with other university acknowledgments. Students supported on the MST Program training grant should acknowledge the grant number in all publications (MSTP T32 GM008497).

The MST Program Office has copies of all student theses. Students need to provide one bound copy of the final version of their thesis to the MST Program at the same time they turn it in to their Graduate Program. The MST Program will reimburse (students with itemized receipts) for the Program's copy.

Annual M.D./Ph.D. National Student Conference

CU Anschutz MST Program students organize the Annual National MD/PhD Student Conference during their first laboratory year. A student transferring into the CU MSTP from either another MD/PhD or MST Program or from the SOM MSII year will consult with MSTP leadership to decide the optimal year to participate in organizing this conference. The MST Program covers registration and meeting costs for CU Anschutz MST Program students. However, once CU Anschutz students register for the Conference, they are required to attend, as expenses cannot be refunded. If an emergency occurs, it is important to notify the Administrator and Director or Associate Directors as soon as possible.

All incoming CU Anschutz MST Program students are expected to attend the conference. In addition, MST Program students must attend a minimum of two conferences. MSTP students in their thesis or clinical years are required to present an abstract (oral or poster) in order to attend. In the event of extenuating circumstances that may conflict with these requirements, MST Program students should discuss their situation with the Director or Associate Directors as soon as possible to obtain a formal exception to the requirements stated above.

Students who attend are expected to stay the entire length of the conference. If you need to leave early, this needs prior approval from the Director(s) and/or the Administrator.

Vacations

Students may schedule one-week vacation during the summer. An optimal time for an MSI/II student to take the vacation is before or after the laboratory rotation and/or before re-entry into their academic year. Students need to discuss vacation plans with their rotation/laboratory mentor. Students **MUST** let the MST Program know of their plans. MSI students receive a week-long winter break vacation after Clinical Interlude. Pre-clinical students also receive a one-week spring break vacation in March along with the Medical Students. Depending on the student's choice of spring elective, **the medical and graduate school schedules may not coincide with spring break**. It is the student's responsibility to check this in advance and make appropriate plans.

Office Resources Available to MST Program Students

Books, Test Prep Materials and MST Program Student Theses (Available in the MSTP office) Color Printer (MST Program Office)

Mail Box in MST Program Office (Campus Box C296) Black and White Copier

Mental Health Resources Available to MST Program Students

Campus Mental Health Services—

<http://www.ucdenver.edu/life/services/student-health/mental-wellness/Pages/default.aspx>

RAVE Campus Emergency Notification Service—

<https://www.cuanschutz.edu/police/anschutz-alerts/>

CARE – Campus Assessment, Response & Evaluation Team (303) 315-7306;

shareaconcern@ucdenver.edu – <http://www.ucdenver.edu/life/services/CARE/Pages/default.aspx>

Refer to the Graduate School Handbook for a full list of services.

MST Program Alumni

Mailing List

University of Colorado MST Program graduates are required to provide a forwarding address, both email and postal, for future correspondence. Alumni will be added to a University of Colorado MSTP distribution list and will continue to receive newsletters and important announcements. Alumni will also be contacted during grant renewals for current positions and recent publications.

Publications, Positions and Funding Support

NIH requires the MST Program to track publications and positions of current and past students, so graduates of the CU Anschutz Medical Campus MST Program must report recent publications and career progress. The University of Colorado MSTP website will soon have a PubMed link to all alumni publications. Similarly, funding records will also be requested in order to assess overall success as an investigator in academic medicine. **To aid in tracking, we require MSTPs to create a uniform ORCID identifier number and report this number to our office.**

Leave of Absence Requests

Leave of Absence requests that occur during the first two years or the last two years of medical school and during the period between completion of USMLE Step 1 and committing to a PhD- degree-granting graduate program will require that the MSTP student meet with MSTP and SOM leadership to discuss this option. The student will be required to write a letter stating the reason for the request, a plan of action during the LOA, and a plan for return to MSTP and/or the SOM. A copy of this letter should be submitted to the SOM Associate Dean of Students and to the Dean of the Graduate School. The SOM Promotions Committee will review such requests and make final decisions.

If the Leave of Absence occurs during the thesis years, the MSTP student should confer with the MSTP Leadership, his/her PI/mentor and the student advisor of their graduate program (and likely the Program Director as well). Again, the student will be required to write a letter stating the reason for the request, a plan of action during the LOA, and a plan for return to MSTP and/or the thesis laboratory. A copy of this letter should be submitted to the SOM Associate Dean of Students, with the mentor and the graduate program making the final decision.

When students take a Leave of Absence, per University Policy, all financial support, including medical insurance coverage, will be suspended until the student returns to active MSTP, Graduate and/or SOM status. Some arrangements can be made for the student should insurance be necessary for them while on leave. This is determined on a case-by-case situation.

Dismissal and Appeals

As noted in the “Expectations” section of this Student Handbook, there are clear professionalism behaviors and tangible academic and research milestones that every MST Program student must meet in order to remain in good standing as an MSTP student. The MST Program, directors and administrators, including SOM leadership will support students through any and all difficulties at any point during both their medical and graduate school years.

Grounds for dismissal from MSTP include: poor academic performance; subpar performance in the laboratory rotations; professionalism issues; failing the Preliminary Exam; failing the Comprehensive Exam; poor progress in their PhD Thesis work; or dismissal from their Graduate Program and Graduate School.

Students who the program feels are eligible for dismissal will be asked to meet with the Program Director, Associate Directors, and/or SOM Leadership at any point in the program to review their behavior, training progress, and commitment to the program. The student will be given a warning until the program feels the student has remedied their situation.

The MSTP Leadership will schedule regular meetings with the student, as they feel necessary, to continue to review the student’s progress. The student can also schedule meetings with any of the Directors at any time during this period.

Dismissing a student from MSTP is done only after very careful review, by the MSTP Executive Committee, of the student’s behavior, professionalism, academic and research training progress, and commitment to a career as a physician-scientist; the MSTP Executive Committee includes MSTP, SOM,

and Graduate School leadership faculty. If the decision is to dismiss, by the majority of the MSTP Executive Committee, the student will be notified immediately following review. Finally, upon dismissal from MSTP, the student will no longer receive the financial support (tuition, fees, insurance, or stipend) provided by MSTP.

Dismissal from MSTP does not necessarily mean dismissal from Medical School, but such a result can occur. If dismissal from MSTP occurs, the student will need to submit a formal request in writing to the SOM Associate Dean of Students and the SOM Promotions Committee to continue in medical school. The request to continue as a medical student must be approved by either the SOM Associate Dean of Students and/or the SOM Promotions Committee. See SOM Policies and Procedures HERE (<http://www.ucdenver.edu/academics/colleges/medicalschoo/education/studentaffairs/studentresources/Documents/StudentHandbook.pdf>).

Below are the basis in which a MSTP student could be dismissed from the MST Program:

1. Failure to pass the preliminary exam.
2. The inability to match into a thesis lab due to professionalism issues or because the MSTP student has accumulated subpar performance in the previous rotations such that PIs are not willing to accept that student.
3. Failure to pass the Comprehensive Examination. The student's Graduate Program can dismiss the student from that Program at that point. Dismissal from the Graduate Program results in dismissal from Graduate School and dismissal from MSTP.
4. Poor academic performance while in medical school and/or graduate school.

Below is the outline of the procedure for Appeal of MSTP Dismissal decisions during distinct periods of the MD/PhD training plan:

During MSI or MSII – If dismissal from MSTP occurs within the first two years of medical school, appeals must be submitted in writing to the SOM Associate Dean of Students, the SOM Promotions Committee, and the MSTP Director, stipulating the basis for the appeal.

During Graduate School/Thesis Years – If dismissal from MSTP occurs at any point after the MSTP student has committed to a graduate program and/or is on a Leave of Absence from the SOM, appeals regarding the dismissal from their graduate program (and thus from the Graduate School) must be submitted in writing to the Dean of the Graduate School stipulating the basis for the appeal; with copies to the Graduate Program Director, the MSTP Director, and the SOM Associate Dean of Students.

During MSIII or MSIV – If dismissal from MSTP occurs during the last two years of medical school, appeals regarding the dismissal from MSTP at this point in the training must be submitted in writing to the Associate Dean of Students, the SOM Promotions Committee and the MSTP Director, stipulating the basis for the appeal.

Faculty

For a complete listing of all MSTP affiliated faculty across CU Anschutz, CU Boulder, and National Jewish Health campuses, please click here (<https://medschool.cuanschutz.edu/mstp/people/faculty/>).

Contact Us

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Microbiology (PhD)

Overview

The Graduate Program in Microbiology at the University of Colorado Anschutz Medical Campus is a Ph.D. program that prepares students to contribute to an understanding of microbial species, including archaea, bacteria, fungi, helminths, protozoa, and viruses, and their positive and negative roles in the health of humans. Despite progress and breakthroughs in public health, vaccination, therapeutics, and antibiotics, there are many ongoing and emerging challenges in the prevention and treatment of infectious disease. As we continue to learn about the complex populations of organisms that surround us and colonize us, rigorous training of future young investigators in microbiology will continue to be essential to human health. The principle aim of the Graduate Program in Microbiology is to help produce the next generation of microbiologists to address unsolved and arising questions in basic and translational microbiology research.

The Graduate Program in Microbiology provides advanced training and education for students with the desire and ability to thrive in a stimulating, research-oriented graduate program leading to careers in science in the academic, governmental, or private sectors. Close individual attention is given by the faculty to the needs and training of each graduate student. The Microbiology Program faculty includes members of the Departments of Immunology and Microbiology, Medicine, Neurology, Pediatrics, and Biochemistry and Molecular Genetics. Faculty research interests include molecular mechanisms of bacterial and viral pathogenesis, the molecular biology of microbial gene expression, pathogen-host interactions, innate and adaptive immune responses to infection, mechanisms of immune evasion, the role of the microbiome in health and disease, structural biology, and development of novel therapeutics and vaccines.

Admissions Requirements

Admissions Philosophy

The Graduate Program in Microbiology seeks students with the intellectual aptitude, independence, and motivation to pursue scientific research. Students are considered and selected on the basis of past academic performance, previous laboratory research experience, recommendations, and individual interviews. While previous experience in Microbiology coursework and research is helpful, the Graduate Program in Microbiology welcomes applicants with varied backgrounds. Students most likely to succeed have traditionally been those with intellectual achievement and creativity, first-hand understanding of laboratory research, and a strong personal desire and motivation to progress in their scientific training.

There are 3 ways to enter the Microbiology Program:

- Apply directly to the Microbiology Graduate Program.
- Apply to the Biomedical Sciences Umbrella Program and join the Microbiology Graduate Program after your 1st year.
- Those interested in pursuing an MD/PhD with research interests in Microbiology may apply to the Medical Scientist Training Program and complete their PhD portion through Microbiology. Note: the MSTP follows a separate application process with different deadlines.

The Graduate Program in Microbiology also works closely with the Immunology Program and the Molecular Biology graduate programs, and

several labs have joint appointments which can allow for a student to rotate and/or complete thesis work in a Microbiology lab.

Entrance Requirements

Undergraduate Studies | The Graduate Program in Microbiology requires a baccalaureate degree (BS or BA) with a 3.0 (out of 4.0) Grade Point Average (GPA), although exceptions can be considered. Admissions Committee reviews completed coursework to determine if each applicant has sufficient background to pursue our doctoral degree. Specific courses are not required, but coursework in the following subjects is recommended and can enhance an application: Microbiology, Immunology, Virology, Organic Chemistry, Biology, Biochemistry, Cell Biology, Genetics, Molecular Biology, Molecular Genetics, and Physiology.

Research Experience | Research experience, particularly experimental, hypothesis-driven research experience, is highly recommended. This type of experience is extremely valuable in providing insight to both the Admissions Committee and the candidate as to their commitment to the rigors and rewards of scientific endeavor.

Letters of Recommendation | Three (3) letters of recommendation are required for an application to be considered complete, and thus be reviewed by the Microbiology Admissions Committee. These letters are important and are a critical element for the Admissions Committee's evaluation of applications. Thus, when possible, applicants should select faculty research mentors that can discuss academic performance, research experience, and the likelihood of the applicant's future success as a scientist.

DEADLINE FOR APPLICATIONS IS DECEMBER 1st.

Applications will open September 1, and all application and supplemental materials are due no later than December 1. Applications received after December 1 may not be considered.

To apply for admission applicants must submit the following:

- Online Graduate School application
- A \$50.00 domestic and \$75.00 international non-refundable application fee.
- One (1) official transcript of all academic work completed to date. To be considered "official", the transcripts must come directly from the issuing institution.

Electronic Transcripts should be sent to
graduate.school@cuanschutz.edu

OR

Mail a physical copy to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

- Three (3) letters of recommendation. Letters should be from individuals such as college professors or faculty mentors who are familiar with your academic and/or laboratory achievements. Such letters should be submitted electronically through the on-line application.
- GRE scores are no longer required for admission.

- International Applicants only: Students whose native language is not English or who have completed their studies at an institution where English was not the language of instruction, must demonstrate English language proficiency by submitting scores of the Test of English as a Foreign Language (TOEFL) or its equivalent. **Visit International Admissions for more information.**

Degree Requirements

First Year

First Year

Fall		Hours
MICB 7650	Research in Microbiology ⁰⁰¹	1-10
MICB 7650	Research in Microbiology ⁰⁰¹	1-10
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science (Topic A) Microbiology in Biomedical Research	2
Choose one of the following:		
BMSC 7810	Core Topics in Biomedical Science (Topic B) The Microbiome in Health and Medicine	2
BMSC 7810	Core Topics in Biomedical Science (Topic B) Gene Regulation and RNA Biology in Disease	2
BMSC 7810	Core Topics in Biomedical Science (Topic B) Principles of Cancer Biology	2
Hours		16-34
Spring		
MICB 7650	Research in Microbiology ⁰⁰¹	1-10
MICB 7703	Molecular Mechanisms of Bacterial Disease	3
MICB 7701	Molecular Virology and Pathogenesis	3
Hours		7-16
Summer		
MICB 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		24-60

Second Year

Second Year

Fall		Hours
MICB 7650	Research in Microbiology ^{0V3}	1-10
IMMU 7607	Science as a Profession	1
Hours		2-11
Spring		
MICB 7650	Research in Microbiology ^{0V3}	1-10
IMMU 7605	Workshop in Scientific Writing	1
Hours		2-11
Summer		
IMMU 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		5-32

Learning Objectives

The PhD program in Microbiology trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts in the biomedical sciences.
- Understand current concepts in microbiology.
- Read and critically evaluate the scientific literature.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Present research results in peer-reviewed publications and in a dissertation.
- Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
- Write a competitive application for research funding.
- Develop ancillary skills, where necessary, to obtain positions outside of academic research.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

IMMU 7605 - Workshop in Scientific Writing (1 Credit)
This workshop will consist of one session weekly for students to be critiqued on writing assignments designed to provide basic training in writing grant proposals and manuscripts.
Grading Basis: Letter Grade
Typically Offered: Spring.

IMMU 7607 - Science as a Profession (1 Credit)
This course discusses ethical issues, conflicts of interest, and regulations for working with humans or animals. It also includes instruction on writing papers and grants, giving effective presentations and advice on finding jobs in academia and industry.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

MICB 7650 - Research in Microbiology (1-10 Credits)
Research work in microbiology. Prereq: Consent of instructor.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 99.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

MICB 7701 - Molecular Virology and Pathogenesis (3 Credits)

Aurora, CO 80045

Topics in this course include viral structure and genome organization, replication and expression of viral genomes, mechanism of action of tumor viruses, molecular aspects of virus-host cell interactions, animal models of infectious diseases and pathogenesis of human viruses.

Prereq: MICB 7706, MICB 7705 are desirable but not required. Restriction: Permission of Instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

MICB 7703 - Molecular Mechanisms of Bacterial Disease (3 Credits)

The course focuses on molecular processes that bacteria utilize to cause disease in humans. The course content will use specific examples from pathogenic bacteria to illustrate common virulence mechanisms utilized to initiate, maintain and survive interactions with host cells. Prereq:

Recommended Fundamentals of Microbiology Restrictions: Permission of the instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

MICB 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in microbiology. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Program Calendar

August – Department of Immunology & Microbiology Scientific Conference & Retreat

October – Immunology Program & Microbiology Program Student (only) Retreat

October – MPID T-32 Mini-symposium

Weekly – Research in Progress Seminar with the Immunology Program

Weekly – Infectious Disease Journal Club

Weekly – Speaker Series with Immunology Program

Twice per year – Student Invited Speaker Seminar and meetings

Contact Us

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Program Administrator

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MICR@cuanschutz.edu

Microbiology Graduate Program

Mail Stop C290

13001 E. 17th Place, Room 1327

Molecular Biology (PhD)

Overview

The Molecular Biology Program is dedicated to providing rigorous training to its students in a supportive environment. Molecular Biology faculty are members of many different departments and are applying the techniques of molecular biology to answer questions in diverse areas. Molecular biology, the science of how living things work at the molecular level, has led the recent revolution in our understanding of human disease and gave birth to the biotechnology industry. In almost all aspects of modern biomedical research, a professional knowledge of molecular biology is essential. Our training program is designed to equip students for careers at the cutting edge of biology.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online Graduate School application
 - Personal Statement
 - Research Experience explanation (more in-depth than what is provided in the resume requirement)
 - Resume: The applicant’s current resume or curriculum vitae, including professional work/practice since graduating with a bachelor’s degree (or equivalent).
 - Diversity, Equity and Inclusion Statement
 - Three recommendations: to be completed by people who know your professional, academic and/or personal achievements or qualities well. As such, references must be from professional contacts, such as employers, supervisors, former faculty, preceptors, or professional colleagues.
- Official Transcripts from all post-secondary colleges and/or universities attended by the applicant.
- Application Fee: A nonrefundable application fee of \$50.00 (U.S. dollars – Domestic Applicants). Checks or money orders should be made out to the University of Colorado.
- Interview: If selected, candidates will be contacted to attend a recruitment weekend[HS2] , including interviewing with current MOLB Faculty and Students.
- Transcripts: Official transcripts from all post-secondary colleges and/or universities should be sent directly to:

University of Colorado Denver

Graduate School

Mail Stop C296

Fitzsimons Building, C5000

13001 E. 17th Place

Aurora, CO 80045

OR Electronic Transcripts should be sent
to: graduate.school@cuanschutz.edu (preferred)

International students must meet ALL the requirements listed above along with those required by the Office of International Affairs. The application fee for international students is \$75.00.

Degree Requirements

First Year

First Year		Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science ^{one} section from A & one section from B	2
MOLB 7650	Research in Molecular Biology ^{sections 001 & 002}	1-10
Hours		9-18
Spring		
MOLB 7800	Advanced Topics in Molecular Biology	3-4
MOLB 7650	Research in Molecular Biology ^{section 001}	1-10
Elective of student’s choosing		
Hours		4-14
Summer		
MOLB 8990	Doctoral Thesis in Molecular Biology or MOLB 7650 or Research in Molecular Biology	1
Hours		1
Total Hours		14-33

Second Year

Second Year		Hours
Fall		
MOLB 7661	Molecular Biology Seminar	1
MOLB 7650	Research in Molecular Biology ^{Section 0V3}	1-10
MOLB 7950	Informatics and Statistics for Molecular Biology	3
Hours		5-14
Spring		
MOLB 7661	Molecular Biology Seminar	1
MOLB 7650	Research in Molecular Biology ^{Section 0V3}	1-10
Elective of student’s choosing		
Hours		2-11
Summer		
MOLB 8990	Doctoral Thesis in Molecular Biology	1-10
Hours		1-10
Total Hours		8-35

Third Year through PhD Completion

Fall		Hours
MOLB 8990	Doctoral Thesis in Molecular Biology	5
Hours		5
Spring		
MOLB 8990	Doctoral Thesis in Molecular Biology	5
Hours		5
Summer		
MOLB 8990	Doctoral Thesis in Molecular Biology	1
Hours		1
Total Hours		11

Learning Objectives

The MOLB Program has defined five objectives that convey our approach to research and professional training.

Objective 1 is to provide broad training in foundational molecular and cellular biology with focused research opportunities in diverse disciplines (e.g., bioinformatics, cell biology, cancer biology, developmental biology, epigenetics, immunology, microbiology, RNA biology, and structural biology). Our broad interdisciplinary training is key to the success of our trainees and a defining feature of MOLB relative to other AMC training programs. The scientific breadth of our faculty exposes our trainees to many different techniques and provides opportunities for students to combine different approaches to answer their own scientific questions. We cultivate a collegial environment across the program, encouraging intellectual exchange and collaboration between labs from many departments and measure our success by the number and quality of research publications produced by our trainees and the number of external grants that they are awarded based on their research.

Objective 2 is to provide student-oriented and well-balanced training that emphasizes development of creative and independent thinking, strong communication skills, and professional responsible conduct. A key to MOLB training is its focus on developing professional skills including teamwork, science communication, project management, and leadership. The MOLB Program incorporates many technical, operational, and professional elements to provide balanced training for our students.

Objective 3 is to develop and apply the newest techniques that drive advances in science. As the late Sydney Brenner articulated, *"Progress in science depends on new techniques, new discoveries, and new ideas, probably in that order."* A primary objective of the MOLB Program is to position our graduates to lead the forefront of scientific technology deployment and development. We develop scientists who are well-versed in existing scientific techniques and capable of developing their own experimental approaches to answer new questions. We combine rigorous "wet" and "dry" laboratory training, intensive discussion of current literature, workshops, and mini-courses that focus on emerging techniques for molecular and cell biology research, and we measure our success by our trainees' performance in preliminary and comprehensive examinations, and laboratory research.

Objective 4 is to create and sustain an inclusive and diverse research training environment. We value diversity in our program and the scientific community, and developed several approaches to increase the cultural, racial, and social diversity in the MOLB Program. Some of these include MOLB-specific recruitment and retention strategies and diversity training for our faculty and students.

Objective 5 is to promote the career advancement of our trainees and introduce them to a broad range of career choices. The MOLB program provides skills and opportunities for experiential learning needed to succeed in many science-related careers, including academic research, consulting, teaching, government and public policy, technology transfer and patent law, science writing, and science communication, and measure our success by the diversity of science-related careers that our trainees pursue.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

MOLB 7650 - Research in Molecular Biology (1-10 Credits)
Research work in molecular biology. Prereq: Consent of the instructor.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 99.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

MOLB 7661 - Molecular Biology Seminar (1 Credit)
Seminar series provides a forum for the presentation of scientific experiments and information in molecular biology by faculty, postdoctoral fellows, graduate students and invited outside guest speakers.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring.

MOLB 7800 - Advanced Topics in Molecular Biology (3-4 Credits)
Course instructs graduate students how to critically evaluate scientific literature. Course in 4 blocks; topics include nucleic acid, chromatin structure, DNA replication, RNA transcription, RNA processing, cell cycle control, genetics of model organisms. Papers chosen by instructors, presentations by students. Prereq: IDPT 7811, 7812, 7813, 7814, 7815.
Restriction: By Permission of instructor. Course offered in 4 blocks of 1 hour of credit each.
Grading Basis: Letter Grade
Repeatable. Max Credits: 4.
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

MOLB 7950 - Informatics and Statistics for Molecular Biology (3 Credits)
This course covers the design and analysis of common molecular biology experiments with thorough coverage of statistical and informatic approaches to data analysis. The course begins with a "boot camp" that covers use of shell programming, R/R Studio, and Python scripting in bioinformatics. Pre-Req: MOLB-PhD or CSDV-PhD students only
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

MOLB 7900 - Practical Computational Biology for Biologists: Python (2 Credits)

Comp. biology class aimed at biology PhD students. Topics covered include: basic practices for coding in python; analysis of standard high-throughput genomic data to study the regulation of gene expression; intro to modeling gene expression; data visualization; communicating computational analysis/results. 3 wks. lecture, lab & recitation

Grading Basis: Letter Grade

Typically Offered: Spring.

MOLB 8990 - Doctoral Thesis in Molecular Biology (1-10 Credits)

Doctoral thesis work in molecular biology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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University of Colorado Anschutz Medical Campus

12801 E 17th Avenue

Mail Stop 8116

Aurora, CO 80045

Neuroscience (PhD)

Overview

The Neuroscience Training Program at the CU School of Medicine provides multidisciplinary PhD training covering the breadth of neurobiology. Hands-on research training in state-of-the-art laboratories and formal coursework in cellular and molecular neurobiology, systems, neural development, neuropharmacology, and biochemistry, propels students to competitive careers in the sciences.

Admissions Requirements

The Neuroscience application deadline is December 1.

PRIORITY DEADLINE FOR INTERNATIONAL APPLICANTS IS NOVEMBER 1.

Applications received by December 1 will be given first consideration for admission to the Fall Semester of the following year, but applications received subsequently may also be considered.

An application for admission must include the following:

- Graduate School on-line application (Includes resume, statement of purpose and research statement)
- A \$50 (domestic) or \$75 (international) non-refundable application fee. An application will not be processed without payment. Fee waivers are available for qualified applicants.
- Three (3) letters of recommendation
- International Applicants should review the additional requirements on the International Admissions Website: <https://www.ucdenver.edu/international-admissions/apply-for-admission/graduate> (<https://www.ucdenver.edu/international-admissions/apply-for-admission/graduate/>)
- One (1) unofficial or official transcript of all academic work completed to date. An official transcript will be required following acceptance to matriculate into our program and must come from the issuing institution directly and sent either electronically or mailed to:

Electronic Transcript(s): graduate.school@cuanschutz.edu

Mailed Transcript(s):

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

Exams | The GRE is not required. International students may be required to submit proof of English language proficiency.

Undergraduate Coursework | An undergraduate degree or its equivalent is required. A baccalaureate degree in a biological science, chemistry, physics or engineering is recommended.

GPA | There is no absolute requirement for grade point average above that required by the graduate school, but successful applicants will generally have GPAs above 3.2 (A=4.0).

Research Experience | Research experience is strongly recommended.

Degree Requirements

First Year

First Year		Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
NRSC 7501	Introduction to Neuroscience	1
NRSC 7615	Developmental Neurobiology	3
NRSC 7650	Research in Neuroscience	2
NRSC 7662	Survey of Neuroscience	1
NRSC 7663	Neuroscience Journal Club	1
Hours		14

Spring		Hours
NRSC 7600	Cellular & Molecular Biology	3
NRSC 7610	Fundamentals of Neurobiology	3
NRSC 7650	Research in Neuroscience	1
NRSC 7662	Survey of Neuroscience	1
NRSC 7663	Neuroscience Journal Club	1
Hours		9
Total Hours		23

First Year		Hours
Summer		
NRSC 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Second Year ¹

Second Year		Hours
Fall		
BMSC 7811	Responsible Conduct of Research	1
BMSC 7820	Statistics and Data Analyses for the Biomedical Sciences	3
NRSC 7650	Research in Neuroscience	1-10
NRSC 7663	Neuroscience Journal Club	1
Hours		6-15

Spring		Hours
NRSC 7650	Research in Neuroscience	1-10
NRSC 7612	Nervous System Modeling with NEURON	1
ELEC 5375	Engineering Neuroscience	3
BIOE 5053	Optics & Microscopy in Biomedical Research	3
NRSC 7657	Workshop in Advanced Programming for Neuroscientists	1
MOLB 7950	Informatics and Statistics for Molecular Biology	3
NRSC 7661	Grant Proposal Writing Workshop	1
NRSC 7663	Neuroscience Journal Club	1
Hours		14-23
Total Hours		20-38

Second Year

Summer		Hours
NRSC 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		1-10

Third Year & Beyond ¹

Code	Title	Hours
NRSC 8990	Doctoral Thesis	1-10

¹ Students in Year 2 or 3 are required to take a minimum one-credit elective course that provides training in quantitative methods in neuroscience. Some options include: MOLB 7950 Informatics and Statistics for Molecular Biology, NRSC 7612 Nervous System Modeling with NEURON, ELEC 5375 Engineering Neuroscience, BIOE 5054 Introduction to Regulatory Affairs, NRSC 7657 Workshop in Advanced Programming for Neuroscientists.

Learning Objectives

Graduate education in general | Doctoral education is the foundation of future scholarship and the “engine” of the research enterprise. It prepares future faculty and leaders in the academy and other areas of industry and society.

Program/Student Learning Outcomes | The PhD program in Neuroscience trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts in the biomedical sciences.
- Understand the current concepts in Neuroscience.
- Read and critically evaluate the scientific literature.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Present research results in peer-reviewed publications and in a dissertation.
- Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
- Write a competitive application for research funding.
- Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

Courses

BIOE 5053 - Optics & Microscopy in Biomedical Research (3 Credits)
Graduate overview of optical imaging, ranging from classical microscopy to advanced non-linear techniques and includes theory, technology and applications in biomedical sciences. This will prepare students for developing and applying state-of-the-art optical imaging in their research. Cross-listed with BIOE 4053. Prereq: Grad standing or permission from the instructor. Max Hours: 3 Credits.
Grading Basis: Letter Grade

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806

Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

ELEC 5375 - Engineering Neuroscience (3 Credits)
In this course, mathematical models and data processing strategies will be introduced as well as other cutting-edge research techniques to help students understand how these techniques can be applied to solve modern neuroscience problems. Prereq: ELEC 3316 or graduate standing. Cross-listed with ELEC 4735 and NRSC 7674 (Anschutz Medical Campus course). Max Hours: 3 Credits.
Grading Basis: Letter Grade
Prereq: ELEC 3316 or Graduate Standing

MOLB 7950 - Informatics and Statistics for Molecular Biology (3 Credits)
This course covers the design and analysis of common molecular biology experiments with thorough coverage of statistical and informatic approaches to data analysis. The course begins with a “boot camp” that covers use of shell programming, R/R Studio, and Python scripting in bioinformatics. Pre-Req: MOLB-PhD or CSDV-PhD students only
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

NRSC 7501 - Introduction to Neuroscience (1 Credit)
Introduction to study of the nervous system from the level of the brain to an understanding of how neurons are specialized for communication and information processing. This course is a prerequisite for NRSC 7600 series courses.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

NRSC 7600 - Cellular & Molecular Biology (3 Credits)
A comprehensive, in-depth, discussion-based course intended for candidates for the Ph.D. in Neuroscience. Topics include ion channel structure and function, ionic basis of the resting and action potential, and the biochemistry and physiology of direct and synaptic transmission.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

NRSC 7650 - Research in Neuroscience (1-10 Credits)
Research work in neuroscience. Prereq: Consent of instructor.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 99.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

NRSC 7662 - Survey of Neuroscience (1 Credit)
Designed to expose first year graduate students to current topics in neuroscience.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring.

NRSC 7610 - Fundamentals of Neurobiology (3 Credits)

This course will provide basic knowledge on the structure and function of the nervous system. The lectures will be supplemented by discussion of primary research literature in neurobiology. Prereq: NRSC 7600 or equivalent at the discretion of the instructors.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

NRSC 7615 - Developmental Neurobiology (3 Credits)

This course will cover fundamental principles regarding development of the nervous system. The format of the course will consist of lecture plus reading of primary literature.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

NRSC 7661 - Grant Proposal Writing Workshop (1 Credit)

Course is practical workshop in grant-writing culminating in a mock review panel including course participants. Students will examine various proposal types/formats, then write their own proposal in the format of NRSA fellowship application. Restriction: Students with adequate neuroscience background. Prereq: NRSC 7610.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

NRSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in neuroscience. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

NRSC 7612 - Nervous System Modeling with NEURON (1 Credit)

The objective of this course is to introduce students to biophysically accurate modeling of single neurons and neuronal networks with NEURON simulation environment. Students will implement NEURON in a project of their choice, possibly related to their primary 'wet' research.

Grading Basis: Letter Grade

Typically Offered: Spring.

NRSC 7657 - Workshop in Advanced Programming for Neuroscientists (1 Credit)

MATLAB is an accessible programming environment that is widely used by scientists and engineers and offers powerful tools for data acquisition and data analysis. Students will develop their own MATLAB programs that are relevant to their particular line of research.

Grading Basis: Letter Grade

Typically Offered: Summer.

PHCL 7605 - Responsible Conduct of Research (1 Credit)

The Department of Pharmacology in the University of Colorado School of Medicine organizes and offers an interactive course during the fall semester entitled "Responsible Conduct of Research". The course is designed to inform students, trainees and faculty to the NIH requirements for ethical and responsible research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

Policies

Please refer to the Office of Research Education and the Graduate School policy pages.

- <https://graduateschool.cuanschutz.edu/forms-resources/resources> (<https://graduateschool.cuanschutz.edu/forms-resources/resources/>)
- <https://medschool.cuanschutz.edu/ore/forms-and-resources> (<https://medschool.cuanschutz.edu/ore/forms-and-resources/>)

The Neuroscience Program handbook is located on the curriculum page of our website: <https://www.cuanschutz.edu/graduate-programs/neuroscience/curriculum> (<https://www.cuanschutz.edu/graduate-programs/neuroscience/curriculum/>)

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Pharmacology and Molecular Medicine (PhD)

Overview

The Pharmacology and Molecular Medicine Training Program has a long and well-established history of training Ph.D. students in the biomedical sciences. The NIH funded Pharmacology pre-doctoral Training Grant (T32), is one of the longest standing grants of its type in existence. Students enter the Training Program either directly, via the Biomedical Sciences (umbrella) Program, or the Medical Scientist Training Program (MSTP). Currently, there are ~35 students and ~55 training faculty associated with the Program.

The Pharmacology and Molecular Medicine Training Program is truly both interdisciplinary and interdepartmental with faculty members having primary appointments in Anesthesiology, Biochemistry & Molecular Genetics, Immunology, Medicine, Neurology, Pathology, Pediatrics, Pharmaceutical Sciences, Pharmacology, and Physiology & Biophysics. Training Program faculty are internationally renowned in the areas of neuroscience, cancer biology, cardiovascular biology, signal transduction, structural biology, and bioinformatics.

One of the defining features of the Pharmacology and Molecular Medicine Program training faculty is the highly collaborative and interdisciplinary approach to their work. Laboratories frequently use multiple parallel approaches including molecular biology, structural biology, genomics, and informatics and cutting-edge methodologies employing high powered imaging techniques including optogenetics. Another defining feature of the Program is the focus on personalized medicine and translating fundamental benchtop discoveries to clinical practice.

Students admitted to the Pharmacology and Molecular Medicine Program are fully funded. In addition to the current stipend (\$38,110/yr subject to update), trainee support includes coverage of tuition & fees, health insurance, access to mental health resources, and free public transportation.

During their 1st year, Program students complete a set of core courses common to all biomedical science programs as well as core courses central to the discipline of Pharmacology. Students also complete 3 ten-week research rotations with Program faculty. The year wraps up with the Program's Preliminary Exam and the subsequent transfer of the student into their chosen thesis lab. A substantial proportion of our students are successful in obtaining external funding from entities such as the NIH, AHA, HHMI, NSF, etc. The average time to completion of a Ph.D. is 5.4 years. Please visit our Program's website to get a better feel for our current cohort of students and to see the progress of our recent alumni.

The University of Colorado Anschutz Medical Campus is the largest academic medical center in the region. Our graduate students are integral members of a community whose collective goal is to push the boundaries of science and healthcare, to improve lives, and to make a difference. At CU Anschutz, we are not training our graduate students to fit a certain academic mold. We are training thought-leaders who are equipped with the skills and knowledge to make an impact in all aspects of science.

Admissions Requirements

To apply for admission applicants must submit the following:

- Online Graduate School application.
- A \$50.00 domestic and \$75.00 international non-refundable application fee [credit card (on-line only), check, or money order]. No application will be processed unless this fee is paid.
- One (1) official transcript of all academic work completed to date. To be considered "official", the transcripts must come from the issuing institution directly to the University of Colorado Denver Graduate Admissions.

Electronic Transcripts should be sent to:
graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

- Four (4) letters of recommendation.
- TOEFL or IELTS scores and financial support verification (international students only).

Degree Requirements

First Year

Year 1		Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science	2
BMSC 7810	Core Topics in Biomedical Science	2
PHCL 7600	Frontiers in Pharmacology	1
PHCL 7605	Responsible Conduct of Research	1
PHCL 7650	Research in Pharmacology ^{Section 001}	1-5
PHCL 7650	Research in Pharmacology ^{Section 002}	1-5
Hours		14-22
Spring		
PHCL 7606	Receptors and Cell Signaling	3
PHCL 7620	Principles of Pharmacology ^{Section 001}	6
PHCL 7650	Research in Pharmacology ^{Section 003}	1-5
Hours		10-14
Summer		
PHCL 8990	Doctoral Thesis ^{Section 001}	1-10
Hours		1-10
Total Hours		25-46

Second Year

Second Year		Hours
Fall		
BMSC 7820	Statistics and Data Analyses for the Biomedical Sciences	3
PHCL 7613	Pharmacology Journal Club ^{Section 001}	1
PHCL 7615	Grant Proposals in Pharmacology ^{Section 001}	1

Elective		
	Hours	5
Spring		
PHCL 7613	Pharmacology Journal Club <small>Section 001</small>	1
PHCL 7615	Grant Proposals in Pharmacology <small>Section 001</small>	1
PHCL 8990	Doctoral Thesis <small>Section 0V1</small>	1-10
Elective		
	Hours	3-12
Summer		
PHCL 8990	Doctoral Thesis <small>Section 0V1</small>	1-10
	Hours	1-10
	Total Hours	9-27

Third Year

Year 3

Fall			Hours
PHCL 7613	Pharmacology Journal Club <small>Section 001</small>		1
PHCL 8990	Doctoral Thesis <small>Section 0V1</small>		1-10
	Hours		2-11

Spring

PHCL 7613	Pharmacology Journal Club <small>Section 001</small>	1
PHCL 8990	Doctoral Thesis <small>Section 0V1</small>	1-10
	Hours	2-11

Summer

PHCL 8990	Doctoral Thesis <small>Section 0V1</small>	1-10
	Hours	1-10
	Total Hours	5-32

Fourth Year & Beyond

Year 4

Fall			Hours
PHCL 8990	Doctoral Thesis <small>Section 0V1</small>		1-10
	Hours		1-10

Spring

PHCL 8990	Doctoral Thesis <small>Section 0V1</small>	1-10
	Hours	1-10

Summer

PHCL 8990	Doctoral Thesis <small>Section 0V1</small>	1-10
	Hours	1-10
	Total Hours	3-30

Learning Objectives

1A. Graduate education in general | Doctoral education is the foundation of future scholarship and the primary “engine” driving the research enterprise. It prepares future faculty and leaders in the academy as well as in many other areas of industry, government, and society in general.

1B. Pharmacology program in specific | The excellence of our Graduate Program in Pharmacology is best illustrated by the fact that our NIH-sponsored pre-doctoral T32 Training Grant has been continuously funded since 1978, making it one of the longest standing pharmacology training programs of this type.

The philosophy of our graduate program is to emphasize state-of-the-art research approaches at all stages; and that begins with the recruitment phase. We identify candidates with excellent undergraduate academic credentials, with a strong preference for those who have participated in independent research. During the first year in the program, students must complete three formal laboratory-based research rotations. Each research rotation is intended to examine testable hypotheses, as well as to provide exposure to new laboratory techniques. At the conclusion of each rotation, a post-rotational seminar is presented to the Department. To enhance research exposure further, the Department offers a special course on Frontiers in Pharmacology to our first-year students.

During the first two years in the program, students are required to take a number of courses to prepare them for research careers in pharmacology. These include a core course in molecular and cellular biology overseen by the Graduate School, and Program core courses in Cell and Molecular Signaling and Principles in Pharmacology. Additional requirements include courses in Ethics, Biostatistics, and Reproducibility & Rigor. During the second year, a number of electives are also available emphasizing topics such as: neuropharmacology/neurobiology and cancer biology, bioinformatics, and structural biology.

The Ph.D. program in pharmacology trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts of the biomedical sciences.
- Understand the historical basis as well as current concepts in the scientific discipline of pharmacology.
- Read and critically evaluate scientific literature relevant to pharmacology, in specific, and the basic and clinical biomedical sciences, in general.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Writing: Present research results in peer-reviewed publications and in their doctoral dissertation.
- Speaking: Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
- Understand the basis of writing and submitting competitive applications for research funding.
- Develop ancillary skills, where necessary, to obtain positions outside of scientific research.
- Be competent in self-evaluation of acquired skills and understand how those skills may be perceived by external peers.
- Develop a mature and meaningful Personal Development Plan (PDP) that will facilitate attainment of career objectives.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable: Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

BMSC 7811 - Responsible Conduct of Research (1 Credit)

This course provides training in the responsible conduct of biomedical research. It is geared towards early PhD graduate students and meets NIH guidelines. Ethical issues associated with specific topics commonly encountered by graduate students are presented and discussed.

Grading Basis: Letter Grade
Typically Offered: Fall.

BMSC 7820 - Statistics and Data Analyses for the Biomedical Sciences (3 Credits)

This is an introductory course designed for students seeking a basic understanding of statistical concepts and applications. Students will develop statistical literacy and will be taught how to perform basic data analyses, including data summarization, graphical skills, and simple statistical methods for estimation and hypothesis testing. Students will learn how to read and evaluate statistical writing and how to write basic statistical methods. The course will include limited statistical computer programming using the R programming language. The course will not focus on mathematical formulas but will rather focus on building students' intuition and familiarity with statistical concepts. We will cover concepts such as random sampling, formulating proper hypotheses, bias, power and sample size, and multiple testing. Statistical methods will include both binary and continuous outcomes, including binomial testing, chi-square tests, t-tests, non-parametric tests and basic linear regression. Course examples will prioritize biologic examples routinely encountered in medical research studies. Prerequisites: Prospective students must be enrolled in a ORE graduate program or have explicit permission from the instructor.

Grading Basis: Letter Grade with IP
Typically Offered: Fall.

PHCL 7600 - Frontiers in Pharmacology (1 Credit)

Course is intended to introduce students to cutting-edge pharmacology research and to the range of research opportunities available within the Pharmacology Training Program. Pharmacology Department faculty presentations will focus on cellular signaling, molecular mechanisms of drug actions, structure-based drug design.

Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

PHCL 7606 - Receptors and Cell Signaling (3 Credits)

This elective course presents an in-depth treatment of the role of receptors and signal transduction systems in the regulation of cell functions through faculty-presented lectures and student-led discussions of current literature. Prereq: IDPT 7811, 7812, 7813, 7814, 7815.

Grading Basis: Letter Grade
Typically Offered: Spring.

PHCL 7613 - Pharmacology Journal Club (1 Credit)

The overall goal of the course is to teach the students to read and discuss current literature in their field and to gain a comprehensive view of the directions that lead to high-impact research. Students will present and discuss papers.

Grading Basis: Satisfactory/Unsatisfactory w/IP
Repeatable. Max Credits: 1.
Typically Offered: Fall, Spring.

PHCL 7615 - Grant Proposals in Pharmacology (1 Credit)

We will learn principles of good grants(wo)manship and hone our skills in homework assignments and discussions. Our goal is to enable a better learning experience during comps proposal writing, by gaining the tools for optimized self-assessment. Prereq: IDPT 7811, IDPT 7812, IDPT 7813, IDPT 7814, IDPT 7815.

Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

PHCL 7620 - Principles of Pharmacology (6 Credits)

Lectures are provided in the general areas of pharmacokinetics, receptor theory, structure-activity relationships, drug metabolism, basic pharmacological mechanisms with a particular emphasis on systems such as the nervous system and cardiovascular system, as well as cancer and microbial chemotherapy. Prereq: IDPT 7811, 7812, 7813, 7814, 7815.

Restriction: Consent of Course Directors.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

PHCL 7650 - Research in Pharmacology (1-5 Credits)

Research work in pharmacology. Prereq: Consent of Instructor.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 99.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

PHCL 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in pharmacology. Prereq: Consent of Instructor.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 10.
A-GRAD Restricted to graduate students only.
Additional Information: Report as Full Time.
Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

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303-724-3565

Rehabilitation Science (PhD)

Overview

The PhD in Rehabilitation Sciences is an interdisciplinary graduate school program housed within CU Physical Therapy.

The Rehabilitation Science PhD program is comprised of core and associated faculty, postdoctoral fellows, students and research assistants with a broad background, including physical therapy, medicine, psychology, engineering, and public health, all working together to improve the lives of people who live with disabilities.

The environment is highly collaborative, with strong mentors and state of the art facilities. While in the PhD Program, students develop a wide range of skills, including research and teaching; presenting nationally, and learning to write grants and publish manuscripts.

Admission Requirements

Applicants must submit the following:

- Online CU Denver|Anschutz Graduate School application (included in the application is the Research Statement, Professional Background, and Future Goals Statement, and Colorado residency form)
- One (1) official transcript of all academic work completed to date. To be consider "official," the transcript must come from the issuing institution directly to the Rehabilitation Sciences PhD program at:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

For electronic transcripts (preferred):
graduate.school@cuanschutz.edu

- A non-refundable application fee, \$50 for domestic applicants, \$75 for international applicants [credit card (online only), check, or money order]. No application will be processed unless this fee is paid
- Three (3) letters of recommendation
- GRE Scores (optional), use GRE code 4875.
- A list of one-to-three faculty members with whom the student is interested in working. Applicants are strongly encouraged to contact potential mentors prior to submitting their application.

International students must meet ALL of the requirements above and those required by International Admissions.

Degree Requirements

In addition to the coursework below, students must also take:

- 5-8 credits of Specialization Electives
- at least 1 credit of Statistics/Data Management Elective

First Year

Year 1

Fall	Hours
RHSC 7000 Foundations in Rehabilitation Science ^(May also be taken in Fall, Year 2)	2

RHSC 7001	Rehabilitation Science Seminar	1
RHSC 7910	Research Practicum in Rehabilitation Science I	3
BIOS 6601 or BIOS 6611	Applied Biostatistics I or Biostatistical Methods I	3
RHSC 7002	Professional Skills in Academia ^(May also be taken in Fall, Year 2)	2
PHCL 7605 or CLSC 7150	Responsible Conduct of Research ^(May also be taken in Spring, Year 1) or Ethics and Responsible Conduct of Research	1
RHSC 8990	Doctoral Thesis	1-10
Hours		13-22

Spring

RHSC 7911	Research Practicum in Rehabilitation Science II	3
BIOS 6602 or BIOS 6612	Applied Biostatistics II or Biostatistical Methods II	3
PHCL 7605 or CLSC 7150	Responsible Conduct of Research ^(May also be taken in Fall, Year 1) or Ethics and Responsible Conduct of Research	1
RHSC 8990	Doctoral Thesis	1-10
Hours		8-17

Summer

RHSC 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		22-49

Second Year

Year 2

Fall		Hours
RHSC 7000	Foundations in Rehabilitation Science	2
RHSC 7001	Rehabilitation Science Seminar	1
RHSC 7002	Professional Skills in Academia	2
Specialization Electives		
RHSC 8990	Doctoral Thesis	1-10
Hours		6-15

Spring

Statistics/Data Management Elective

Select 1 course from the following:		
CLSC 7101	Grant Writing I	
IDPT 7200	Scientific Writing for Doctoral Students	
NRSC 7661	Grant Proposal Writing Workshop	
RHSC 8990	Doctoral Thesis	1-10
Hours		1-10

Summer

RHSC 8990	Doctoral Thesis	1-10
Hours		1-10
Total Hours		8-35

Third Year & Beyond

Code	Title	Hours
Year 3 Fall, Spring, Summer, & Beyond:		
RHSC 8990	Doctoral Thesis	1-10

Learning Objectives

The goal of the Rehabilitation Science (RHSC) Program at the University of Colorado is to prepare future generations of researchers to advance the science and practice of physical rehabilitation. Upon completion of the Rehabilitation Science PhD Program, students will be able to:

1. Critically analyze and integrate research findings from specialized disciplines to address complex problems of physical disablement
2. Design and implement rigorous, innovative, and ethical research that will advance theoretical and/or applied principles of clinical practice in rehabilitation
3. Disseminate findings of original research using standard scientific oral and written formats
4. Compete for funding from national agencies to support interdisciplinary research and educational initiatives in rehabilitation
5. Teach graduate level courses in a selected area of specialization within the field of rehabilitation
6. Effectively communicate with clinicians, research scientists, and students in the field of rehabilitation and its affiliated disciplines using the common language of disablement
7. Serve in leadership roles for professional activities that will advance the science and practice of rehabilitation medicine.

Courses

BIOS 6601 - Applied Biostatistics I (3 Credits)

Applied biostatistical methods including descriptive and statistical inference; odds ratio and relative risk, probability theory, parameter estimation, tests for comparing statistics of two or more groups, correlation and linear regression and overviews of: multiple and logistic regression and survival analysis.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

BIOS 6602 - Applied Biostatistics II (3 Credits)

A continuation of BIOS 6601 extending the basic principles of descriptive and inferential statistics to modeling more complex relationships using linear regression, logistic regression, and Cox regression. The statistical package SAS is used extensively. Multiple optional lab sessions offered. Prerequisite: BIOS 6601

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6611 - Biostatistical Methods I (3 Credits)

This first course in applied statistics covers basic descriptive methods and probability; parametric and nonparametric inference for the one- and two-sample location problem; ANOVA, ANCOVA, and multiple linear regression. Matrix notation, R, and SAS are used. Prerequisite: differential calculus or permission of instructor

Grading Basis: Letter Grade

A-PUBH BIOS

Typically Offered: Fall.

BIOS 6612 - Biostatistical Methods II (3 Credits)

This is a continuation of BIOS 6611 covering univariate linear modeling and emphasizing multiple regression and analysis of variance. Logistic regression and methods for correlated data are also covered. Matrix algebra and the statistical package SAS will be used. Prereq: BIOS 6611.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CLSC 7150 - Ethics and Responsible Conduct of Research (1 Credit)

Course provides overview of the field of ethics in clinical research. Topics include historical background, current regulations, IRB requirements on human subjects protection issues. Students will learn how to develop approaches to conduct ethical human subjects research in an optimal manner.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IDPT 7200 - Scientific Writing for Doctoral Students (2 Credits)

Scientific writing course for students engaged in research. Focuses on critical thinking, analytical writing, and oral presentation. Taught as a writing workshop, the course emphasizes effective communication with both professional and non-technical audiences. Restrictions: Must have passed preliminary examination; permission of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

NRSC 7661 - Grant Proposal Writing Workshop (1 Credit)

Course is practical workshop in grant-writing culminating in a mock review panel including course participants. Students will examine various proposal types/formats, then write their own proposal in the format of NRSA fellowship application. Restriction: Students with adequate neuroscience background. Prereq: NRSC 7610.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHCL 7605 - Responsible Conduct of Research (1 Credit)

The Department of Pharmacology in the University of Colorado School of Medicine organizes and offers an interactive course during the fall semester entitled "Responsible Conduct of Research". The course is designed to inform students, trainees and faculty to the NIH requirements for ethical and responsible research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7000 - Foundations in Rehabilitation Science (2 Credits)

This course provides an overview of the field of Rehabilitation Science and an introduction to disablement frameworks with an emphasis on biopsychosocial models of the enabling-disabling process across the life span. Restrictions: Instructor permission required for students not enrolled in the RHSC Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7001 - Rehabilitation Science Seminar (1 Credit)

Students will attend contemporary research seminars presented by established scientists, and will participate in group discussions to assess the implications of seminar topics on the full spectrum of disablement constructs in Rehabilitation Science ranging from pathophysiology to community participation. Prerequisites: RHSC 7000 Foundations in Rehabilitation Science or Instructor Permission. Restrictions: Instructor permission required for students not enrolled in RHSC Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7002 - Professional Skills in Academia (2 Credits)

This course provides an overview of instructional methods and professional skills for academic educators and scientists. Topics include instructional methods for graduate education, and development of professional skills in communication, management, networking, and promotion for academic careers in Rehabilitation Science. Restrictions: Instructor permission required for students not enrolled in RHSC Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

RHSC 7910 - Research Practicum in Rehabilitation Science I (3 Credits)

This research practicum exposes students to a variety of experimental tools and techniques available to Rehabilitation scientists. Mentored practicum experiences are selected by each student with permission from faculty mentor(s). Prerequisites: Instructor permission. Restrictions: Instructor permission required for students non enrolled in RHSC Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Rehabilitation Science. Prerequisites: Instructor permission. Restrictions: Enrollment in RHSC Program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

consultation with the Program Director and subsequent discussions with the Program faculty member.

For additional policies, please refer to the Graduate School Policies page (p. 186).

Contact Us

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Professor

Program Director

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Carley Surina

Program Administrator

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RHSC@cuanschutz.edu

Policies

Research Practicum: Before selecting a thesis advisor, students will complete a research practicum rotation with members of the RHSC Training Faculty in their first two semesters of enrollment. In special instances a third practicum may be completed during the summer of the first year, with permission of the GTC. Rotations can only be completed with RHSC affiliated faculty, except with special permission from the GTC. Students may choose to complete their two rotations with the same or different faculty mentors. Rotations are arranged by the student through

Structural Biology, Biochemistry & Biophysics (PhD)

Overview

The Structural Biology, Biochemistry and Biophysics (STBB) PhD Program is an interdepartmental graduate training program offered within the School of Medicine at the University of Colorado Anschutz Medical Campus in Aurora, Colorado. Student training places a major emphasis on research experiences, both in lab rotations and thesis projects, and includes a range of coursework in biochemistry, biophysics, drug design, pharmacology, and cellular, molecular, and structural biology.

The STBB Program encourages students to engage in collaborative projects and provides shared mentoring that can include faculty from outside The Program. Such interactions are geared towards fostering interdisciplinary training.

Faculty research activities cover a range of structural and computational techniques including NMR Spectroscopy, X-Ray Crystallography, Cryo-EM, Mass Spectrometry and Proteomics, Biophysics, and Peptide/Protein Chemistry that are focused on a diversity of biological targets such as signaling molecules, transmembrane proteins, RNA, genome bioinformatics, lipids, and oligosaccharides.

Admissions Requirements

Admission Philosophy

Students are considered and selected on the basis of past academic performance, previous research experience, recommendations, and individual interviews. While previous experience in structural biology and biochemistry coursework and research is helpful, the STBB program welcomes applicants with varied backgrounds. Students most likely to succeed have traditionally been those with intellectual achievement and creativity, first-hand understanding of laboratory research, and a strong personal desire and motivation to progress in their scientific training.

Entrance Requirements

Students are selected on the basis of past academic performance and, where possible, individual interviews. We select students who show intellectual vigor, independence, and strong motivation to become creative and successful scientists. The faculty recognizes that students who are attracted to a career in Structural Biology and Biochemistry come from highly varied backgrounds. Although there are no specific undergraduate course requirements, students with a good undergraduate foundation in math and the biological and chemical sciences have performed best in the Program. It is suggested that applicants have completed courses in biology, chemistry, biochemistry, and cell and molecular biology before entering the Program.

The Structural Biology and Biochemistry Program requires that applicants achieve a minimum cumulative undergraduate GPA of 3.0, and recommends that applicants complete the Graduate Record Examination (GRE). Foreign applicants must demonstrate proficiency in English.

How to Apply

DEADLINE FOR APPLICATIONS IS DECEMBER 1st.

PRIORITY DEADLINE FOR INTERNATIONAL APPLICANTS IS NOVEMBER 1.

To apply for admission applicants must submit the following:

- Online Graduate School application (<https://graduateschool.ucdenver.edu/admissions/>).
- A \$50.00 domestic and \$75.00 international non-refundable application fee [credit card (on-line only), check, or money order]. No application will be processed unless this fee is paid.
- Three (3) letters of recommendation. The most informative letters will come from Professors who have mentored you in your research experiences. Professors who have taught science classes you have been enrolled in, or whom you have worked with in an advisory capacity, are also good choices. We do not recommend that you ask postdocs, technicians or fellow students for letters. Likewise, members of the community are generally not good choices, as typically their understanding of biomedical PhD training, and hence their ability to evaluate your potential, is limited.
- GRE test scores are optional but recommended. Use GRE code 4875.
- TOEFL or IELTS scores and financial support verification (international students only).
- One (1) official transcript of all academic work completed to date. To be considered "official", the transcripts must come from the issuing institution directly to the University of Colorado Denver Graduate Admissions.

Electronic Transcripts should be sent to:

graduate.school@cuanschutz.edu

If sending a physical transcript, please mail to:

University of Colorado Denver
Graduate School
Mail Stop C296
Fitzsimons Building, C5000
13001 E. 17th Place
Aurora, CO 80045

Degree Requirements

First Year

Code	Title	Hours
Fall		
BMSC 7806	Core I: Foundations in Biomedical Sciences	6
BMSC 7810	Core Topics in Biomedical Science ^A Discovering Protein Structure & Function	2
BMSC 7810	Core Topics in Biomedical Science ^{Student Choice}	2
STBB 7650	Research in Structural Biology & Biochemistry ⁰⁰¹	1-10
STBB 7650	Research in Structural Biology & Biochemistry ⁰⁰²	1-10
STBB 7660	Structure Seminar	1
Code Title Hours		
Spring		
STBB 7609	Biophysics & Spectroscopy	1.5
STBB 7610	Biophysics and Spectroscopy Lab	1
STBB 7650	Research in Structural Biology & Biochemistry ^{0V3}	1-10
STBB 7660	Structure Seminar	1
<i>Electives as Desired</i>		

Code	Title	Hours
SUMMER		
STBB 8990	Doctoral Thesis	1

Second Year

Code	Title	Hours
Fall		
STBB 7650	Research in Structural Biology & Biochemistry ^{OV3}	1-10
STBB 7660	Structure Seminar	1
BMSC 7811	Responsible Conduct of Research	1

Take 1 course from:

STBB 7631	Molecular Structure A	1.5
STBB 7632	Molecular Structure B	1.5
STBB 7633	Molecular Structure C	1.5

Electives as Desired

Code	Title	Hours
Spring		
STBB 7650	Research in Structural Biology & Biochemistry ^{OV3}	1-10
Electives as Desired		

Code	Title	Hours
SUMMER		
STBB 8990	Doctoral Thesis	1

Third Year & Beyond

Code	Title	Hours
Take 30 credits through duration of program:		
Enroll in 5 credits (Fall/Spring); 1 credit (Summer)		
STBB 8990	Doctoral Thesis	1-10

Learning Objectives

Goals of the Program

The goals of the Structural Biology, Biochemistry and Biophysics Program are to:

- Foster scientific excellence and innovation in the field of bimolecular structure and function.
- Develop and advance expertise and technology to support cutting-edge research in biomedical sciences
- Provide training and career development for outstanding scientists
- Identify and characterize molecular targets and develop innovative therapeutics and diagnostic tools
- Exploit discoveries and intellectual properties through strategic partnerships with the industry.

Learning Outcomes

The PhD program in Structural Biology, Biochemistry and Biophysics trains graduate students to become proficient and successful investigators who are able to:

- Demonstrate a basic knowledge of central concepts in the biomedical sciences.
- Understand the current concepts in structural biology and biochemistry.
- Read and critically evaluate the scientific literature.
- Formulate hypotheses based on current concepts in the field and design, conduct, and interpret their own research projects.
- Present research results in peer-reviewed publications and in a dissertation.

- Communicate research results effectively through oral presentations at scientific seminars, conferences, and other venues.
- Write a competitive application for research funding.
- Develop ancillary skills, where necessary, to obtain positions outside of scientific research.

With this knowledge, they will understand molecular structures and mechanisms. Training is provided in the following exciting areas:

- Biomolecular Interactions.
- Protein and RNA structure, function, and dynamics.
- Computational studies of structure and function relationships of biomolecules.
- Structure-based design of new molecules important in biology, biochemistry, and pharmacology.
- Proteomics and metabolics.

The courses and research emphasize both breadth and flexibility while encouraging interdisciplinary training. Students may choose research projects from a variety of laboratories at the University of Colorado and the National Jewish Medical and Research Center. Training will result in a PhD degree awarded by the Program in Structural Biology and Biochemistry.

Courses

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)
Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806
Grading Basis: Letter Grade
Repeatable. Max Credits: 6.
Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)
Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.
Grading Basis: Letter Grade
Repeatable. Max Credits: 20.
AMC-PHD PhD Students only
Typically Offered: Fall.

STBB 7609 - Biophysics & Spectroscopy (1.5 Credits)
This course aims to provide the students with a deep understanding of the application of different biophysical techniques to study interactions of biomolecules with each other or with small molecules. The course will supply the students with the needed tools to be able to design their own biophysical experiments to tackle a particular question.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

STBB 7610 - Biophysics and Spectroscopy Lab (1 Credit)

This course aims to provide the students hands-on training in the use of a variety of biophysical techniques for the quantification of biomolecular interactions. Must be taken with STBB 7609. Corequisite: STBB 7609

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7631 - Molecular Structure A (1.5 Credits)

Gain an in-depth understanding of the underlying principles of an NMR experiment, so that student can turn NMR theory into NMR practice for their research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7632 - Molecular Structure B (1.5 Credits)

Understand the theory and practice of structural determination using x-ray crystallography.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7633 - Molecular Structure C (1.5 Credits)

The purpose of this course is to provide students with a concise understanding of biological mass spectrometry and its application to study and characterize various classes of biomolecules in state of the art research. Course is 7.5 weeks.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7634 - Molecular Structure D (1.5 Credits)

The course will provide an introduction to conceptual and practical aspects of macromolecular cryo-electron microscopy (cryo-EM). A combination of lectures and hands-on experiences will give students a working understanding of cryo-EM and its application for structural analysis of biological macromolecules.

Grading Basis: Letter Grade

Typically Offered: Fall.

STBB 7650 - Research in Structural Biology & Biochemistry (1-10 Credits)

Research work in Structural Biology and Biochemistry. 2 laboratory hours per week per credit.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

STBB 7660 - Structure Seminar (1 Credit)

Seminar series provides a forum for the presentation of scientific experiments and information in structural biology by faculty, postdoctoral fellows and graduate students.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

STBB 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Structural Biology and Biochemistry.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

STBB 7670 - Independent Study in Structural Biology and Biochem (1-3 Credits)

This course is listed for the benefit of the advanced student who desires to pursue one or more topics in Structural Biology and Biochemistry in considerable depth. Supervision by a full-time faculty member is necessary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

Policies

Please refer to the Graduate School Policies page (p. 186).

Contact Us

Catherine Musselman, PhD

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Program Director

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Katherine Doyle

Program Administrator

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University of Colorado Anschutz Medical Campus

12800 E. 19th Avenue

Mailstop 8300

Aurora, CO 80045

Physical Therapy (DPT)

Associate Dean's Welcome

Welcome to the website of the University of Colorado Physical Therapy Program! As one of the top programs in the country, we are proud of our commitment to physical therapy education, research, and service since our initial accreditation in 1947.

Our curriculum introduces students to a clinical education experience within their first semester and provides the option of a unique year-long, paid internship. In addition, our Hybrid DPT Pathway is among the first programs of its kind to provide students with integrated clinical education (ICE) experiences. Students are very involved in service opportunities, volunteering at the Stout Street Clinic for individuals that experience homelessness, DAWN Clinic for the high-needs Aurora community, and other non-profit organizations in the Denver metropolitan area.

We are deeply committed to our research endeavors, offering a PhD in Rehabilitation Sciences (<https://www.ucdenver.edu/academics/colleges/Graduate-School/academic-programs/rehabilitation-science/Pages/Overview.aspx>), leading the way with groundbreaking grants and clinical studies, and providing a number of opportunities for students to get involved with faculty research. Our CU Rehabilitation Science Consortium houses multiple laboratories, providing a space for research assistants, post-doctoral fellows and PhD students participating in faculty research.

Our partnerships on the Anschutz Medical Campus and surrounding greater Denver area enhance our research capabilities and strengthen our clinical partnerships. We have over 120 clinical partners throughout the region, with The Rocky Mountain Regional VA Medical Center, Children's Hospital and UCHHealth located steps away. Moreover, we now offer a unique DPT-MPH dual degree track in partnership with the Colorado School of Public Health.

I welcome prospective students and program alumni interested in physical therapy education to reach out to our program staff and faculty. Your active involvement is essential to the success of the University of Colorado Physical Therapy Program. We look forward to our continued growth and progress within the University and the profession!

Michael Harris-Love, PT, MPT, DSc, FGSA, FAPTA

Associate Dean for Physical Therapy Education, School of Medicine

Why Choose CU PT?

The University of Colorado has established a tradition of excellence in the educational preparation of physical therapists for over 75 years. Our strong ranking is linked to our superb faculty, commitment to the education of our students, our state-of-the-art facilities at the Anschutz Medical Campus and UCCS Hybl Center, and a strong network of supportive alumni and clinical faculty throughout the Rocky Mountain Region and the country. The Physical Therapy Program is housed within the Department of Physical Medicine & Rehabilitation, within the School of Medicine. Education for the Doctor of Physical Therapy degree (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/>) is provided via a residential pathway in Aurora and a hybrid pathway in Colorado Springs.

Mission

The University of Colorado Physical Therapy Program leads discovery and innovation to improve movement, participation, health, and wellness for individuals and society through excellence in education, research, clinical care, and service.

Vision

We transform health and foster wellness in individuals and society through education, discoveries, engagement and innovation.

Values

- Respect: For all individuals' safety, rights, dignity, and perspectives
- Integrity: Because professional behavior reflects who we are
- Altruism: In service to the individual, community, and organization
- Diversity: For inclusivity in all endeavors
- Accountability: To all those seeking care and providing care within our profession and health care systems
- Passion: Because we are committed to lifelong learning, service, and community engagement
- Collaboration: To leverage collective input from all individuals
- Leadership: Within the university, profession and community at large
- Quality: To attain excellence in all we do

GENERAL INQUIRIES

Phone: (303) 724-CUPT (2878)

Fax: (303) 724-9016

PHYSICAL ADDRESSES

CU Physical Therapy Program

CU Anschutz, Residential Pathway

Education 2 South

3rd Floor, Room 3106

Mail Stop C244

13121 E. 17th Avenue

Aurora, CO 80045

Directions & detailed map (<http://myatlascoms.com/map/?id=95#!ct/989>)

CU Physical Therapy Program

University of Colorado - Colorado Springs

Hybl Sports Medicine and Performance Center

4925 N Nevada Ave

Colorado Springs, CO 80918

The University of Colorado Physical Therapy Program responds to the needs of the students and the community. We welcome your comments, suggestions, ideas and constructive criticism.

Careers

Find job openings with the Physical Therapy Program via CU Careers (<https://cu.taleo.net/careersection/2/moresearch.ftl>).

Accreditation

The Physical Therapy Program at University of Colorado is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Ave., Suite 100, Alexandria, Virginia 22305-3085; 703-706-3245; accreditation@apta.org; <http://www.capteonline.org> (<http://www.capteonline.org/>). If needing to

contact the program/institution directly, please call 303-724-2878 or e-mail vonelle.pomeroy@cuanschutz.edu

On November 3, 2020, the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association (APTA) reaffirmed the accreditation status based upon compliance with all of the evaluative criteria. The accreditation status remains in effect for the full 10-year period, until 2031, at which time the accreditation status will undergo a self-study report and on-site review.

The University of Colorado Physical Therapy Program is a member of the American Council of Academic Physical Therapy (ACAPT) which supports academic institutions to strive for excellence in physical therapist education. We encourage faculty, clinical educators, academic administrators and students interested in pursuing teaching to check out acapt.org (<http://acapt.org/>).

Admissions

Please visit the Application Information (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/apply/>) section of our website to review everything you need to know about applying for our DPT program (both Residential and Hybrid Pathways), including eligibility, prerequisites, application process and matriculation requirements.

For more information about our Doctor of Physical Therapy Program, please contact CU Physical Therapy Admissions by phone at (303) 724-9144 or email at PT.Admissions@cuanschutz.edu (<http://catalog.ucdenver.edu/cu-anschutz/schools-colleges-programs/school-medicine/physical-therapy-program/PT.Admissions@cuanschutz.edu>).

For information on campus visit days, information sessions, virtual tours and more, please visit our Contact Admissions (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/admissions-overview/>) website.

**The Program follows University policies (<https://www.cu.edu/regents/policy/10/>) to facilitate equal opportunity and nondiscrimination for faculty, staff and prospective/enrolled students, by following policies of the Office of Equity and the Regent's laws and Policies, Article 10, nondiscrimination. University Strategic Priority (<https://www.ucdenver.edu/about/departments/ODI/Documents/CU%20Denver%20Anschutz%20Diversity%20Strategic%20Priority.pdf>)*

The University of Colorado Anschutz Medical Campus Physical Therapy Program is committed to providing equitable access to learning opportunities for all students, including those with disabilities (e.g., mental health, attentional, learning, chronic health, sensory, or physical) who meet the technical standards of the program, with or without reasonable accommodations.

If you are an applicant with a disability who would like to engage in a confidential consultation about disability access at CU Anschutz, or who requires accommodations to complete the application or interview process, please contact The Office of Disability, Access, & Inclusion (<https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion/>).

Programs

The University of Colorado Physical Therapy Program offers seven educational opportunities in clinical care and rehabilitation science.

Doctor of Physical Therapy (DPT) - Residential (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/traditional-pathway/>) and Hybrid (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/hybrid-pathway/>) Pathways

The University of Colorado Physical Therapy Program is a 2.5-year program offered as both a residential (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/traditional-pathway/>) and hybrid pathway (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/hybrid-pathway/>). The academic program starts in the summer and continues for 8 consecutive semesters. Full-time and part-time clinical education experiences are interspersed throughout the first two years and begin as early as the second semester. Upon completion of the Program, students are awarded the Doctor of Physical Therapy (DPT) degree and are eligible to take the National Physical Therapy Exam (NPTE). **Learn more** (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/>).

For further information about our DPT pathways, please visit our Frequently Asked Questions (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/doctor-of-physical-therapy/about-our-program/faq/>) page.

Residency in Pediatric Physical Therapy

The University of Colorado Physical Therapy Pediatric Residency Program consists of planned post-professional clinical and didactic education for licensed physical therapists who have graduated from an accredited DPT program. In addition to clinical opportunities with structured mentorship, the program also includes participation in the Leadership and Education in Neurodevelopmental Disabilities (LEND) program through JFK Partners, and access to the resources of the University of Colorado Physical Therapy Program on the Anschutz Medical Campus. **Learn more** (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/pediatric-residency/>).

PhD in Rehabilitation Science

An interdisciplinary program educating future scientists. University of Colorado's PhD in Rehabilitation Science is within the Graduate School (p. 252).

Doctor of Physical Therapy-Rehabilitation Science PhD Pathway

The University of Colorado Anschutz Medical Campus DPT-PhD pathway facilitates a viable educational plan for promising students with a strong interest in academic physical therapy and rehabilitation science. This collaborative dual degree pathway between the CU Physical Therapy Program and the Rehabilitation Science PhD Program provides an efficient approach to earning both the clinical doctorate and the research doctorate. **Learn more.** (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/dpt-phd-pathway/>)

Orthopaedic Residency

The University of Colorado School of Medicine Physical Therapy Orthopaedic Residency in partnership with UHealth is a structured, accredited, post-professional education program for licensed physical therapists who have graduated from an accredited DPT program. The orthopaedic residency will offer experiences in outpatient patient management through the UHealth system and didactic as well as

teaching experiences through the resources of the University of Colorado Physical Therapy Program on the prestigious Anschutz Medical Campus. There is no tuition and residents earn a salary with a comprehensive benefits package. Residency graduates will be qualified to sit for the ABPTS orthopaedic clinical specialist exam. Learn more (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/orthopedic-residency/>)

Faculty Residency

The University of Colorado Anschutz Medical Campus Faculty Residency is a structured, accredited, post-professional education program for licensed physical therapists who have graduated from an accredited DPT program who aspire to an academic faculty position. The program is designed to significantly advance preparation of the physical therapist as a highly qualified educator and productive academic scholar. Potential as a future leader in physical therapist education develops through multiple teaching experiences, structured mentorship opportunities, and mentored educational scholarship throughout the program. The program also offers access to the resources of the University of Colorado Physical Therapy Program on the Anschutz Medical Campus. Learn more (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/faculty-residency/>)

Doctor of Physical Therapy- Master's of Public Health Dual Degree Track

The University of Colorado Anschutz Medical Campus DPT-MPH track is a collaborative dual degree track between two well-established and successful degree programs: the Doctor of Physical Therapy (DPT) program and the Master of Public Health (MPH) program. Learn more. (<https://medschool.cuanschutz.edu/physical-therapy-program/education-programs/dpt-mph-track/>)

PT Degree Requirements

The DPT degree requires completion of 116 credit hours, which includes 38 weeks of clinical education. Students complete and present a capstone project in year 3 before the final clinical internship

The University of Colorado Physical Therapy Program has established a tradition of excellence for over 70 years. Our 2.5 year graduate professional Doctor of Physical Therapy (DPT) degree boasts superb faculty, a location on the state-of-the-art Anschutz Medical Campus, commitment to the education of a diverse body of students and a strong network of supportive alumni and clinical faculty.

The PT Program educates competent, ethical physical therapists to assume the multi-faceted roles of clinical practitioner, patient manager, teacher, researcher, administrator, consultant and advocate. In addition to compassion, character and professionalism, certain essential skills are required in order to complete the PT Program. Upon successful completion of the PT Program, graduates are eligible to take the National Physical Therapy Exam (NPTE) in any state.

DPT Curriculum

Year 1 Curriculum

Year 1			
Summer			Hours
DPTR 5001	Clinical Anatomy I		5
DPTR 5171	Health Promotion and Wellness I		1
DPTR 5201	Examination & Evaluation I		2
DPTR 5211	Foundations of Intervention I		2

DPTR 5711	Professional Development I	2
Hours		12
Total Hours		12

Year 1

Fall		Hours
DPTR 5011	Neuroscience	3
DPTR 5101	Movement Science I	3
DPTR 5141	Human Growth & Development	2
DPTR 5151	Motor Control & Motor Learning	2
DPTR 5202	Examination and Evaluation II	2
DPTR 5212	Foundations of Intervention II	2
DPTR 5621	Evidence Based Practice	3
DPTR 5901	Integrated Clin Experience I	1
Hours		18

Spring

DPTR 5111	Exercise Science	2
DPTR 5161	Psychosocial Aspects of Care I	1
DPTR 5301	Medical Conditions I	4
DPTR 5401	Musculoskeletal Conditions I	4
DPTR 5501	Neuromuscular Conditions I	3
DPTR 5631	Clinical Reasoning I	1
DPTR 5731	Healthcare Delivery I	1
IPCP 5000	Interprofessional Collaborative Practice	1
Hours		17
Total Hours		35

Year 2 Curriculum

Year 2

Summer		Hours
DPTR 6002	Clinical Anatomy II	3
DPTR 6402	Musculoskeletal Conditions II	2
DPTR 6502	Neuromuscular Conditions II	2
DPTR 6931	Clinical Education I	5
Hours		12
Total Hours		12

Year 2

Fall		Hours
DPTR 5162	Psychosocial Aspects Care II	2
DPTR 6102	Movement Science II	2
DPTR 6302	Medical Conditions II	2
DPTR 6403	Musculoskeletal Conditions III	2
DPTR 6404	Musculoskeletal Conditions IV	2
DPTR 6503	Neuromuscular Conditions III	4
DPTR 6632	Clinical Reasoning II	1
DPTR 6712	Professional Development II	2
IPHE 6000	IPE Healthcare Ethics & Health Equity	0
DPTR 6902	Integrated Clinical Experience II	1
Hours		18
Spring		
DPTR 6303	Medical Conditions III	3
DPTR 6633	Clinical Reasoning III	2

DPTR 6713	Professional Development III	1
DPTR 6732	Healthcare Delivery II	3
DPTR 6932	Clinical Education II	6
DPTR 7112	Applied Exercise Science	3
Hours		18
Total Hours		36

Year 3 Curriculum

Year 3

Summer

		Hours
DPTR 7171	Health Promotion and Wellness II	3
DPTR 7212	Elective	1
DPTR 7213	National Physical Therapy Examination Preparation	1
DPTR 7641	Integrated Practice	2
DPTR 7651	Clinical Reasoning Capstone	4
Hours		11
Total Hours		11

Year 3

Fall

		Hours
DPTR 7933	Clinical Education III	10
Hours		10
Total Hours		10

The following are expected minimum outcomes for our students:

- 90% of our graduates will pass the NPTE on their first attempt to become licensed physical therapists.
- 85% of our graduates will feel competent to practice autonomously as Doctors of Physical Therapy within their first year post-graduation.
- All of our graduates will use critical thinking, evidence, and clinical reasoning in physical therapy patient management.
- All of our graduates will be prepared to provide physical therapy care to meet the needs of patients across the lifespan.

For more information about our Doctor of Physical Therapy Program, please contact CU Physical Therapy Admissions by phone at (303) 724-9144 or email at PT.Admissions@cuanschutz.edu

Courses

DPTR 5001 - Clinical Anatomy I (5 Credits)

This course follows a regional approach to gross anatomy of the musculoskeletal, circulatory and nervous systems of the upper and lower extremities, thorax and head and neck. Supplemented by cross sectional anatomy, radiographic and digital imaging.

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 5011 - Neuroscience (3 Credits)

This course provides a framework for understanding the structural and functional organization of the human nervous system. Principles and applications of neurophysiology, neuroanatomy and functional correlates are included. Finally, diseases and dysfunctions of the nervous system that are relevant to current practice are introduced.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5101 - Movement Science I (3 Credits)

This course investigates movement science with emphasis on foundational biomechanical principles related to human posture and movement. Qualitative and quantitative movement analysis is presented with emphasis on clinical application.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5111 - Exercise Science (2 Credits)

This course will provide students with the current state of knowledge in the physiology of exercise. A systems approach will be used to provide a thorough understanding of the acute and chronic adaptations to exercise training, with an emphasis on the mechanisms underlying these adaptations.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5141 - Human Growth & Development (2 Credits)

This course addresses functional movement across the life span in healthy individuals. Emphasis is on stages in life when the greatest changes in motor behavior occur and the factors that influence those changes. Developmental changes in all systems and their contributions to functional movement will be explored.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5151 - Motor Control & Motor Learning (2 Credits)

This course presents the foundation of motor learning and control as it applies to optimal movement across the lifespan. Emphasis is on variables related to the individual task composition, the environment and augmented information that enhance practice of motor skills. These principles are applied to physical therapist practice.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 5161 - Psychosocial Aspects of Care I (1 Credit)

This course is focused from the perspective of the practitioner as a person. General psycho-emotional issues and specific theories related to: practitioner self-awareness, emotions, spirituality, grief-loss-mourning, psych factors associated with the experience of pain will be presented. Introduction to motivational interviewing is included

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5162 - Psychosocial Aspects Care II (2 Credits)

Builds on knowledge, skills and attitudes gained in DPTR 5161 with additional focus on general issues and theories related to: changing behaviors, depression and anxiety, sexuality in rehabilitation, suicidal behavior, addiction in society, stress management and conflict resolution.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

DPTR 5171 - Health Promotion and Wellness I (1 Credit)

Disease prevention and health promotion are recognized as integral aspects of physical therapist practice. In this first of two courses, students will use current models of behavior change, disability, and population health to understand the multiple determinants of health and wellness. Using oneself as the client, students will complete an individual health assessment, identify areas of growth, and generate a plan to promote their own health and wellness.

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 5201 - Examination & Evaluation I (2 Credits)

This course introduces the physical therapist's examination of the patient. This course will familiarize the student with the ICF framework and emphasize foundational examination skills including communication, manual muscle testing, goniometry, and surface palpation.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 5202 - Examination and Evaluation II (2 Credits)

This course emphasizes developing a process of hypothesis generation to direct clinical decision making during the examination part of the patient encounter. Skill development includes examination techniques of the integumentary, cardiovascular/pulmonary, neuromuscular, and musculoskeletal systems, including analysis of human movement.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 5211 - Foundations of Intervention I (2 Credits)

This course introduces basic intervention principles, including fundamentals of tissue healing and adaptation. Intervention techniques including posture and positioning, basic mobility with and without assistive devices, and thermal physical agents for improving functional mobility and for managing a variety of clinical populations are introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 5212 - Foundations of Intervention II (2 Credits)

Further introduction and advancement of foundational intervention principles and techniques including soft tissue mobilization, physical agents and electrotherapeutic modalities. Emphasis is on the application of exercise as an intervention for improving functional mobility and for managing a variety of clinical problems.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 5301 - Medical Conditions I (4 Credits)

This course highlights the physical therapy management of patients with cardiovascular, pulmonary and metabolic disorders across the lifespan and healthcare settings. Physiology, medical management, diagnostic testing, clinical decision making and medical screening are covered with implications for physical therapist's practice.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5401 - Musculoskeletal Conditions I (4 Credits)

This course covers the examination, clinical reasoning, and physical therapy management of musculoskeletal disorders across the lifespan, focusing on conditions affecting the lower quarter, including the lumbopelvic region, hip, knee, foot, and ankle. Medical management principles such as radiology and pharmacology are also covered, with implications for physical therapy management.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 5501 - Neuromuscular Conditions I (3 Credits)

Clinical decision-making frameworks are discussed for management of people with neurologic conditions with an emphasis on stroke and cerebral palsy. Clinical skills are taught for examination, evaluation and intervention across the lifespan and across settings. Evidence based practice and manual guidance are emphasized for intervention.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 5621 - Evidence Based Practice (3 Credits)

This course covers and applies concepts and steps of evidence-based practice to a variety of clinical settings, including: searching; selection; and appraisal of the literature. Emphasis is on searching the literature to answer clinical questions regarding physical therapy tests and measures, interventions, and patient prognosis.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5631 - Clinical Reasoning I (1 Credit)

This introductory course teaches students to integrate current evidence with critical reasoning in the ICF framework to facilitate patient-centered decision making in the examination, prognosis, and intervention for elementary patient cases across a variety of clinical practice settings.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5711 - Professional Development I (2 Credits)

This course is the first in a series of courses on professional development. Students will explore self and begin the journey of becoming a physical therapist. This course emphasizes reflecting on personal and professional values, examining professional communication behaviors, and developing foundational writing skills.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 5731 - Healthcare Delivery I (1 Credit)

This course provides a basic overview of the American health system and all payer types. Impact of regulation on therapists and support personnel supervision will be discussed with a focus on the Colorado State Practice Act, state and federal laws. Key concepts of Quality Improvement and Safety will be introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 5841 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPTR 5842 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5843 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5901 - Integrated Clin Experience I (1 Credit)

Short-term clinical education experience providing initial foundation and understanding of clinical practice with emphasis on integration of didactic and clinical learning while working in a student team.

Prerequisites: DPT Program students only

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 6002 - Clinical Anatomy II (3 Credits)

This course follows a regional approach to gross anatomy of the systems of the abdomen and pelvis and supplemented by cross sectional anatomy radiographic and digital imaging. An in-depth study of upper and lower extremity arthrology through whole-body donor dissection is included.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

DPTR 6102 - Movement Science II (2 Credits)

Application of movement science in physical therapy practice with emphasis on human movement related to aging, clinical analysis, tests & measures, and prosthetics & orthotics. The prosthetic & orthotic unit is designed to build student competency in clinical management of individuals who require use of common prosthetic & orthotic devices

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 6302 - Medical Conditions II (2 Credits)

This course continues the physical therapy management of patients with varied medical conditions (cancer; rheumatic) occurring across the lifespan and health care settings. Physiology, medical management, diagnostic testing, clinical decision making and medical screening are covered with implications for physical therapist's practice.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 6303 - Medical Conditions III (3 Credits)

This course continues the physical therapist management of medical conditions. Integumentary, endocrine, transplant, geriatric and ICU care are emphasized. Physical therapist's clinical decision-making and differential diagnosis are advanced while integrating physiology, medical and pharmacological management and diagnostic testing.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 6402 - Musculoskeletal Conditions II (2 Credits)

This course continues the examination, clinical reasoning, and physical therapy management of musculoskeletal disorders across the life span, focusing on conditions affecting the cervical and thoracic regions. Medical management principles such as radiology and pharmacology are also covered, with implications for physical therapy management.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

DPTR 6403 - Musculoskeletal Conditions III (2 Credits)

This course continues the examination, physical therapy management and clinical reasoning necessary for the management of individuals with musculoskeletal (MSK) disorders across the life span, focusing on upper extremity conditions. MSK medical management, radiology and pharmacology are covered with implications for physical therapy management.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 6404 - Musculoskeletal Conditions IV (2 Credits)

This course covers the examination, clinical reasoning, and physical therapy management of musculoskeletal disorders across the life span, focusing on temporomandibular disorders, pediatric orthopedics, adolescent orthopedics, pelvic health, working adults, and geriatric orthopedics within the continuum of care. Medical management principles such as radiology and pharmacology are also covered, with implications for physical therapy management.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

DPTR 6502 - Neuromuscular Conditions II (2 Credits)

This course includes an in-depth exploration of people with neurodegenerative conditions across the lifespan, specifically as related to tests and measures, prognoses, and intervention approaches. Radiology and pharmacology as related to neuropathy are included.

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 6503 - Neuromuscular Conditions III (4 Credits)

This course progresses and synthesizes clinical skills, decision-making and reasoning using frameworks and evidence applied the physical therapy management for people with neurological conditions across the lifespan. Primary topics include vestibular disorders, traumatic/acquired brain injury, developmental and genetic disorders, and spinal cord injury.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

DPTR 6632 - Clinical Reasoning II (1 Credit)

This advanced course teaches students to integrate current evidence with critical reasoning in the ICF framework to facilitate patient-centered decision making in the examination, prognosis, and for intervention for complex patient cases across a variety of clinical practice settings.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

DPTR 6633 - Clinical Reasoning III (2 Credits)

This course requires students to integrate evidence, patient values, and clinical expertise with the ICF model of clinical decision making for actual patient cases. Students will identify and answer focused questions regarding examination, intervention, and prognosis through literature searches and online collegial discussion forums. Requirement: DPT Students only

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 6712 - Professional Development II (2 Credits)

Professional Development II expands conversations regarding our professional identity to consider what it means to be a health professional. We will explore our obligations to our patients, our profession, and society and consider the future of physical therapist practice. During the second half of the course we will turn our attention toward professional development, including licensure, practice settings, and post-professional career opportunities.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 6713 - Professional Development III (1 Credit)

Introduction to leadership in healthcare including leadership styles/ characteristics. Explores preparation for professional development opportunities following licensure including continuing education, consideration of salary/benefits/debt/etc., and the first position as a new professional. Discussion about career expectations, moving through the continuum of novice to expert, debate, and developing one's professional identity/potential.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

DPTR 6732 - Healthcare Delivery II (3 Credits)

This course covers the organization, financing, and delivery of physical therapy services within the United States healthcare system. Topics include business concepts relevant to providing care and managing a practice (marketing, human resources, risk management, financial management), and legal and regulatory issues (licensure, fraud/abuse laws, Americans with Disabilities Act, supervision of support staff). Additional content includes comparisons between the US system and other countries, and professional issues like interviewing, negotiating job offers, and selecting positions after graduation.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 6851 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPTR 6852 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue content of their own choosing under guidance of a faculty mentor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 6853 - Independent Study (1-5 Credits)

This course provides students with an opportunity to pursue content of their own choosing under guidance of a faculty mentor.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 6902 - Integrated Clinical Experience II (1 Credit)

ICE II occurs in the middle of the fall semester and focuses on the broader roles that physical therapists have within patient and local community groups. It also continues the integration of classroom and clinical learning while student teams are placed in a new clinical setting (as compared to ICE I). ICE II allows immersion in activities focused on professional formation, advanced clinical problem solving, community engagement, and further development of cognitive, psychomotor and affective skills.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 6931 - Clinical Education I (5 Credits)

Eight-week, full time clinical experience providing students with the opportunity to take on responsibilities of the professional physical therapist, including beginning to manage a caseload and participating in a healthcare team. Requirements: DPT Students only.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Summer.

DPTR 6932 - Clinical Education II (6 Credits)

This is a 10-week, full-time supervised clinical experience. Experience with emphasis on increasing independence in management of patients, becoming an integral member of the healthcare team and using self-assessment for professional development.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DPTR 7112 - Applied Exercise Science (3 Credits)

This course will focus on functional capacity and performance testing, as well as exercise prescription, for individuals with multi-system involvement. Emphasis will be placed on clinical decision-making to tailor evidence-informed, patient-centered rehabilitation interventions, optimizing and enhancing each individual's functional abilities.

Additionally, the course will address overcoming multilevel barriers to both the prescription and execution of exercise interventions, as part of comprehensive rehabilitation care aimed at promoting health and function in medically complex populations.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 7171 - Health Promotion and Wellness II (3 Credits)

Students will apply fundamental concepts learned in HPWI to further understand individual, social and structural determinants of health. Equipped with this knowledge, they will work to design interventions and programs that promote health at the individual and community level.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

DPTR 7212 - Elective (1 Credit)

Various topics: provides students with the opportunity to explore selected topics, related to clinical practice, in depth or topics that are outside of the scope of the set curriculum. DPT students only.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Summer.

DPTR 7213 - National Physical Therapy Examination Preparation (1 Credit)

This course provides a structured and comprehensive review of key concepts covered on the National Physical Therapy Examination (NPTE). Students will engage with interactive lectures, structured study plans, and practice examinations designed to simulate the NPTE testing format and environment. Emphasis is placed on test-taking strategies, time management, and problem-solving skills. Content review areas may include the musculoskeletal, neuromuscular, cardiovascular, pulmonary, and integumentary systems, with a focus on clinical reasoning and application of foundational knowledge. Additional resources, including question banks and study guides, will be provided to reinforce learning.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPTR 7641 - Integrated Practice (2 Credits)

A synthesis of curricular content applied to highly complex situations illustrative and inclusive of clinical practice across the lifespan. Through retrospective and prospective reasoning, students will analyze and articulate decisions based on reasoning, evidence, and contextual realities with colleagues across health care professions. Requirement: DPT Student Enrollment Only

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 7651 - Clinical Reasoning Capstone (4 Credits)

Final course in the clinical reasoning sequence requires students to articulate and defend their clinical decision-making process in the exam, eval, management, and outcome assessment for a selected patient. Students will synthesize and integrate the evidence to inform decision making throughout each aspect of the patient mgmt process.

Requirement: DPT Student Enrollment Only

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 7861 - Independent Study (1-3 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 6.

Typically Offered: Summer.

DPTR 7862 - Independent Study (1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 7933 - Clinical Education III (10 Credits)

Terminal clinical experience with emphasis on professional identity formation and functioning as an entry-level clinician within the complexities of the healthcare system. Students will develop a deeper understanding of the role of the physical therapist within the profession and broader society. First phase of the yearlong internship.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

IPCP 5000 Interprofessional Collaborative Practice

This course develops core competencies in teamwork & collaboration for incoming health professions students. Students will learn in Interprofessional Teams (IP) teams coached by IPE faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve IP collaboration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring

IPHE 6000 Interprofessional Healthcare Ethics and Health Equity

This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice. This course integrates interprofessional collaboration and teamwork to teach students ethical theory and reasoning, professional ethics and its historical origins, and approaches to health care decision-making.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer

Policies

Please refer to the University of Colorado DPT Program Student Handbook 2025-2026 (https://medschool.cuanschutz.edu/docs/librariesprovider91/education-program-documents/dpt-student-handbook-2024-25_final.pdf?sfvrsn=cad056b4_1)

Faculty

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Program Director, Residential Pathway, CU Physical Therapy Program*

*Joanne Posner-Mayer Endowed Chair in Physical Therapy
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Director, Muscle Morphology, Mechanics, and Performance Laboratory*

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Learning Outcomes

Doctor of Physical Therapy Learning Outcomes

Student Learning Outcomes for the DPT Program are founded on 5 Curricular Elements: 1) Patient-Centered Care, 2) Clinical Reasoning and Evidence Based Practice, 3) Movement for Participation, 4) Teamwork and Collaboration, and 5) Quality Improvement and Safety. Specifically, the learning outcomes are that all (100%) of program graduates and their employers will be competent in:

1. Delivery of patient-centered clinical care.
2. Clinical reasoning and decision-making.
3. Applying foundational science knowledge to clinical care to promote patient/population movement for life participation.
4. Applying principles of teamwork and collaboration within healthcare systems.
5. Providing quality patient-centered health care that is safe, effective, ethical, equitable, and takes cost into account.

Physician Assistant Studies (MPAS)

CHA/PA Program Overview

The three-year, innovative curriculum of the University of Colorado PA program is designed to integrate clinical and basic sciences to prepare graduates with the knowledge, skills, and attitudes to practice medicine as part of the health care team. Graduates practice in all areas of medicine and serve patients of all ages.

Welcome from the Director

Welcome to the University of Colorado Child Health Associate/Physician Assistant (CHA/PA) Program. I invite you to explore our website to learn more about our program and students. You will see that we are unique among Physician Assistant programs in terms of our curriculum and courses. We are proud to be a part of this dynamic educational program that is consistently among the top-ranked programs according to US News and World Report.

Over the past 55 years, over 1,400 CHA/PA graduates have entered the workforce. CHA/PA alumni can be found throughout Colorado and across the United States, practicing in a wide variety of primary and specialty care settings.

The program is also recognized for its unique educational value and comprehensive physician assistant training. Costs for our three-year program for both in-state and out-of-state students are lower or comparable to most two-year training experiences. In 2018, we launched the Colorado Curriculum. Based on current research in learning theory, this curriculum is designed to support learner mastery of the complex concepts of patient care. In addition to our extensive adult curriculum and integrated clinical training across all three years, we offer expanded training in pediatric medicine as well as several track options.

We are proud of our program and fortunate to be at the heart of a vibrant and growing health sciences center. The Anschutz Medical Campus has state-of-the-art hospitals, research centers, and nationally recognized health professional schools. Our campus was also built with a vision of interprofessional education; through our longitudinal interprofessional training curriculum, we are working together to prepare all our learners for team-based practice models of the future.

Thanks for your interest and I hope to see you on campus.

Jonathan Bowser
CHA/PA Program Director
Associate Dean of Physician Assistant Studies
Associate Professor, Section Head of Pediatrics

Newsletter

Would you like to receive our newsletter? It is sent quarterly to all those interested in CHA/PA. E-mail PA-info@ucdenver.edu to sign up.

Welcome, Prospective Students!

The Physician Assistant program at the CU School of Medicine is a graduate-level program awarding a Master of Physician Assistant Studies (MPAS) upon completion. The 35-month, full-time curriculum provides comprehensive physician assistant education in primary care across the lifespan, with expanded training in pediatrics and care of the medically underserved.

One class of 44 students is enrolled in the summer semester each year through a competitive admissions process. Please read on for details on how to apply, prerequisites, and much more!

Admissions Procedures

How do I apply? (<https://medschool.cuanschutz.edu/physician-assistant-program/prospective-students/how-to-apply/>) Information on deadlines, the CASPA application, the supplemental application, and CASPer.

Admissions process (<https://medschool.cuanschutz.edu/physician-assistant-program/prospective-students/admissions-process/>) - An overview of requirements, application processing, and interviews.

Admissions Timeline (<https://medschool.cuanschutz.edu/physician-assistant-program/prospective-students/admissions-timeline/>) - Table outlining the admission's timeline from application to orientation.

Prerequisites and Program Requirements

Information on prerequisites (<https://medschool.cuanschutz.edu/physician-assistant-program/prospective-students/prerequisites/>), including minimum GPAs, courses required before applying, courses required before matriculation, and coursework taken outside the U.S. You can find a **Prerequisite Worksheet** on this page to help you determine what prerequisite coursework you still have outstanding, as well as a **list of advisors at local institutions**.

CHAPA Technical Standards (https://medschool.cuanschutz.edu/docs/librariesprovider92/default-document-library/chapa-technical-standards-2022.pdf?sfvrsn=edc66fbb_0) - Outlines the technical standards required for admission, promotion, and graduation.

Questions?

Information Sessions (<https://medschool.cuanschutz.edu/physician-assistant-program/prospective-students/information-sessions/>) - Attend an information session to get an overview of the CHA/PA program and prerequisites. Following the presentation, current students will answer your questions and give you a tour of the campus!

Frequently Asked Questions (<https://medschool.cuanschutz.edu/physician-assistant-program/prospective-students/faq/>) - Review for commonly asked questions about the program, applications, and courses.

Interprofessional Education and Tracks

Educational content is enhanced through the applications of family-centered care, behavioral and psychosocial perspectives as well as social and community initiatives for health and wellness. The program has integrated content in public health, oral health, professionalism, and interprofessional education (<https://www.cuanschutz.edu/centers/IPE/>). Students with a personal area of interest may also have the opportunity to participate in specialized tracks to enhance learning such as Rural Health and Pediatric Critical and Acute Care.

Clinical Experience and Affiliates

The curriculum includes a fully integrated clinical curriculum across all three years with clinical rotations in the hospital and community settings. During clinical experiences, students participate in history-taking, physical examination and assessment, development of a differential diagnosis and clinical decision-making and planning of treatments and interventions. Students work closely with preceptors and other members of the health care team and are evaluated on skills and competencies required for patient care.

As a part of the University of Colorado School of Medicine, the faculty of the entire school of medicine and affiliates contribute greatly to the quality of the learning experiences provided at the CHA/PA Program. Affiliations with the University of Colorado Hospital, Children's Hospital Colorado, and Denver Health and Hospitals in addition to community centers and clinics provide a network of clinical rotations to enhance the training of students. The faculty within the departments of Pediatrics, Family Medicine, Internal Medicine, Surgery, and others regularly participate in both classroom and clinical training of the CHA/PA Program students.

Degree

The University of Colorado PA Program has gained national recognition for its curriculum in primary care medicine. The Program confers a Professional Master's Degree (MPAS). In accordance with the mission of the program, the CHA/PA Program curriculum provides comprehensive physician assistant education in primary medical care with additional training in pediatrics and the need for service to disadvantaged, at risk and medically underserved populations. There are specific requirements that all students must complete to receive the MPAS degree from our fully accredited PA Program. Graduates are well prepared to perform in primary care practice with patients across the lifespan. Historically our students have performed above the national average in score and passing rate on the National Commission on Certification of Physician Assistants (NCCPA) examinations.

Graduation and awarding of the Masters of Physician Assistant Studies is based upon the following requirements:

- Successful completion of all coursework and rotations of the University of Colorado PA Program
- Exhibiting professionalism throughout the course of study
- Successful completion of the Comprehensive Clinical Knowledge and Clinical Skills Examinations

Degree Requirements

Year 1

Year 1		Hours
Summer		
MPAS 5000	Summer Immersion	10
Hours		10
Total Hours		10
Year 1		
Fall		Hours
MPAS 5001	Hematology, Infection, Inflammation and Malignancy I	4
MPAS 5002	Gastrointestinal, Genitourinary and Renal I	5
MPAS 5003	Cardiovascular and Pulmonary I	5

MPAS 5020	Clinical Skills I	3
MPAS 5030	Foundations in Prevention, Advocacy and Prof Practice I	2
MPAS 5050	Clinical Experiences I	4
Hours		23
Spring		
MPAS 5004	Dermatology and HEENT I	4
MPAS 5005	Musculoskeletal and Neurology I	4
MPAS 5006	Endocrinology and Reproduction I	4
MPAS 5007	Psychiatry I	3
MPAS 5021	Clinical Skills II	3
MPAS 5031	Foundations in Prevention, Advocacy and Prof Practice II	2
MPAS 5051 or MPAS 5911 or MPAS 5944	Community Clinic I or Pediatric Critical and Acute Care –1st year or Care of Hospitalized Adults - 1st Year	2
IPCP 5000	Interprofessional Collaborative Practice	1
Hours		23
Total Hours		46

Code	Title	Hours
<i>PCACLE Track</i>		
MPAS 5911	Pediatric Critical and Acute Care –1st year	2
<i>CHANGE Track</i>		
MPAS 5944	Care of Hospitalized Adults - 1st Year	2
<i>Global Track</i>		
MPAS 5983 & MPAS 5984	Global Health Track Elective I - 1st Year and Global Health Track Elective II - 1st Year	2
<i>Rural Track</i>		
MPAS 5985 & MPAS 5986	Rural Health Track Elective I - 1st Year and Rural Health Track Elective II - 1st year	2

Year 2

Year 2		
Summer		Hours
MPAS 6051	Community Clinic I	2
MPAS 6052	Community Clinic II	2
Hours		4
Total Hours		4

Year 2		
Fall		Hours
MPAS 6001	Hematology, Infection, Inflammation and Malignancy II	4
MPAS 6002	Gastrointestinal, Genitourinary, and Renal II	5
MPAS 6003	Cardiovascular and Pulmonary II	5
MPAS 6020	Clinical Skills III	3
MPAS 6030	Foundations in Prevention, Advocacy and Prof Practice III	2
MPAS 6053 or MPAS 6612 or MPAS 6644	Community Clinic III or Pediatric Critical and Acute Care –2nd year or Care of Hospitalized Adults - 2nd Year	2
IPHE 6000	IPE Healthcare Ethics & Health Equity	1
Hours		22
Spring		
MPAS 6004	Dermatology and HEENT II	4
MPAS 6005	Musculoskeletal and Neurology II	4

MPAS 6006	Endocrinology and Reproduction II	4
MPAS 6007	Psychiatry II	3
MPAS 6021	Clinical Skills IV	3
MPAS 6031	Foundations in Prevention, Advocacy and Prof Practice IV	2
MPAS 6054 or MPAS 6612 or MPAS 6644	Community Clinic IV or Pediatric Critical and Acute Care –2nd year or Care of Hospitalized Adults - 2nd Year	2
Hours		22
Total Hours		44

Code	Title	Hours
Electives:		
MPAS 6640	Emergency Medicine Preceptorship	2
MPAS 6670	Women's Health Preceptorship	2
MPAS 6671	Guatemala Clinical Immersion Experience I (Summer Only)	2
<i>PCACLE Track</i>		
MPAS 6612	Pediatric Critical and Acute Care –2nd year	2
<i>CHANGE Track</i>		
MPAS 6644	Care of Hospitalized Adults - 2nd Year	4
<i>Global Track</i>		
MPAS 6672	Guatemala Immersion I for Global Health Track (Summer Only)	2
<i>Rural Track</i>		
MPAS 6675 & MPAS 6676	Rural Health Track Elective I - 2nd Year and Rural Health Track Elective II - 2nd Year	2

Year 3

Code	Title	Hours
Total credit hours for year 3 are 42		
Required:		
MPAS 6905	Surgery	4
MPAS 6930	Primary Care I	4
MPAS 6940	Primary Care II	4
MPAS 6947	Primary Care III	4
MPAS 6948	Emergency Medicine	4
MPAS 6974	Primary Care IV	4
MPAS 6978	Clinical Connections I (Fall Only)	1
MPAS 6979	Clinical Connections II (Spring Only)	1
Electives:		
MPAS 6932 or MPAS 6942	Academic Inpatient Pediatric Medicine Inpatient Adult Medicine	4
MPAS 6970 or MPAS 6936	Adult Elective II - 4-week Rotation (Sec I, II, III, IV) Pediatric Elective II - Four Week Rotation (Sec I, II, III, IV)	4
MPAS 6920	Neonatology	4
MPAS 6938	Adolescent Medicine	4
MPAS 6975	Behavioral & Mental Health	4
MPAS 6971	Guatemala Clinical Immersion Experience II (Summer Only)	4
<i>PCACLE Track</i>		
MPAS 6913	Pediatric Critical and Acute Care—3rd year	4
<i>CHANGE Track</i>		
MPAS 6944	Care of Hospitalized Adults - 3rd Year	4
<i>Rural Track</i>		
MPAS 6952	Rural Community Medicine (Sec I, II, III)	4
<i>Global Track</i>		

MPAS 6972	Guatemala Immersion II for Global Health Track (Summer Only)	4
MPAS 6983	Global Health Track Elective I - 3rd Year	4
MPAS 6985	Global Health & Disasters	2

LICENSE is a mnemonic for highlighting the vision and goals of the Colorado Curriculum.

Longitudinal

The Colorado Curriculum is a 3-year, spiral design curriculum that progresses from foundational concepts to more complex topics and skills in a developmentally appropriate manner.

Integrated

The Colorado Curriculum integrates basic science, clinical medicine, and professional practice in didactic and active learning sessions for each clinical presentation.

Clinical Presentations

The Colorado Curriculum is anchored in over 70 clinical presentations arranged in 7 body system blocks, and drives learning through a case-based approach.

Entry Ready

The Colorado Curriculum prepares students to meet all professional competencies to practice in primary care medicine, including interprofessional team practice, meeting the needs of the profession and the communities it serves.

Needs-Based

The Colorado Curriculum uses continuous quality improvement measures and assessments to monitor and respond to all stakeholder needs, including learners, faculty, patients, preceptors, and the community.

Student/Learner Centered

The Colorado Curriculum places learners/students at its center, encouraging reflective practice and wellness as they grow to be lifelong learners.

Experiential

The Colorado Curriculum grounds all learning in the context of the clinical encounter, using 4 threads to integrate and apply content to specific cases, patient populations and clinical settings.

CHA/PA Core Competencies

COMPETENCIES REQUIRED OF CHA/PA PROGRAM STUDENTS UPON GRADUATION

GRADUATE CORE COMPETENCIES

Upon graduation CHA/PA students are expected to demonstrate competencies in specific areas. Performance should be commensurate with that of a new practitioner. The CHA/PA program provides educational experiences to support student development of requisite knowledge, skills and attitudes.

I. PATIENT CARE

CHA/PA graduates must be able to provide patient care that is compassionate, appropriate and effective for health promotion, disease prevention and the treatment of health problems. Graduates are expected to:

- A. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- B. Elicit a detailed and accurate history from their patients
- C. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- D. Perform competently all diagnostic and therapeutic procedures considered essential for the area of practice, including an appropriate physical exam
- E. Develop and implement patient management plans and health care services, including plans for health promotion, disease prevention, and medical and surgical conditions
- F. Provide education and counseling to patients and families regarding health care management
- G. Use information technology to support patient care decisions and patient education
- H. Work under the supervision of a physician and with other health care professionals from other disciplines to provide patient-focused care

II. MEDICAL KNOWLEDGE

CHA/PA graduates must demonstrate knowledge about established and evolving biomedical and clinical information (including epidemiological and socialbehavioral sciences) and demonstrate the application of that knowledge to patient care. Graduates are expected to:

- A. Demonstrate an investigatory and analytical approach to clinical problem-solving
- B. Know and apply basic science and clinical knowledge appropriate to their clinical practice

III. PRACTICE-BASED LEARNING AND IMPROVEMENT

CHA/PA graduates must be able to evaluate their practice in the context of current scientific evidence. Graduates must be able to access, critically evaluate and apply this evidence to improve patient care.

- A. Analyze current practice and identify areas for practice improvement
- B. Identify, locate and assimilate evidence from scientific studies related to their patients' health
- C. Obtain and use information to benefit their own patient population
- D. Apply knowledge of study designs and statistical methods to the appraisal of studies and other information on diagnostic and therapeutic effectiveness
- E. Use information technology to manage information, access on-line information; and support their own continued learning

IV. INTERPERSONAL AND COMMUNICATION SKILLS

CHA/PA graduates must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional colleagues from a variety of disciplines. Graduates are expected to:

- A. Create and sustain a therapeutic and ethically sound relationship with patients
- B. Use effective listening skills and elicit and provide information using effective nonverbal, explanatory questioning and writing skills
- C. Work effectively with others as a team member or leader of a health care team or other professional group, under the supervision of a physician
- D. Use effective communication skills to refer patients to other health care providers or systems

V. PROFESSIONALISM

CHA/PA graduates must demonstrate commitment to professional responsibilities, adherence to ethical principles, and sensitivity to diverse patient populations. Graduates are expected to:

- A. Demonstrate respect, compassion, and integrity; responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society and the profession; and commitment to excellence and on-going professional development
- B. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent and business practices
- C. Demonstrate sensitivity and responsiveness to patients' culture, age, gender and disabilities

VI. SYSTEM-BASED PRACTICE

CHA/PA graduates must demonstrate awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Graduates are expected to:

- A. Understand how their patient care and professional practices affect other health care professionals in the health care organization, the larger society and how these elements of the system affect their own practice
- B. Know how medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
- C. Practice cost-effective health care and resource allocation that does not compromise quality of care
- D. Advocate for quality patient care and assist patients in dealing with system complexities
- E. Know how to partner with health care managers and providers to assess, coordinate and improve health care and know how these activities can affect system performance.

Courses

MPAS 5000 - Summer Immersion (10 Credits)

This first year course is designed to introduce learners to the Anschutz Medical Campus, fundamentals of learning strategies, PA professional roles, wellness and resilience and the clinical presentation curriculum.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Summer.

MPAS 5001 - Hematology, Infection, Inflammation and Malignancy I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with hematologic, infection, inflammation and malignancy conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5002 - Gastrointestinal, Genitourinary and Renal I (5 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with gastrointestinal, genitourinary and renal conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5003 - Cardiovascular and Pulmonary I (5 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with cardiovascular and pulmonary conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5004 - Dermatology and HEENT I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with dermatologic, head, ears, eyes, nose, and throat conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5005 - Musculoskeletal and Neurology I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with musculoskeletal and neurologic conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5006 - Endocrinology and Reproduction I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with endocrine and reproductive conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5007 - Psychiatry I (3 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with psychiatric conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5020 - Clinical Skills I (3 Credits)

Learners will be engaged in a first-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5021 - Clinical Skills II (3 Credits)

Learners will be engaged in a first-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation. This is a continuation of MPAS 5020.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5030 - Foundations in Prevention, Advocacy and Prof Practice I (2 Credits)

Learners will be engaged in a first-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5031 - Foundations in Prevention, Advocacy and Prof Practice II (2 Credits)

Learners will be engaged in a first-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5050 - Clinical Experiences I (4 Credits)

Learners will be engaged in a preparatory course that provides a fundamental orientation to the clinical environment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5051 - Community Clinic I (2 Credits)

Clinical experience designed to give the student an introduction to ambulatory medicine and an understanding of pediatric and family practice medicine.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5911 - Pediatric Critical and Acute Care --1st year (2 Credits)

Clinical experience designed to give the student an introduction to pediatric critical and acute care and pediatric inpatient medicine. Students must complete application process and be accepted before enrollment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5944 - Care of Hospitalized Adults - 1st Year (2 Credits)

Clinical experience designed to give the student an introduction to hospitalized adult inpatient medicine. Students must complete application process and be accepted before enrollment.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 5951 - CHA/PA Independent Study I - 1st year (1 Credit)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 16 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 5952 - CHA/PA Independent Study II - 1st Year (2 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 32 hours during the semester they are enrolled. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 5953 - CHA/PA Independent Study III - 1st Year (3 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 48 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 5983 - Global Health Track Elective I - 1st Year (1 Credit)

Learners are immersed in a first-year interprofessional course that brings an international lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5984 - Global Health Track Elective II - 1st Year (1 Credit)

Learners are immersed in a first-year interprofessional course that brings an international lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor. This course is a continuation of MPAS 5983.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5985 - Rural Health Track Elective I - 1st Year (1 Credit)

Learners are immersed in a first-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Restriction: Restricted to CHA/PA Students enrolled in Track; Must receive approval from Associate Director of Curriculum.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5986 - Rural Health Track Elective II - 1st year (1 Credit)

Learners are immersed in a first-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. This course is a continuation of MPAS 5985. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 6001 - Hematology, Infection, Inflammation and Malignancy II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with hematologic, infection, inflammation and malignancy conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6002 - Gastrointestinal, Genitourinary, and Renal II (5 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with gastrointestinal, genitourinary and renal conditions. Restriction: MPAS majors only

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6003 - Cardiovascular and Pulmonary II (5 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with cardiovascular and pulmonary conditions. Prereq: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6004 - Dermatology and HEENT II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with dermatologic, head, ears, eyes, nose and throat conditions. Prerequisite: MPAS majors only

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6005 - Musculoskeletal and Neurology II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for presenting with musculoskeletal and neurologic conditions. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6006 - Endocrinology and Reproduction II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for presenting with endocrine and reproductive conditions. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6007 - Psychiatry II (3 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with psychiatric and behavioral health conditions. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6020 - Clinical Skills III (3 Credits)

Learners will be engaged in a second-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6021 - Clinical Skills IV (3 Credits)

Learners will be engaged in a second-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation. This is a continuation of MPAS 6020. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6030 - Foundations in Prevention, Advocacy and Prof Practice III (2 Credits)

Learners will be engaged in a second-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6031 - Foundations in Prevention, Advocacy and Prof Practice IV (2 Credits)

Learners will be engaged in a second-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6051 - Community Clinic I (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6052 - Community Clinic II (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6053 - Community Clinic III (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6054 - Community Clinic IV (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6612 - Pediatric Critical and Acute Care –2nd year (2 Credits)

Students will develop assessment and patient management skills in care of pediatric patients in critical and acute care and inpatient settings.

Restricted to CHA/PA students who have completed MPAS 5911.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6640 - Emergency Medicine Preceptorship (2 Credits)

Students will develop assessment and patient management skills in care of patients in emergency medicine settings. Restrictions: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6644 - Care of Hospitalized Adults - 2nd Year (4 Credits)

Students will develop assessment and patient management skills in care of adult patients in an inpatient setting. Restricted to CHA/PA students who have completed MPAS 5944.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6651 - CHA/PA Independent Study I - 2nd Year (1 Credit)

Approval is required by the CHA/PA Program. This course is offered to those students that are pursuing an independent course of study for 16 hours during the semester they are enrolled. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6652 - CHA/PA Independent Study II - 2nd Year (2 Credits)

Approval is required by the Associate Director of Curriculum. This course is offered to those students that are pursuing an independent course of study for 32 hours during the semester they are enrolled. Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6653 - CHA/PA Independent Study III - 2nd Year (3 Credits)

Approval is required by the CHA/PA Program. This course is offered to those students that are pursuing an independent course of study for 48 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6670 - Women's Health Preceptorship (2 Credits)

Students will develop assessment and patient management skills in women's health under the supervision of community clinical preceptors.

Restrictions: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6671 - Guatemala Clinical Immersion Experience I (2 Credits)

Two-week Spanish language immersion experience followed by a two-week primary care clinic experience in the country of Guatemala. Approval must be given by the CHA/PA Course Director prior to enrollment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Summer.

MPAS 6672 - Guatemala Immersion I for Global Health Track (2 Credits)

Two-week Spanish language immersion experience followed by a two-week clinic experience in the country of Guatemala for fulfillment of Global Health Track requirements. Approval must be given by the CHA/PA Course Director and CHA/PA Program Global Health Track Faculty Advisor prior to enrollment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Summer.

MPAS 6675 - Rural Health Track Elective I - 2nd Year (1 Credit)

Learners are immersed in a second-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6676 - Rural Health Track Elective II - 2nd Year (1 Credit)

Learners are immersed in a second-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. This course is a continuation of MPAS 6675. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 6905 - Surgery (4 Credits)

The course involves active participation in a surgical setting with exposure to patients across the lifespan. The student will have exposure to patients requiring pre-operative, intra-operative and post-operative care for acute, chronic, or emergent conditions. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6913 - Pediatric Critical and Acute Care—3rd year (4 Credits)

The course involves active participation in an inpatient pediatric intensive care unit (PICU) setting at Children's Hospital Colorado. The student will be exposed to infants, children and adolescents requiring acute, chronic, and emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restricted to CHA/PA students who have completed 6613.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6920 - Neonatology (4 Credits)

This course involves active participation in the care of neonates in a teaching hospital. Attendance at morning rounds, making case presentations and participating in the night and weekend call schedule are required. Students are encouraged to attend deliveries and perform circumcisions and other procedures with appropriate supervision. Restrictions: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6930 - Primary Care I (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 43.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6932 - Academic Inpatient Pediatric Medicine (4 Credits)

The course involves active participation in an inpatient hospital setting with exposure to infants, children, and adolescents. The student will have exposure to patients requiring acute, chronic, or emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restriction: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6936 - Pediatric Elective II - Four Week Rotation (Sec I, II, III, IV) (4 Credits)

The course involves active participation in a general or specialty pediatric practice in an outpatient, surgical and/or inpatient facility. The student will be exposed to infants, children and adolescents requiring acute, chronic, emergent and/or preventative care, with potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 43.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6938 - Adolescent Medicine (4 Credits)

The course involves active participation in an adolescent medicine practice in an outpatient or inpatient setting. The student will be exposed to adolescents and young adults requiring acute, chronic, emergent and/or preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6940 - Primary Care II (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6942 - Inpatient Adult Medicine (4 Credits)

The course involves active participation in an inpatient hospital practice. The student will be exposed to adults and elderly requiring acute, chronic, emergent and/or preventative care while hospitalized. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6944 - Care of Hospitalized Adults - 3rd Year (4 Credits)

The course involves active participation in an inpatient setting at University of Colorado Hospital. The student will be exposed to adults and elderly requiring acute, chronic, and emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restricted to CHA/PA students who have completed 6644.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6947 - Primary Care III (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6948 - Emergency Medicine (4 Credits)

The course involves active participation in an emergency room setting with exposure to patients across the lifespan. The student will have exposure to patients requiring acute, chronic, or emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6952 - Rural Community Medicine (Sec I, II, III) (4 Credits)

The course involves active participation in a rurally located medical practice with exposure to patients across the lifespan. The student may have exposure to patients requiring acute, chronic, emergent, and preventative care in ambulatory, home, inpatient and/or skilled nursing settings. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend hours may be required. Registration is restricted to those students enrolled in authorized Track.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6970 - Adult Elective II - 4-week Rotation (Sec I, II, III, IV) (4 Credits)

The course involves active participation in a general or specialty adult practice in an outpatient, surgical and/or inpatient facility. The student will be exposed to adults and the elderly requiring acute, chronic, emergent and/or preventative care, with potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 4.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6971 - Guatemala Clinical Immersion Experience II (4 Credits)

The course involves active participation in an elective global health experience in Guatemala. The student will be exposed to care of patients across the lifespan with health disparities and global influences. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend call may be required. Permission must be given from the CHA/PA Program Course Director.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6972 - Guatemala Immersion II for Global Health Track (4 Credits)

The course involves active participation in an elective global health experience in Guatemala. The student will be exposed to care of patients across the lifespan with health disparities and global influences. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend call may be required. Registration is restricted to those students enrolled in authorized Track. Permission must be given from a CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6974 - Primary Care IV (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6975 - Behavioral & Mental Health (4 Credits)

The course involves active participation in a behavioral health/psychiatry practice in an outpatient, emergency, or inpatient facility. The student may be exposed to children, adolescents, adults, and elderly requiring acute, chronic, or emergent management of mental health conditions. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6978 - Clinical Connections I (1 Credit)

The course provides additional preparation to students for their clinical careers after graduation, including discussions and presentations related to licensure, credentialing, and medico-legal topics. Students will complete their capstone project within this course.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6979 - Clinical Connections II (1 Credit)

The course provides additional preparation to students for their clinical careers after graduation, including discussions and presentations related to licensure, credentialing, and medico-legal topics. Students will complete their capstone project within this course. This course is a continuation of MPAS 6978.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6983 - Global Health Track Elective I - 3rd Year (4 Credits)

The course involves active participation in an elective global health experience in Tanzania. The student will be exposed to care of patients across the lifespan with health disparities and global influences. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend call may be required. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6985 - Global Health & Disasters (2 Credits)

This course prepares its participants for international experiences and future global health work. This is an interactive training course which incorporates readings, lectures, small group problem based learning exercises, technical skill sessions and a disaster simulation exercise. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6991 - CHA/PA Independent Study I - 3rd year (1 Credit)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 16 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6992 - CHA/PA Independent Study II - 3rd Year (2 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 32 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6993 - CHA/PA Independent Study III - 3rd Year (3 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 48 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 3.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

Policies

Student Academic Policies and Procedures AY24-25

CHA/PA Faculty and Staff

Jonathan M. Bowser, MS, PA-C, Program Director, Associate Dean, Associate Professor of Pediatrics and Section Head

Tai Lockspeiser, MD, MHPE, Medical Director, Associate Professor of Pediatrics

Tanya Fernandez, MS, PA-C, Associate Program Director, Assistant Professor of Pediatrics

Amy Akerman, MPAS, PA-C, Faculty, Assistant Professor of Pediatrics

Manda Baker, Clinical Coordinator

Bethany Coulter, MBA, Business and Operations Manager

Kelsey Dougherty, MMSc, PA-C, Faculty, Assistant Professor of Pediatrics

Rachel Hess MAS, PA-C, Faculty, Clinical Instructor of Pediatrics

Lindsey Huttner, Didactic Coordinator

Roberta Knott, MPAS, PA-C, Clinical Site Educator, Associate Professor of Pediatrics

Kate LaPorta, MHS, PA-C, Faculty, Clinical Instructor of Pediatrics

Rebecca Maldonado, MSHPE, PA-C, Faculty, Associate Professor of Pediatrics

Michele Martinez, Admissions Coordinator

Denise Ogden, MA, PA-C, Faculty, Clinical Instructor of Pediatrics

Miguel Perez, Clinical Services Coordinator

Peggy Walsh Sheryka, MS, PA-C, Faculty, Instructor of Pediatrics

Jacqueline Sivahop, Ed.D., PA-C, Faculty, Associate Professor of Pediatrics

Danielle Thompson, Program Coordinator

Adjunct Faculty

Sarah Anderson, PharmD

Aimee Bernard, PhD

Felicia Doherty, PA-C

Claudia Luna-Asturias, LCSW

Joel Marrs, PharmD

Danielle Mashburn, PA-C

Amanda Miller, PA-C

Mike Pascoe, PhD

Garrett Scray, PA-C

Lindsey Weller, PA-C

Contact Info

University of Colorado PA Program

Mail Stop F543

13001 E. 17th Place, Room E7019

Aurora, Colorado 80045

Phone: (303) 724-7963

Fax: (303) 724-1350

PA-info@ucdenver.edu

OFFICE HOURS

Monday - Thursday, 7:30 a.m. – 4:00 p.m.

Friday, 7:30 a.m. – 3:00 p.m.

Skaggs School of Pharmacy and Pharmaceutical Sciences

Contacts

Mailing Address

University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
Mail Stop C238
Pharmacy and Pharmaceutical Sciences Building
12850 East Montview Boulevard
Aurora, CO 80045

Office of Student Services

(303) 724-2882 Phone
Office of Student Services Staff Contacts (<http://pharmacy.cuanschutz.edu/about-us/our-people/offices/#oss>)

Dean's Office

(303) 724-1234 Phone

Department of Clinical Pharmacy

(303) 724-2616 Phone
E-mail: nancy.j.miller@cuanschutz.edu (nicole.bost@cuanschutz.edu)

Department of Pharmaceutical Sciences

(303) 724-7263 Phone
(303) 724-7266 Fax
E-mail: isabella.jaramillo@cuanschutz.edu

Distance Degrees & Programs

(303) 724-3582 Phone
(303) 724-3732 Fax
Email: pharmacy.online@cuanschutz.edu

Experiential Programs

(303) 724-2655 Phone
(303) 724-2658 Fax
Email: Experiential.SOP@cuanschutz.edu

Overview

At the CU Skaggs School of Pharmacy and Pharmaceutical Sciences, we're proud of our programs. CU Pharmacy was ranked in the top 15 percent of pharmacy schools in the country. Our faculty are invited to write the textbook that all students learn from, our students consistently outperform other schools by winning national competitions and surpassing national licensing pass rates and faculty are lauded nationally with education and clinical awards.

Nationwide school rankings, licensing pass rates, **employment and residency outcomes**, and on-time graduation rates show that our school is exceptional.

To achieve its vision and mission, the school is committed to:

- **Recruiting, developing and retaining innovative and productive faculty and staff members** who contribute to the advancement of pharmacy education, research, scholarship and practice.
- **Providing expanded and innovative educational opportunities** that develop outstanding entry-level pharmacy practitioners who are motivated to advance pharmacy practice and the profession and to prepare scientists who are motivated to contribute to health and well-being through scientific research and scholarly pursuits.

- **Advancing the practice of pharmacy** through development of innovations in pharmacy practice and delivery of superior patient care, including serving as active members of collaborative healthcare care teams committed to patient care and well-being.
- **Improving health through research and scholarship** by being the innovators and leaders in research that promotes basic discovery, translation to clinical practice, medication evaluation and optimization of medication use. Through communication of research findings, foster enhanced knowledge in professional, graduate and post-graduate learners.
- **Providing leadership and service to our communities** by actively engaging with its many communities and local, national and global communities that would derive substantial benefit from the school's collective knowledge and expertise.
- **Achieving excellence through continuous quality improvement.**
- **Develop innovative strategies** to identify and exploit opportunities that allow the school to make major advances in its mission areas.

Accreditation

The Skaggs School of Pharmacy and Pharmaceutical Sciences was re-accredited thru June 2026 by the Accreditation Council for Pharmacy Education (ACPE), the national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education.

What is Accreditation?

Accreditation is a voluntary, non-governmental process of external quality review used by higher education to inspect colleges, universities and higher education programs for quality assurance and improvement.

Aside from the promise of overall quality educational opportunities, an institution's accreditation status provides students with the ability to qualify for federal funding and financial aid and to transfer credits to other programs that are also accredited. Accreditation can be required for professional licensure and is extremely appealing to employers.

Like all schools of pharmacy in the U.S., the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences is accredited by the Accreditation Council for Pharmacy Education (ACPE), a national agency for the accreditation of professional degree programs in pharmacy and providers of continuing pharmacy education. ACPE was established in 1932 for the accreditation of pre-service education, and in 1975 its scope of activity was broadened to include accreditation of providers of continuing pharmacy education.

Obtaining Accreditation

The process of accreditation is quite involved requiring the school to complete several steps in the accreditation process including:

- Preparation and self-examination
- Written self-study report of accomplishments
- Site visit by a team comprised of peer reviewers, and a representative from the accrediting body
- Judgment by the accrediting body
- Continuous review

By accepting accreditation status, a school agrees to uphold the quality standards set by the accreditation organization and agrees to periodically submit to accreditation renewal review.

More about ACPE

ACPE is an autonomous and independent agency whose board of directors is derived through the American Association of Colleges

of Pharmacy, the American Pharmacists Association, the National Association of Boards of Pharmacy (three appointments each), and the American Council on Education (one appointment).

To learn more about our school's accreditation status or about the accreditation process, contact ACPE (<https://www.acpe-accredit.org/>).

- Online Pharmacy Programs (p. 412)
 - Cannabis Science & Medicine (Certificate) (p. 413)
- Pharmacy (PharmD) (p. 414)
- Pharmacy Dual Degree Programs (p. 422)
 - PharmD/MBA Dual Degree (p. 422)
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 - Palliative Care (MS) (p. 425)
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 - Pharmaceutical Outcomes Research (PhD) (p. 430)
 - Pharmaceutical Sciences (PhD) (p. 434)
 - Toxicology (PhD) (p. 435)

Leadership

Dean

Ralph Altieri, PhD, Dean, School of Pharmacy and Pharmaceutical Sciences

Associate Deans

Michele Frankovich, MBA, EdD(c), Associate Dean for Finance & Budget

Brian Hemstreet, PharmD, Associate Dean for Student Affairs

Cindy OBryant, PharmD, Associate Dean for Academic and Faculty Affairs

Gina Moore, PharmD, MBA, Associate Dean for Administration and Operations

Manisha Patel, PhD, Associate Dean for Research & Graduate Studies

Joseph Saseen, PharmD, Associate Dean for Clinical Affairs

Jennifer Trujillo, PharmD, Associate Dean for Education

Assistant Dean

Shaun Gleason, PharmD, Assistant Dean for Distance Degree Programs

Kimberly Stultz, PharmD, Assistant Dean for Experiential Programs

Department Chairs

Douglas Fish, PharmD - Chair, Department of Clinical Pharmacy

Blake Hill, PhD - Chair, Department of Pharmaceutical Sciences

Online Pharmacy Programs

Distance Degrees and Programs Office

CU Pharmacy's Distance Degrees and Programs Office has offered flexible degree programs designed for working professionals for over 20 years. Online education has changed from its early format; however, we remain committed to offering flexible, innovative, and engaging graduate degree and certificate programs to expand career options for healthcare professionals. The Distance Degrees and Programs (DDP) strives to prepare students for success in all levels of pharmacy education and health-related education, from the basic sciences to advanced levels of pharmacist-delivered patient care to support the role of the pharmacist in promoting positive health outcomes for patients and the communities they serve. The DDP strives to provide innovative educational strategies to prepare students for success.

CONTACT US

Email: Pharmacy.Online@cuanschutz.edu

Our office is located in the Skaggs School of Pharmacy and Pharmaceutical Sciences building on the Anschutz Medical Campus.

Distance Degrees and Programs Office

Skaggs School of Pharmacy and Pharmaceutical Sciences
12850 E. Montview Blvd., Room V20-1116
Aurora, CO 80045
Mail Stop (C238-V20)
Office Phone Number: #303-724-3582
Office Fax Number: #303-724-3732

The following programs are available **online** through the Skaggs School of Pharmacy:

- Cannabis Science & Medicine (Certificate) (p. 413)

Graduation Ceremony

Students can graduate in May, August, and December. The formal graduation ceremony is held in late May at the Anschutz Medical Campus each year. Students who graduated the previous December, or August, or will be eligible for the current May graduation can participate in the May graduation ceremony. In the spring semester, the Distance Degrees and Programs Office will email all eligible students instructions on how to plan for the graduation ceremonies.

Diploma Application

All students must submit a diploma application through UCDenver Access (<https://passport.ucdenver.edu/login.php>). The deadline to submit the diploma application is located below in the Graduation Requirements and Deadlines tab.

Students who have an unpaid balance on their account or who have not submitted their diploma application by the deadline will not receive a diploma.

Graduation Requirements and Deadlines

A 2.0 cumulative, professional grade point average (GPA) is the minimum GPA required of all graduating Doctor of Pharmacy students. Students must also receive a passing grade for all required and elective advanced pharmacy practice experiences (APPEs), which includes both rotations and credit-by-challenge submissions.

All coursework, didactic and experiential, must be completed within six contiguous calendar years. Any exception to this requires approval from the program director and the DDP Committee.

In addition, students who miss the deadlines identified below may not graduate by their anticipated graduation date.

May graduation deadlines

- **First Day of Spring Semester** – The DDP Office must receive all credit-by-challenges in their final format.
- **First week of February (check with your advisor for the February deadline date as it varies by year)** – **Diploma application**
- **March 1** – Students admitted in summer 2014 semester to present: All Drug Information Portfolio and Professional Skills Portfolio materials must be submitted in **CORE** for final review.
- **May 1** - All renewal courses, rotations, and credit-by-challenge reviews must be completed. Proof of completion for an American Pharmacists Association (APhA) Pharmacy-Based Immunization Delivery certification training program must be submitted to the DDP Office. Students should review the **Immunization Training Policy** for specific training requirements.
- **Late May** – Graduation ceremonies are held at the Anschutz Medical Campus, typically near Memorial Day weekend. All students who are graduating are invited to attend graduation ceremonies.
- **Early June** – Degrees will be posted on the transcript for eligible students by early June.

August graduation deadlines

- **First Day of Summer Semester** – The DDP Office must receive all credit-by-challenges in their final format.
- **First week of June (check with your advisor for the June deadline date as it varies by year)** – **Diploma application**
- **July 1** - Students admitted in summer 2014 semester to present: All Drug Information Portfolio and Professional Skills Portfolio materials must be submitted in **CORE** for final review.
- **August 3** – All renewal courses, rotations, and credit-by-challenge reviews must be completed. Proof of completion for an American Pharmacists Association (APhA) Pharmacy-Based Immunization Delivery certification training program must be submitted to the DDP Office. Students should review the **Immunization Training Policy** for specific training requirements.
- **Late May** – All students who graduate in August may attend the graduation ceremonies held on the Anschutz Medical Campus the **following May**. The graduation ceremonies are typically held near Memorial Day weekend. There are no formal graduation ceremonies in August.
- **Early September** – Degrees will be posted on the transcript for eligible students by early September.

December graduation deadlines

- **First Day of Fall Semester** – The DDP Office must receive all credit-by-challenges in their final format.
- **First week of September (check with your advisor for the September deadline date as it varies by year)** – **Diploma application**
- **October 1** - Students admitted in summer 2014 semester to present: All Drug Information Portfolio and Professional Skills Portfolio materials must be submitted in **CORE** for final review.
- **November 30** - All renewal courses, rotations, and credit-by-challenge reviews must be completed. Proof of completion for an American Pharmacists Association (APhA) Pharmacy-Based Immunization

Delivery certification training program must be submitted to the DDP Office. Students should review the **Immunization Training Policy** for specific training requirements.

- **Late May** – All students who graduate in December may attend the graduation ceremonies held on the Anschutz Medical Campus the **following May**. The graduation ceremonies are typically held near Memorial Day weekend. There are no formal graduation ceremonies in December.
- **Early January** – Degrees will be posted on the transcript for eligible students by early January.

Cannabis Science & Medicine (Certificate)

Program Overview

The University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences is a leader in the scientific investigation, quality assurance, and clinical evaluation of plant-based medicines. Our Cannabis Science and Medicine Graduate Certificate extends that expertise with a 9-credit hour graduate certificate program. The certificate provides an in-depth understanding of the pharmacology and therapeutics of cannabis. Ideal candidates for this offering include healthcare professionals who want to optimize overall clinical outcomes and scientists who want to enhance their knowledge of cannabis chemistry, analysis, and actions.

The course's online nature and self-directed learning modules will allow flexibility for learners and offer wide geographic engagement.

- Self-directed learning will complement online, synchronous live, case-based discussions and/or activities guided by clinical practice experts, clinical researchers, medicinal plant chemists and pharmacologists, and legal and regulatory leaders.
- 9 credit hours of core coursework in pharmacology, therapeutics, and legal & regulatory issues.

Have questions about the program? Fill out our Request Information form (<https://pharmacy.cuanschutz.edu/cupharmacy/request-information/>) and one of our knowledgeable admissions counselors will contact you.

Eligibility

The Cannabis Science and Medicine (CSM) certificate is an online, interprofessional graduate certificate program educating healthcare professionals on the scientific use of cannabis and cannabis-derived products for therapeutic options. The certificate is open to applicants who:

- Have completed a B.S. or B.A. (or higher) in a biological, chemical, medical science or allied health program; OR
- Are enrolled and in good standing in an accredited health sciences professional school (MD, DO, PA, PharmD, DMD/DDS, RN, BSN, APRN, or other as appropriate).
 - Completed at least one year within their program's curriculum and are in good standing with a cumulative professional grade point average of at least 2.0.
 - Be in good standing with any internship licensing agency.

Visit the Cannabis Science and Medicine Admission Page (<https://pharmacy.cuanschutz.edu/academics/online-programs/cannabis-science-and-medicine/#certificate>) to learn how to apply.

Academic Requirements

The Graduate Certificate in Cannabis Science and Medicine (CSM) is a 9-11 credit hour, online academic-based graduate program. This program is ideal for health professionals and researchers interested in cannabis science, evaluation of clinical literature, and legal and regulatory issues.

The online nature of the course and self-directed learning modules will allow flexibility for learners and offer wide geographic engagement.

- Self-directed learning will be complemented by online, synchronous live, case-based discussions and/or activities guided by clinical practice experts, clinical researchers, medicinal plant chemists and pharmacologists, and legal and regulatory leaders.
- 9 credit hours of core coursework in pharmacology, therapeutics, and legal & regulatory issues.
- Optional opportunity to complete an additional 2 credit hours of coursework focusing on the chemical analysis of plant-based medicines (comprised of an online 2 credit hour laboratory methods course).
- Completion of this Graduate Certificate in CSM will also enable those desiring advanced study to apply their earned credits (9 to 11 credit hours) toward a 30-credit hour Master of Science degree in Pharmaceutical Sciences with an emphasis in CSM.

First Year

Fall		Hours
PCSM 6720	Cannabis Therapeutics Pain/Oncology	2
PCSM 6710	Cannabis Therapeutics Neurology/Mental Health	2
Hours		4
Total Hours		4

Second Year

Spring		Hours
PCSM 6730	Legal & Regulatory Issues in Cannabis Medicine	2
PCSM 7700	Cannabis Pharmacology & Physiology	3
Hours		5
Total Hours		5

Pharmacy (PharmD)

The Doctor of Pharmacy (PharmD) is a four-year professional degree program that will prepare you for a variety of careers in the dynamic profession of pharmacy. From hospitals to pharmaceutical companies, we'll prepare you to work in a variety of healthcare settings as a medication expert who makes a difference in the lives of patients.

Admissions Requirements

New students enter the program in the Fall. Candidates must submit their applications to PharmCAS **by June 1, 2025**, to create a PharmCAS account/application if they do not have one already. Candidates will need a PharmCAS application to be considered for admission. All application materials, including the application fee, must be received by the deadline. Late and/or incomplete applications will not be considered.

Applicants to the University of Colorado Skaggs School of Pharmacy are expected to conduct themselves within legal and ethical standards of behavior during the admission process. It is our goal to admit students with a high level of professionalism or professional potential.

You are responsible for properly completing your application, sending your supporting documentation and fees to PharmCAS and the School of Pharmacy on time, AND regularly checking the status of your file online by logging onto your PharmCAS web application. The admissions committee reserves the right to review each application on a case-by-case basis.

Coursework

Please visit the Skaggs School of Pharmacy website (<https://pharmacy.cuanschutz.edu/academics/pharmd/admissions-information/>) to review required Pre Pharmacy Coursework.

Applicants to the University of Colorado School of Pharmacy must complete all prerequisites with a grade of C or higher (C- or below is not acceptable) at a college or university that is accredited by the North Central Association of Colleges or one of its regional affiliates. Applicants must complete all prerequisites by the end of the spring term prior to their first fall term in the School of Pharmacy. Science and Calculus prerequisite course work must have been completed within the last 10 years of the semester in which the applicant intends to enroll. We can offer prerequisites extensions into the summer semester in certain circumstances. Please contact us at SOP.OSSAPPS@cuanschutz.edu (SOP.OSSAPPS@cuanschutz.edu) for more information. In many cases, applicants can be admitted while they are completing the course work in the spring semester but the number of courses in progress may affect the decision of the admissions committee should there not be sufficient course work to evaluate.

Transcripts

All transcripts must be submitted to PharmCAS regardless of the age or transferability of courses. The admissions committee considers all coursework completed and derives a cumulative GPA from all colleges and universities attended. Failure to reveal all transcripts will result in disqualification. Once admitted, official transcripts from all previous colleges and universities (including other University of Colorado campuses) attended must be submitted directly to the School of Pharmacy. All transcripts must be sent electronically through PharmCAS using the Academic Update process. Any transcripts sent after the deadline in April will also be required to be submitted electronically to the Admissions Team.

Application

Application to the Doctor of Pharmacy program is available through the Pharmacy College Application Service or PharmCAS (<http://www.pharmcas.org/>), a centralized application service to apply to multiple degree programs offered by schools and college of pharmacy. PharmCAS is designed for first-year professional PharmD degree programs.

GPA

The average GPA of our admitted students is typically around 3.4. Competition is typically the strongest among out-of-state applicants.

Recommendations

Two recommendation forms (<https://www.pharmcas.org/application-instructions/evaluations/>) are required as part of the PharmCAS application (<http://www.pharmcas.org/>). Letters submitted in lieu of completing the form will not be accepted. The applicant should seek recommendations attesting to his/her academic performance (academic recommendation) or on the applicant's professional skills and potential for success in a rigorous professional degree program (professional recommendation).

Interview

Interview Options

Qualified applicants will have the option to complete an On-Site or Virtual Interview, and if eligible, receive an offer of admission. Interviews start the beginning of Fall.

When a candidate meets the threshold to be invited for an interview, the school's admissions team will contact the candidate directly with a summary of available interview dates.

Other Requirements

English Proficiency

Excellent oral and written English communication skills are necessary prerequisites for admission to the school, success in the program and competent practice in the field of pharmacy. Applicants who meet one or more of the criteria in the review process will be required to take an evaluation of your English language proficiency. This will be completed via an Oral Proficiency Interview (OPIc) as part of the application process. The purpose of this computerized OPIc is to assess and rate a speaker's level of oral proficiency in English. Please be aware that for your application to continue through the admissions process, an OPIc is required. Aspects of this evaluation include pronunciation, grammar usage, and coherent discourse.

Due to the rigorous communicative demands of the PharmD program, the minimum English oral proficiency admission standard is "advanced low" according to the ACTFL Oral Proficiency Guidelines for Speaking. Applicants rated at an oral proficiency level below "advanced low" via the OPIc are disqualified from the pool of applicants considered for admission.

Confirmation Deposit

Approximately two weeks after receiving a letter of acceptance, applicants must submit a \$200 initial confirmation deposit to hold their position in the entering class. By March 1, an additional \$200 confirmation deposit will be required. (After March 1, the total admission

deposit will be \$400). This deposit will be credited after the first semester of matriculation.

Criminal Background Check

Each admitted student must submit to a national background check on upon initial, conditional acceptance to pharmacy school. The rationale for performing criminal background checks on accepted pharmacy school applicants is based on a number of issues, including 1) the need to enhance the safety and well-being of patients and, in so doing, to bolster the public's continuing trust in the pharmacy profession, 2) to ascertain the ability of accepted applicants to complete their pharmacy education (students are required to maintain a State of Colorado pharmacy intern license while participating in the pharmacy curriculum which includes direct patient care activities) and to eventually become licensed pharmacists.

In support of this recommendation, AACP has initiated a PharmCAS-facilitated national background check service, through which Certiphi Screening, Inc. (a Vertical Screen® Company) will procure a national background report on applicants at the point of acceptance. AACP has initiated this service in order to recognize the desire of pharmacy schools to procure appropriate national criminal history reports and to prevent applicants from paying additional fees at each pharmacy school to which they are accepted.

Drug Testing

All matriculated students are also required to undergo drug testing and you will receive further information regarding this requirement after you are enrolled in the program.

Correspondence Methods During the Admissions Cycle

The School of Pharmacy reserves the right to choose to correspond with our applicants via e-mail, phone or by U.S. Postal Services. It is incumbent upon the applicant to ensure a current email, phone and postal address are currently on file. The School of Pharmacy cannot be held accountable if the candidate does not receive or respond to application or admission related correspondence.

E-mail messages generated by the School of Pharmacy and related services may be sent simultaneously to multiple applicants. To avoid missing important e-mails, turn the "Spam" or "junk" email filters off during the application cycle or periodically check your Spam/junk e-mail file for the School of Pharmacy related messages.

PCAT not Required

The PCAT is not required. If the PCAT (or MCAT) is submitted, it will be considered supplementary information only.

International Applicants and Applicants with Previous Degrees

Please visit the Skaggs School of Pharmacy website (<https://pharmacy.cuanschutz.edu/academics/pharmd/admissions-information/#international>) for more information on Foreign Transcripts, International Applicants, and Applicants with previous degrees.

Computer requirements for PharmD students

Degree Requirements

The minimum professional GPA required of all pharmacy students for graduation is 2.0 (C) based upon all didactic coursework in the

program. A passing grade is required for all advanced pharmacy practice experiences in the P4 year.

Year 1

Fall		Hours
PHRD 5020	Rx Essentials: Introduction to Calculations and Medical Terminology	1
PHRD 5025	Applied Biological Chemistry	2
PHRD 5055	Pharmacy Practice Fundamentals & Drug Information	4
PHRD 5925	Pharmaceutics	4
PHRD 5075	Self-Care and Nonprescription Medications	4
Hours		15

Spring

PHRD 5010	IPPE Community	2
PHRD 5920	Medicinal Chemistry	3
PHRD 5935	Pharmacology & Toxicology	4
PHRD 5965	Patient-Centered Communication	4
PHRD 5985	Pharmacotherapy 1	4
IPCP 5000	Interprofessional Collaborative Practice	1
Hours		18

Year 2

Fall		
PHRD 6015	Clinical Pharmacokinetics	3
PHRD 6065	Evidence-based Medicine & Literature Evaluation	3
PHRD 6085	Pharmacotherapy 2	5
PHRD 6095	Pharmacotherapy 3	4
IPHE 6000	IPE Healthcare Ethics & Health Equity	1
Hours		16

Spring

PHRD 6910	IPPE Health System	2
PHRD 6945	Public Health & Health Outcomes	3
PHRD 6965	Clinical Problem Solving Skills	2
PHRD 6985	Pharmacotherapy 4	5
PHRD 6995	Pharmacotherapy 5	4
Hours		16

Year 3

Fall		
PHRD 7015	Seminar Research	1
PHRD 7025	Pharmacogenomics	2
PHRD 7055	Pharmacy Management	2
PHRD 7085	Pharmacotherapy 6	4
PHRD 7095	Pharmacotherapy 7	3
Hours		12

Spring

PHRD 7905	Advanced IPPE	6
PHRD 7945	Pharmacy Law and Regulatory Standards	3
PHRD 7995	Clinical Capstone	6

You are required to take at least one of the below elective courses

PHRD 7830	Infectious Diseases Elective	2
PHRD 7835	Advanced Cardiovascular Pharmacotherapy	2

PHRD 7850	Geriatric Pharmacy Elective	2
PHRD 7882	Drugs of Abuse	2
PHRD 7885	Acute Care Pharmacotherapy	2
PHRD 7890	Advanced Oncology Pharmacy	2
Hours		27

Year 4**Summer**

During your P4 year you must complete 7 rotations across the 3 semesters. Three rotations are required for PHRD 8055 and two rotations are required for PHRD 8085. The other courses require one rotation.

PHRD 8055	AdvPharPracExp - Elective	6
PHRD 8065	AdvPharPracExp - Ambulatory Care	6
PHRD 8075	AdvPharPracExp - Community	6
PHRD 8085	AdvPharPracExp - Hospital/Health-System Pharmacy	6
Hours		24
Total Hours		128

Choose 4 credits from the following elective courses. These are normally taken in the P2 year or P3 fall semester. Please note that actual offering may vary; contact the program to verify specific courses and registration restrictions.

Code	Title	Hours
Electives		
PHRD 7808	Introduction to the Pharmaceutical Industry	2
PHRD 7810	Applied Pharmaceutical Outcomes Research Methods	2
PHRD 7812	Seminar in Pharmaceutical Sciences	2
PHRD 7815	Physical Assessment/Examination in Pharmacy	2
PHRD 7828	Advanced Diabetes Management	2
PHRD 7842	Medical Use of Cannabis	2
PHRD 7844	Special Topics in Compounding	2
PHRD 7857	Compounding Pharmacy Elective	2
PHRD 7860	Special Topics in Integrated Health & Medicine	2
PHRD 7870	Pediatric Pharm Practice	2
PHRD 7895	Beginning Medical Spanish	2
PHRD 7896	Intermediate Med Spanish	2

PharmD Graduation Information

Graduation Requirements

- Be a registered as a pharmacy intern in good standing
- Earn a minimum GPA of 2.0 based on all didactic coursework
- Pass all core courses. Complete a minimum of 8 elective credit hours, in 4 different courses, of which 2 credit hours must be "P3 only" electives offered in P3 Spring Semester.
- Complete all IPPEs and APPEs with a grade of C or better
- Complete all Co-Curriculum requirements
- Complete the APhA pharmacy based immunization certificate program
- Maintain good professional conduct, meeting the technical standards of the program
- Owe no outstanding fees

Graduation Ceremony Information

The commencement ceremony that includes all schools is held in the quadrangle at the Anschutz Medical Campus. A separate, smaller convocation ceremony for CU Pharmacy graduates and their families follows in the Library Commons. Information regarding cap and gown rentals, ordering of announcements, and schedules will be distributed during the spring as the graduation date approaches.

Applying for the NAPLEX

Preparing to register and sit for the NAPLEX

Before you get started, download the NAPLEX/MPJE Registration Bulletin (<https://nabp.pharmacy/programs/examinations/naplex/>). It contains everything you need to know about the exam, such as:

- The registration process
- Testing appointment instructions
- What you'll see on the exams
- How to get your score report

Be sure to download the Registration Bulletin only from this website (<https://nabp.pharmacy/programs/examinations/naplex/>) to get the most accurate, updated information about the NAPLEX. NABP is aware of some websites that are posting fake, outdated, or incorrect registration bulletins.

Register for the NAPLEX

Ready to register for the test? Start out by logging into your NABP e-Profile to register online for the examination. The board of pharmacy in the state for which you are seeking licensure will then determine your eligibility to take the NAPLEX based upon the information you provided in your record. Check with your board of pharmacy (<https://nabp.pharmacy/about/boards-of-pharmacy/>) to make sure you meet their requirements. If you plan to seek licensure in multiple states, don't forget to utilize the Score Transfer (<http://nabp.pharmacy/programs/naplex/score-transfers/>) option.

When you log into your e-Profile, be sure to check that the name in your e-Profile matches the printed name on both the primary and secondary forms of ID that you will bring to the test center to ensure that you are not turned away on the day of the test. See the Important Test Day Information section below or the NAPLEX/MPJE Registration Bulletin for more information.

Military Discount

NABP offers one-time discounts for military members and their spouses. Active military members, reserves, and veterans will be reimbursed for 100% of the registration fee, and their spouses will be reimbursed for 50% of the fee. Reimbursement of examination registration fees apply to a single attempt on the NAPLEX. Fees for repeat attempts will not be reimbursed. To learn more, contact Customer Service (<https://nabp.pharmacy/about/contact/>).

If you are seeking licensure in Colorado, Kentucky, Maine, Michigan, Nebraska, Oregon, Rhode Island, and/or Utah

NABP confirms eligibility to sit for the NAPLEX and MPJE for candidates seeking licensure in the above listed states. If you are seeking licensure for any of these jurisdictions, including via score transfers, you will need to pay an additional non-refundable processing fee of \$85. This fee covers both the NAPLEX and MPJE and is valid for a one-year period starting with the date of the initial application.

If you have not passed your exam within that one-year period, you will forfeit the processing fee and will be required to submit a new processing fee if you wish to still take the exam(s).

If you are a new graduate seeking initial licensure in one of the above listed states, you must have an official transcript sent directly from your pharmacy school to NABP before beginning the NAPLEX/MPJE application process. Candidates applying for licensure in Oregon must also submit an official transcript to the Oregon State Board of Pharmacy. Official transcripts must be in a sealed envelope bearing the school's stamp/seal on the envelope flap. Candidates may request that their school send transcripts electronically to transcripts@nabp.pharmacy (transcripts@nabp.pharmacy).

Licensure and Testing

Information regarding licensure and testing can be found at the Colorado State Board of Pharmacy site (<http://www.dora.state.co.us/pharmacy/>). If you are applying for licensure in another state, you will need to check that specific state's board of pharmacy website for their requirements.

Diploma

Graduating students must apply for their diploma by December of their P4 year. Information will be e-mailed directly to you.

Student Learning Outcomes

MISSION

The purpose of the curriculum is to prepare graduates to be competent, ethical, contemporary and compassionate entry-level pharmacists. They will be committed to active involvement in the advancement of the pharmacy profession and dedicated to fulfilling the public trust by assuming responsibility for optimizing patient care through provision of appropriate drug therapy and by assuring the safe, effective and efficient use of drug products and drug delivery systems.

Patient Centered Care Process

- **Patient Care:** The graduate will provide patient care in cooperation with patients and other members of an inter-professional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, cultural, economic, and professional issues, emerging technologies, and evolving biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences that may impact therapeutic outcomes. Our graduates are experts in the pharmacists' patient care process.
- **Systems Management:** The graduate will manage and use resources of the health care system, in cooperation with patients, other health care providers, and support personnel, to promote health; to provide, assess, and manage safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes. The graduate must demonstrate expertise in informatics.
- **Public Health:** The graduate will promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an inter-professional team of health care professionals.
- **Professionalism and Communication Skills:** The graduate will exhibit effective communication skills, professional behaviors and attitudes that promote successful patient and professional interactions. They must bring to the practice of pharmacy the necessary values,

attitudes, and behaviors to discern and manage ethical and evolving issues of pharmacy practice.

- **Scholarship:** The graduate will exhibit intellectual curiosity by approaching problems from a scholarly perspective, applying scientific principles and methods to identify and solve problems.

Courses

PHRD 5010 - IPPE Community (2 Credits)

This is the first in a series of experiential-based courses, providing 80 hours of community pharmacy practice experience. Students will participate in all facets of community pharmacy practice, with a particular focus on the development of communication and professionalism skills.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PHRD 5020 - Rx Essentials: Introduction to Calculations and Medical Terminology (1 Credit)

This intensive 1-week course is designed to provide PharmD students with a comprehensive review of prerequisite mathematics skills essential for pharmaceutical calculations, along with an introduction to calculations and medical terminology and abbreviations commonly used in pharmacy practice.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

PHRD 5025 - Applied Biological Chemistry (2 Credits)

Course builds upon student knowledge of biochemistry to explore applications of biochemistry to diseases, drug actions, and drug development. Knowledge gained from this course is used as a foundation for understanding the rationale for the therapeutic uses of drugs.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5055 - Pharmacy Practice Fundamentals & Drug Information (4 Credits)

Course provides students with tactics necessary to perform dispensing duties in most pharmacy settings. Fundamentals of the practice of drug information are introduced. Pharmacy practice and drug information fundamentals are presented with the context of the history of pharmacy and contemporary pharmacy practice. Restrictions: Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5075 - Self-Care and Nonprescription Medications (4 Credits)

Course prepares students to be able to 1) collect appropriate patient data to make an assessment for self-care (e.g. nonprescription products), 2) conduct a patient-centered assessment, and 3) design, implement, evaluate and adjust a patient-centered self-care plan. Restriction: Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5920 - Medicinal Chemistry (3 Credits)

This course explores medicinal chemistry concepts using clinically relevant case studies, designed to examine mechanism(s) of drug action, structure-activity relationships, drug metabolism, drug resistance and other concepts related to the pharmacology and clinical use of therapeutic drugs.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 5925 - Pharmaceutics (4 Credits)

Students introduced to biophysical and chemical considerations in development of pharmaceutics and products and compounding various dosage forms, principles of parenteral drug preparation and administrations. Knowledge gained allows students to understand formulation development and optimize dosage forms for individual patients. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5935 - Pharmacology & Toxicology (4 Credits)

Using the nervous systems as a model, the course introduces students to the mechanisms by which drugs produce therapeutic effects and side effects. The mechanisms of drug toxicity and how toxicity can be prevented and treated will be explored. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 5965 - Patient-Centered Communication (4 Credits)

Students develop skills to communicate effectively with patients, caregivers and healthcare providers to facilitate optimal patient outcomes. These courses cover all aspects of professional communication, including gathering, organizing, conveying and documenting patient-related information.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 5985 - Pharmacotherapy 1 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: pulmonology, OBGYN, ED, dermatology ophthalmology, otic diseases. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6015 - Clinical Pharmacokinetics (3 Credits)

The influence of physiological and pathophysiological factors on drug levels is considered. Knowledge gained allows students to calculate appropriate dosing of drugs in patients and anticipate how drug doses should be adjusted in disease and the presence of other drugs. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6065 - Evidence-based Medicine & Literature Evaluation (3 Credits)

An introduction and step-wise approach to evidence-based medicine. Students understand commonly-used statistical tests and evaluate statistical results for statistical versus clinical significance. Students demonstrate by answering short drug information questions, presenting a journal club and writing a drug information paper. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6085 - Pharmacotherapy 2 (5 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Cardiology. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6095 - Pharmacotherapy 3 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: endocrinology, renal. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6910 - IPPE Health System (2 Credits)

This experiential-based course provides 80 hours of health-system pharmacy practice, focusing on the delivery of patient care and systems used to provide care to multiple patients. Course further develops professionalism, communication, and skills needed for advanced experiential training.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PHRD 6945 - Public Health & Health Outcomes (3 Credits)

This course in public health will cover how to use clinical, patient-centered, socioeconomic, and economic research to assess health care interventions. These skills can be used to critically assess health care policy that will affect you as a professional pharmacist. Restriction:

Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6965 - Clinical Problem Solving Skills (2 Credits)

This course builds upon the principles and skills from PHRD 5055/6065 and includes application inside and outside the classroom of drug information, effective search strategies and literature evaluation, critical appraisal of scientific literature, and applying evidence in clinical practice.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6985 - Pharmacotherapy 4 (5 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: infectious diseases. Restriction: Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6995 - Pharmacotherapy 5 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: psychiatry, neurology. Restriction: Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7015 - Seminar Research (1 Credit)

Students will apply their ability to retrieve, evaluate, and utilize professional information in a critical and scientific manner. Students independently determine how to best solve a pharmacy-related question using scientific principles, and present their findings to a large audience. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7025 - Pharmacogenomics (2 Credits)

Course provides students with an understanding of how genetic factors influence drug efficacy. Knowledge gained from this course enhances students' ability to select the most effective therapeutic intervention.

Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7055 - Pharmacy Management (2 Credits)

The course provides an introduction to management in community pharmacy practice, hospital pharmacy management, and other business and management skills needed to be successful in a variety of different practice settings. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7085 - Pharmacotherapy 6 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions.

Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Immunology, gastro intestinal, rheumatology, transplantation, osteoporosis. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7095 - Pharmacotherapy 7 (3 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: oncology.

Department consent required

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7808 - Introduction to the Pharmaceutical Industry (2 Credits)

Course provides a broad background on the pharmaceutical industry. Reviews of major pharmaceutical company functions will be covered, Emphasis will be placed on clinical development and areas of opportunity for those with a pharmacy or pharmaceutical sciences background.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7810 - Applied Pharmaceutical Outcomes Research Methods (2 Credits)

Students completing this course will be able to identify and write a clinical research question; identify variables for analyses; complete intermediate statistical analyses to answer their research question; write-up their study as a scientific manuscript; and present their research orally.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7812 - Seminar in Pharmaceutical Sciences (2 Credits)

Provides practical experience in the evaluation and discussion of research literature. Students will prepare a seminar and participate in scientific discussions. Students who are interested in broadening knowledge in pharmaceutical science, drug delivery, and improving their speaking skills will benefit.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHRD 7815 - Physical Assessment/Examination in Pharmacy (2 Credits)

This course is designed to provide students with functional knowledge and skills in the area of physical assessment and will aid students in enhancing the assessment of disease and drug therapy in a variety of practice settings.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7828 - Advanced Diabetes Management (2 Credits)

This elective focuses on advanced diabetes management and utilization of technology and digital health tools. The course provides learners hands-on, simulated experiences with diabetes technology and digital health tools to successfully optimize diabetes care and make clinical decisions remotely.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7830 - Infectious Diseases Elective (2 Credits)

This course will address the pharmacology and appropriate clinical use of agents used in the treatment and management of selected infectious diseases. The course will also focus on pharmacodynamics of antimicrobial agents, antibiotic stewardship, antibiotic resistance, and statistics.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7835 - Advanced Cardiovascular Pharmacotherapy (2 Credits)

The purpose of this course is to provide a more comprehensive and in-depth background in cardiovascular pharmacotherapy for students interested in, or planning to practice in, settings where the care of patients with cardiovascular disease is emphasized.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHRD 7842 - Medical Use of Cannabis (2 Credits)

Course will address the pharmacology and appropriate medical use of cannabis used in the treatment and management of selected disease states. Course will also focus on the pharmacokinetics, pharmacodynamics, legal aspects, special populations and patient information (safety) of cannabis.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7844 - Special Topics in Compounding (2 Credits)

Course will provide students with an understanding of principles and practices involved in clinical aspects of pharmacy compounding. Students will utilize readings, case studies, class discussion, outside-class assignments, and written evaluation to learn how pharmacy compounding may solve medication-related problems. Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7850 - Geriatric Pharmacy Elective (2 Credits)

This course is intended to provide the student with an advanced understanding of pharmacotherapy in older adults as well as common medical, psychological, and social issues encountered when caring for older adults. Prerequisite: P3 status.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7855 - Independent Study (1-4 Credits)

Independent Study Prerequisite: P3 status. Per Department Chair approval.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring.

PHRD 7856 - Independent Study (2 Credits)

Prerequisites: P3 status. Per Curriculum Committee approval.

Grading Basis: Satisfactory/Unsatisfactory

Typically Offered: Fall, Spring.

PHRD 7857 - Compounding Pharmacy Elective (2 Credits)

An elective course to offer compounding skills for pharmacy students.

Prereq: P1-P3 status.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7860 - Special Topics in Integrated Health & Medicine (2 Credits)

This course is designed to develop a broad knowledge base in the field of Integrated Health and Medicine. This course will cover common vitamins and minerals, herbal products, and bio-identical hormones, and core domains and discussions of regulatory issues. Prerequisite: P1-P3 status.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHRD 7870 - Pediatric Pharm Practice (2 Credits)

This course will be offered to students interested in developing and fostering their knowledge and assessment of childhood diseases and pharmacotherapy. Clinical pharmacy specialists and staff from the Children's Hospital of Denver will teach this course. Prerequisite: P3 status.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7882 - Drugs of Abuse (2 Credits)

Course will explain pharmacological, physical, and psychological effects of drugs of abuse on the body relevant to real-world pharmacy practice. Course aims to develop clinical skills for use in emergency situations, proper prescribing of drugs of abuse, and understanding of the process of addiction/abuse in order to identify and mitigate potential harm.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7885 - Acute Care Pharmacotherapy (2 Credits)

Pharmacology and appropriate clinical use of agents used in the treatment of selected acute disorders found in hospitalized patients. The course will also focus on the comprehensive nature of these acute disorders. Recent advances in pharmacotherapy, patient-specific management strategies, and controversial issues will be included and emphasized. Prerequisite: P3 status.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7890 - Advanced Oncology Pharmacy (2 Credits)

Students will learn pathophysiology and treatment of solid organ and hematologic malignancies, practical use of antineoplastic agents, and provision of supportive care for patients of cancer. Prerequisite: PHRD 6750.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7895 - Beginning Medical Spanish (2 Credits)

This Beginning Medical Spanish course, tailored for pharmacy students, is designed to allow students to become comfortable with conversational Spanish and medical vocabulary in various pharmaceutical contexts. Language learning is both academic and experiential. Prerequisite: P3 status.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHRD 7896 - Intermediate Med Spanish (2 Credits)

This intermediate medical Spanish course, tailored for pharmacy students, is designed to allow students to become comfortable with intermediate conversational Spanish and medical vocabulary in various pharmaceutical context. Language learning is both academic and experiential. Prerequisite: P3 status.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PHRD 7905 - Advanced IPPE (6 Credits)

Students are placed in a 6-week, full-time (40 hours per week) patient care experience in which they can begin to apply their didactic knowledge. In this advanced IPPE students demonstrate competency to meet pre-APPE core performance domains and abilities. Requirements: Department consent required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7945 - Pharmacy Law and Regulatory Standards (3 Credits)

Course explores pharmacy laws and regulations. Students are able to carry out their intern duties in accordance with professional guidelines and regulatory standards. The course also explores how to apply ethical and professional principles in various healthcare settings.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PHRD 7995 - Clinical Capstone (6 Credits)

Course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning, and holding students accountable for prior learning in an integrated manner using complex patient scenarios. Requirements: Department Consent required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 8055 - AdvPharPracExp - Elective (6 Credits)

Six week rotation; 40 hrs weekly. This experience will take place in various practice settings. Students may participate in various activities that focus on medication-related problems dealing with various populations, with or without direct patient contact. Requirement: Department consent required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PHRD 8056 - APPE Elective International (6 Credits)

Six week rotation; 40 hrs weekly. This pharmacy practice experience is an opportunity for students to train in various international clinical practice environments.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

PHRD 8065 - AdvPharPracExp - Ambulatory Care (6 Credits)

Six week rotation; 40 hrs weekly. This experience will take place in an ambulatory care, multidisciplinary practice setting. Practice sites may include hospital-based clinics, physician group practices, and community or public health clinics that provide health care directly to patients.

Requirement: Department consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PHRD 8075 - AdvPharPracExp - Community (6 Credits)

Six week rotation; 40 hrs weekly. This experience will take place in a community pharmacy practice setting. Practice sites include independent, large chain or retail pharmacies that provide a variety of services, including administration of immunizations and health/wellness screenings. Requirement: Department Consent required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PHRD 8085 - AdvPharPracExp - Hospital/Health-System Pharmacy (6 Credits)

Six week rotation; 40 hrs weekly. This experience will take place in an inpatient practice setting. Students will be exposed to adult patients with a variety of disease states, and participate in other institutional activities related to clinical pharmacy services. Requirement: Department consent required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

Student Policies

For policy information, please visit the PharmD Student Policies page (<https://pharmacy.cuanschutz.edu/current-students/on-campus-pharmd-students/pharmd-resources/#policies>).

Pharmacy Dual Degree Programs

Set yourself apart by earning a dual degree. Students in the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences entry level PharmD program are welcome to apply to also pursue a Masters of Business Administration (MBA) or a Masters of Public Health (MPH) degree in addition to their PharmD degree.

- PharmD/MBA Dual Degree (p. 422)
- PharmD/MPH Dual Degree (p. 422)

PharmD/MBA Dual Degree Overview

No matter what path you choose with pharmacy, a PharmD/MBA degree will help you understand the field of healthcare as it becomes more complex and focused on cost-effectiveness, finance, communication, and strategic planning. Earn your MBA through the CU Denver Business School.

Admissions Requirements

A student **can apply in the second (P2) or fourth (P4) year** of pharmacy school. A student applying in the P2 year will take a one year leave of absence to complete coursework at the University of Colorado Denver Business School, and then re-enter the PharmD program as a P3 student. A student applying in the P4 year will engage in coursework for their MBA after completing their PharmD degree.

To be considered for these programs, a student must:

1. Have a bachelor's degree (Note that CU Pharmacy students are able to obtain a bachelor's degree if they did not earn one prior to acceptance to the PharmD Program. For information regarding this program, please go to the following URL: BSMS Application (<https://web.cvent.com/event/7246c593-4d11-4e7b-a51d-ea2f1cb77823/summary/>))
2. Have a cumulative GPA (including required and elective coursework) of at least 3.0 in the courses of the pharmacy program at the end of the first professional year (for P2 applicant) or third professional (P3) year (for P4 applicant)
3. Be in good academic standing and have no professional or conduct violations

In the application process, a student will select a type of MBA. Please note that the MBA Health Administration (MBAH) is highly competitive and has limited student places.

An application to the PharmD/MBA program includes:

- Submitting an email (bschool.admissions@ucdenver.edu) to the CU Denver Business School indicating that you are applying to the PharmD/MBA dual degree
- Application fee
- On-line application (<https://pharmacy.cuanschutz.edu/academics/colleges/business/Documents/admissions/GraduateApplicationPacket-Domestic.pdf>) for graduate admission
- In-state tuition classification form
- Essay question responses
- Resume
- PCAT, MCAT, GRE scores (or equivalent)

- Official copies of undergraduate and professional program transcripts
- Two current letters of recommendation
- A letter from the CU Pharmacy Office of Student Services (OSS) (<http://pharmacy.cuanschutz.edu/about-us/our-people/offices/#oss>) indicating that you are in good standing (academic professional conduct)

After receiving 12 credits of PharmD coursework towards the dual degree program, a student will be required to complete 35 credits of MBA coursework. If interested, please email Cindy OBryant (cindy.obryant@cuanschutz.edu).

PharmD/MPH Dual Degree Overview

The role of the pharmacist continues to expand and pharmacists are now an integral part of the healthcare team. The PharmD/MPH degree is in response to that expanding role. It is offered in partnership with the Colorado School of Public Health.

University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences entry-level PharmD students are welcome to apply to pursue a Master of Public Health (MPH) degree in addition to their PharmD degree. A student **can apply in the second (P2) or fourth (P4) year** of pharmacy school. A student applying in the P2 year will take a one year leave of absence to complete coursework at the Colorado School of Public Health, and then re-enter the PharmD program as a P3 student. A student applying in the P4 year will engage in coursework for their MPH after completing their PharmD degree.

To learn more about this dual degree, please click **here (p. 141)** to view the full information within the **Colorado School of Public Health** portion of the academic catalog.

Admissions Requirements

A student **can apply in the second (P2) or fourth (P4) year** of pharmacy school. A student applying in the P2 year will take a one year leave of absence to complete coursework at the Colorado School of Public Health, and then re-enter the PharmD program as a P3 student. A student applying in the P4 year will engage in coursework for their MPH after completing their PharmD degree.

To be considered for this program, a student must:

1. Have a bachelor's degree (Note that SSPPS PharmD students are able to obtain a bachelor's degree if they did not earn one prior to acceptance to the Pharm. D. Program. For information regarding this program, please go to the following URL: BSMS Application (<http://www.cvent.com/events/bs-ms-application/event-summary-8a91c230664b454f5ab6e5fac2602a.aspx>))
2. Have a cumulative GPA (including required and elective coursework) of at least 3.0 in the courses of the pharmacy program at the end of the first professional year (for P2 applicant) or third professional (P3) year (for P4 applicant)
3. Be in good academic standing and have no professional or conduct violations at the SSPPS

In the application process, a student will select an area of focus for the MPH.

The deadline for applications is in January, check back here for deadline updates.

An application to the PharmD/MPH program includes:

- Completion of an online program application - contact admissions.CSPH@ucdenver.edu to apply
- Application fee
- A statement of interest
- Official copies of undergraduate and professional program transcripts
- PCAT, MCAT, GRE scores (or equivalent, see below)
- Curriculum vitae or resume
- Two current letters of recommendation specifically related to the student's interest and capacity for success in the PharmD/MPH program
- A letter from the CU Pharmacy Office of Student Services (OSS) (<http://pharmacy.cuanschutz.edu/about-us/our-people/offices/#oss>) indicating that the student is in good standing (academic and professional conduct)

After receiving 9 credits of PharmD coursework towards the dual degree program, a student will be required to complete 36 credits of MPH coursework. If interested, please email Cindy OBryant (cindy.obryant@cuanschutz.edu).

Pharmacy Fellowships

Highly specialized pharmacy research that makes a difference: Our fellowship helps pharmacy professionals reach new levels of expertise in neurology. By training under top experts, our fellows leave our program ready to make advances in the field.

Join us for a rare experience. Our Clinical Neurology Research Fellowship is the only fellowship in the United States that specifically focuses on research and clinical practice in the field of neurology.

Please visit the Clinical Neurology Research Fellowship website (<https://pharmacy.cuanschutz.edu/academics/fellowships/clinical-neurology-research/>) for more information.

online virtual learning environment that offers flexible application-based approaches.

To learn more about the interprofessional graduate **Certificate in Palliative Care**, please click here (p. 210) to view the information within the Graduate School portion of the academic catalog.

Pharmacy Graduate Certificates

From palliative care to cannabis science and medicine, our school is home to certificate programs that can help you advance your career. We offer two certificate programs: Cannabis Science and Medicine, and Palliative Care. Join our experts to grow your skills as a scientist and healthcare provider.

- Cannabis Science and Medicine (Certificate) (p. 424)
- Palliative Care (Certificate) (p. 424)

Cannabis Science and Medicine (Certificate)

The University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences is a leader in the scientific investigation, quality assurance, and clinical evaluation of plant-based medicines. Our Cannabis Science and Medicine Graduate Certificate extends that expertise with a 9-credit hour graduate certificate program. The certificate provides an in-depth understanding of the pharmacology and therapeutics of cannabis. Ideal candidates for this offering include healthcare professionals who want to optimize overall clinical outcomes and scientists who want to enhance their knowledge of cannabis chemistry, analysis, and actions.

To learn more about the **Cannabis Science & Medicine certificate**, please click here (p. 413) to view the information within the Skaggs School of Pharmacy & Pharmaceutical Sciences Online Pharmacy Programs portion of the academic catalog.

Palliative Care (Certificate)

Palliative Care Certificate

The Palliative Care program is a collaborative, interprofessional master's degree and certificate program, pooling expert faculty and resources from CU's School of Medicine, College of Nursing, Skaggs School of Pharmacy, and the Graduate School.

The Interprofessional Graduate Certificate in Palliative Care along with the Master of Science Degree in Palliative Care aim to ease suffering for those patients and families living with serious illness through exemplary palliative care education.

These programs develop Palliative Care Community Specialists through innovative educational pedagogies designed to facilitate learning for healthcare providers and allied health professionals in up-to-date, evidence-based, interdisciplinary palliative care concepts using an

Pharmacy Master of Science (MS) Programs

Looking to learn from top scientists and pharmacists while advancing your career? Our Master of Science degree options can help set you apart. We offer pathways in pharmaceutical sciences and palliative care. Each program is designed for a distinct population of students interested in expanding research or clinical practice in the field of pharmacy.

The following Master of Science programs are offered through Skaggs School of Pharmacy:

- Palliative Care (MS) (p. 425)
- Pharmaceutical Sciences (MS) (p. 425)

Palliative Care (MS)

The Palliative Care Program is a collaborative, interprofessional degree that pools expert faculty from CU's School of Medicine, College of Nursing, Skaggs School of Pharmacy, and Graduate School.

The Master of Science Degree in Palliative Care along with the Interprofessional Graduate Certificate in Palliative Care aim to ease suffering worldwide for those patients and families living with serious illness through exemplary palliative care education.

These programs develop Palliative Care Community Specialists through innovative educational pedagogies designed to facilitate learning for healthcare providers and allied health professionals in up-to-date, evidence-based, interdisciplinary palliative care concepts using an online virtual learning environment that offers flexible application-based approaches.

To learn more about the interprofessional **Master of Science in Palliative Care**, please click here (p. 243) to view the information within the Graduate School portion of the academic catalog.

Pharmaceutical Sciences (MS)

Overview

The multidisciplinary field of pharmaceutical sciences has seen rapid advances that are critical to the discovery and development of drugs for chronic diseases such as cancer and diabetes, and emerging threats such as new pathogens and drug resistance. By training with our experts, you'll be on the best track to keep up with the constantly evolving field.

The Master of Science Degree in Pharmaceutical Sciences has five different tracks to choose from. A minimum of 30 credit hours is required. A short description of each track is listed below.

CANNABIS SCIENCE and MEDICINE TRACK (CSM)

Prerequisites

B.S. or B.A. in a biological, chemical, or health/medical science

Be a physician, nurse, pharmacist, physician assistant, or in a public health capacity

Or

Be a member of other allied health professions (the program director will individually counsel prospective students on any recommended prerequisite coursework)

Self-directed learning will be complemented by online, synchronous live, case-based discussions and/or activities

guided by clinical practice experts, clinical researchers, medicinal plant chemists and pharmacologists, and legal and regulatory leaders. The only on-campus course is a 1 credit hour laboratory workshop on cannabis extraction and analytical methods that accompanies the 2 credit hour online course. Students unable to travel to Colorado for the 1 credit hour laboratory component can select an additional elective course.

CLINICAL PHARMACOKINETICS and PHARMACODYNAMICS TRACK (CPK)

An understanding of PK and PD is thus critical to every stage of drug development, from pre-clinical research through human clinical trials. Students trained in this track employ equations and models to describe drug concentrations in plasma, blood and other biological samples. The advent of new biotechnology products, combination drug products, drug delivery platforms, and nanotechnology formulations place individuals with PK-PD expertise in high demand for pharmaceutical and medical companies.

DRUG DISCOVERY TRACK (DGD)

This track offers you an opportunity to gain insight and experience in the drug discovery process. This includes computational design of molecules, high throughput/high content screening, structure-activity relationships, the selection of appropriate biomarkers for drug action, targeting drugs for personalized therapies, and the application of bioinformatics in the overall drug discovery process. Students trained in these approaches are well-positioned for jobs in the pharmaceutical industry, academia, and governmental regulatory bodies.

MOLECULAR and SYSTEMS TOXICOLOGY TRACK (MST)

This track affords you the opportunity to learn about systems toxicology and receive the training necessary to succeed in a changing research environment that is rapidly becoming focused on big data. Students graduating from this track will be sought after by employers in industry, biotechnology and government.

PHARMACEUTICAL BIOTECHNOLOGY and DRUG DELIVERY TRACK (PBT)

This track will provide you with the fundamental knowledge required for the synthesis, characterization, formulation, stabilization and delivery of these drugs. By possessing a sound understanding of how to successfully develop and deliver a biotechnology drug, students graduating from this track will be recruited by the pharmaceutical industry or new start-up biotechnology companies.

Admission Requirements

Applications for all master's and doctoral programs are submitted electronically through the Graduate School of the University of Colorado Denver. After signing up for an account, select 'Master's' under the 'Academic Interests' menu and scroll down to 'Skaggs School of Pharmacy and Pharmaceutical Sciences' and select "MS in Pharmaceutical Sciences."

Application requirements are:

- a completed Graduate School application
- a baccalaureate degree (or equivalent) in biology, chemistry, or a related field from an accredited college or university with a minimum GPA of 3.0
- a 500- to 1,000-word written statement expressing interest or demonstrated experience, if applicable, in the field of pharmaceutical sciences and indication of the applicant's intended specialty track

(i.e., cannabis science & medicine, clinical pharmacokinetics & pharmacodynamics, drug discovery, molecular & systems toxicology, or pharmaceutical biotechnology & drug delivery)

- three (3) references from persons familiar with the applicant's prior academic performance, potential, character, and suitability for graduate study (using a standardized template provided to prospective students)
- Additionally:
- the GRE (Graduate Record Examination) is **not** required
- the TOEFL or IELTS is required of applicants for whom English is not their first language
- **Applications will not be reviewed until all required materials have been received.**

Curriculum

The Master of Science Degree in Pharmaceutical Sciences has five different tracks from which to choose. A minimum of 30 credit hours is required, of which non-thesis students complete a 3-credit capstone literature review (PHSC 6990), and thesis students complete two-to-three semesters of thesis research (PHSC 6950) for 6 total credits.

CANNABIS SCIENCE & MEDICINE TRACK

Year 1

Fall		Hours
PHSC 7310	Fundamentals of Pharmaceutical Sciences I	3
PHSC 7400	Ethical Issues in Toxicology & Pharmaceutical Sciences	1
PHSC 7565	Applied Statistics for Pharm Science and Toxicology	2
PHSC 7700	Cannabis Pharmacology & Physiology	3
Hours		9

Spring

PHSC 7315	Fundamentals of Pharmaceutical Sciences II	3
PHSC 6720	Cannabis Therapeutics: Pain, Oncology, At-Risk Populations	2
PHSC 7710	Chemical Analysis of Cannabis	3
PHSC 7711	Chemical Analysis of Cannabis Laboratory	1
Note: Fully-remote students may replace the Chemical Analysis of Cannabis Laboratory with an additional elective credit.		
PHSC 7705	Scientific Writing in Cannabis Science & Medicine	1
Hours		10

Year 2

Fall		Hours
PHSC 6710	Cannabis Therapeutics: Neurology & Mental Health	2
PHSC 7720	Seminar in Cannabis Science & Medicine	2
Hours		4

Spring

PHSC 6990	Capstone Project in Pharmaceutical Sciences	3
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Students may alternatively complete a year-long research thesis (PHSC 6950 - 6 credits total), which meets the Capstone Project requirement.

PHSC 6730	Legal & Regulatory Issues in Cannabis Medicine	2
PHSC 7720	Seminar in Cannabis Science & Medicine	2
Hours		7
Total Hours		30

CLINICAL PHARMACOKINETICS & PHARMACODYNAMICS TRACK

Year 1

Fall		Hours
PHSC 7310	Fundamentals of Pharmaceutical Sciences I	3
PHSC 7400	Ethical Issues in Toxicology & Pharmaceutical Sciences	1
PHSC 7565	Applied Statistics for Pharm Science and Toxicology	2
PHSC 6015	Clinical Pharmacokinetics	3
Hours		9

Spring

PHSC 7315	Fundamentals of Pharmaceutical Sciences II	3
PHSC 7665	Pharmacokinetic Principles & Applications	3
PHSC 7326	Seminar in Clinical Pharmacokinetics & Pharmacodynamics	2
Hours		8

Year 2

Fall		Hours
PHSC 7330	Development of Drugs and Biologics	3
PHSC 7667	Population Pharmacokinetic Modeling	3
PHSC 7326	Seminar in Clinical Pharmacokinetics & Pharmacodynamics	2
Hours		8

Spring

PHSC 6990	Capstone Project in Pharmaceutical Sciences	3
PHSC 7345	Nanotechnology & Drug Delivery	2
Students may alternatively complete a year-long research thesis (PHSC 6950 - 6 credits total), which meets the Capstone Project requirement.		
Hours		5

Total Hours		30
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DRUG DISCOVERY TRACK

Year 1

Fall		Hours
PHSC 7310	Fundamentals of Pharmaceutical Sciences I	3
PHSC 7400	Ethical Issues in Toxicology & Pharmaceutical Sciences	1
PHSC 7565	Applied Statistics for Pharm Science and Toxicology	2

PHSC 6015	Clinical Pharmacokinetics	3
Hours		9
Spring		
PHSC 7315	Fundamentals of Pharmaceutical Sciences II	3
PHSC 5920	Medicinal Chemistry	3
PHSC 7568	Seminar in the Pharmaceutical Sciences	2
Hours		8
Year 2		
Fall		
PHSC 7328	Computational Design in Drug Discovery	3
PHSC 7568	Seminar in the Pharmaceutical Sciences	2
PHSC 7330	Development of Drugs and Biologics	3
Hours		8
Spring		
PHSC 6990	Capstone Project in Pharmaceutical Sciences	3
PHSC 7345	Nanotechnology & Drug Delivery	2
Students may alternatively complete a year-long research thesis (PHSC 6950 - 6 credits total), which meets the Capstone Project requirement.		
Hours		5
Total Hours		30

MOLECULAR & SYSTEMS TOXICOLOGY TRACK

Year 1		
Fall		
TXCL 7310	Fundamentals of Pharmaceutical Sciences I	3
TXCL 7400	Ethical Issues in Toxicology and Pharmaceutical Sciences	1
TXCL 7565	Applied Statistics for Pharm Science and Toxicology	2
TXCL 7322	Molecular and Target Organ Toxicology	3
Hours		9
Spring		
TXCL 7315	Fundamentals of Pharmaceutical Sciences II	3
TXCL 7323	Environmental and Target Organ Toxicology	3
PHSC 5920	Medicinal Chemistry	3
TXCL 7321	Careers in Toxicology	1
Hours		10
Year 2		
Fall		
TXCL 7330	Development of Drugs and Biologics	3
PHSC 6015	Clinical Pharmacokinetics	3
TXCL 7325	Current Topics in Toxicology Research	1
Hours		7
Spring		
PHSC 6990	Capstone Project in Pharmaceutical Sciences	3
Students may alternatively complete a year-long research thesis (PHSC 6950 - 6 credits total), which meets the Capstone Project requirement.		

TXCL 7325	Current Topics in Toxicology Research	1
Hours		4
Total Hours		30

PHARMACEUTICAL BIOTECHNOLOGY & DRUG DELIVERY TRACK

Year 1		
Fall		
PHSC 7310	Fundamentals of Pharmaceutical Sciences I	3
PHSC 7400	Ethical Issues in Toxicology & Pharmaceutical Sciences	1
PHSC 7565	Applied Statistics for Pharm Science and Toxicology	2
PHSC 7653	Protein Formulation	2
Hours		8
Spring		
PHSC 7315	Fundamentals of Pharmaceutical Sciences II	3
PHSC 7568	Seminar in the Pharmaceutical Sciences	2
PHSC 7660	Liposome-based Drug Delivery	2
Choose either PHSC 7608 or PHSC 7609		
PHSC 7608	Molecular Interactions	3
PHSC 7609	Biophysics & Spectroscopy	1.5
PHSC 7619	Biophysics and Spectroscopy Lab	1
Hours		12.5
Year 2		
Fall		
PHSC 7330	Development of Drugs and Biologics	3
PHSC 7568	Seminar in the Pharmaceutical Sciences	2
Hours		5
Spring		
PHSC 6990	Capstone Project in Pharmaceutical Sciences	3
PHSC 7345	Nanotechnology & Drug Delivery	2
Students may alternatively complete a year-long research thesis (PHSC 6950 - 6 credits total), which meets the Capstone Project requirement.		
Hours		5
Total Hours		30.5

ELECTIVES

Code	Title	Hours
Students may choose electives from specialty tracks other than their own or from the list of other approved electives below. The Program Director meets with each student prior to the beginning of each semester to devise and refine a personalized curriculum that best suits each student's needs.		
PHSC 7025	Pharmacogenomics	2
TXCL 7353	Immunology: Immunotoxicology and Immunopharmacology	2
PHSC 7660	Liposome-based Drug Delivery	2
PHSC 7345	Nanotechnology & Drug Delivery	2
PHSC 7653	Protein Formulation	2

PHSC 7658	Advanced Topics in Pharmaceutical Sciences	1-5
TXCL 7750	Proteomics & Metabolomics for Biomarker Discovery	3
TXCL 7751	Neurotoxicology	2
BIOS 6648	Design and Conduct of Clinical Research	3
PMHW 6621	Mental Health and Wellbeing Promotion	3
CBHS 6610	Social and Behavioral Factors and Health	3
HSMP 6605	Health Policy	3
PMHW 6601	Mental Health	3
PMHW 6620	Mental Health Systems and Policy	3
PMHW 6622	Opioid Use, Overdose and Public Health	1
PMHW 6625	Substance Use: A Public Health Perspective	3

Pharmacy Residencies

We offer a community-based post-graduate year 1 (PGY1) program, and six different year 2 (PGY2) residency programs. Our residencies are accredited by the American Society of Health-Systems Pharmacists (ASHP). Residency programs build on Doctor of Pharmacy education, with the PGY2 programs building on PGY1 training, to contribute to the clinical development of our residents.

Please visit the Skaggs School of Pharmacy Residencies website (<https://pharmacy.cuanschutz.edu/academics/residencies/>) for more information.

School of Pharmacy PhD Programs

Breakthrough research. Groundbreaking discoveries. They happen every day at CU Pharmacy. By training with world-class researchers, you'll be positioned to enter highly specialized fields and make discoveries of your own. Our graduates have gone on to work in industry jobs, at government agencies and for other top universities. Come join us and continue to advance our field.

We offer PhD programs specializing in pharmaceutical sciences, pharmaceutical outcomes research and molecular toxicology.

The following PhD programs are offered through Skaggs School of Pharmacy:

- Pharmaceutical Outcomes Research (PhD) (p. 430)
- Pharmaceutical Sciences (PhD) (p. 434)
- Toxicology (PhD) (p. 435)

Pharmaceutical Outcomes Research (PhD)

Overview

Who decides if a drug is worth producing? Which drugs should insurance companies cover? How do we determine who gets access to lifesaving therapies? Earn your PhD in Pharmaceutical Outcomes Research and join us as we lead the way in evaluating health care interventions and their economic, clinical, and humanistic outcomes.

Admissions Requirements

The traditional requirements for admission to the graduate program in pharmaceutical sciences include:

- BA or BS from an accredited institution
- Academic record
 - Satisfying the minimum admission requirements established by the CU Graduate School
 - Normally admission dependent on GPA of 3.0 or better
 - GPA <3.0 may be considered individually on a provisional basis
 - GRE is not required

If you do not have a degree from a U.S. or Canadian institution, the International Affairs Office will evaluate the transcripts to determine G.P.A. equivalency. A transcript evaluation from an agency such as World Education Services is not required. If an applicant would like to include a previously completed evaluation with their application as a courtesy, they are welcome to do so.

The admission deadline for completed applications is December 1.

Application Information

Given that admission to the program is very competitive, it is impossible to evaluate your qualifications for admission (test scores, grades) until the selection committee assesses the entire applicant pool. If you are selected for an interview, we do our best to pay your travel expenses to and from campus. The initial process involves submitting an online application to graduate school and can be initiated by following the link on the main page.

We do not have the resources to cover international travel expenses for applicants who live outside North America (regardless of nationality).

Curriculum Requirements

Code	Title	Hours
Required Courses		
Required Core Course Credits: 36		
BIOS 6611	Biostatistical Methods I	3
BIOS 6612	Biostatistical Methods II	3
EPID 6630	Epidemiology	3
EPID 6626	Research Methods in Epidemiology	3
HSMP 6601	Introduction to HSMP	3
HSMP 6609	Cost Benefit and Effectiveness in Health	2
HSMP 7609	Methods in Health Services Research II	3
or EPID 6631	Analytical Epidemiology	
PHOR 7611	Applied Cost-Effectiveness Modeling	4
PHOR 7613	Pharmaceutical Economics	3

PHOR 7615	Pharmacoepidemiology	2-4
CLSC 7150	Ethics and Responsible Conduct of Research	1
PHOR 7570	Special Topics in Outcomes Research	1
PHOR 8990	Doctoral Thesis	1-10
Total Hours		32-43

Code	Title	Hours
Approved Elective Courses		
BIOS 6603	Statistical Computing - SAS	1
BIOS 6643	Analysis of Longitudinal Data	3
BIOS 6646	Survival Analysis	3
BIOS 6648	Design and Conduct of Clinical Research	3
BIOS 6649	Clinical Trials: Statistical Design and Monitoring	3
BIOS 6680	Data Management Using SAS	3
BIOS 7712	Statistical Methods for Correlated Data	1
BIOS 7713	Statistical Methods for Missing Data	1-2
CBHS 6620	Survey Research	3
ECON 5813	Econometrics I	3
ECON 5823	Econometrics II	3
HSMP 6604	Health Care Economics	3
EPID 6631	Analytical Epidemiology	3
EPID 6633	Clinical Preventive Services: Evidence-Based Practice	1
EPID 6646	Methods for Conducting Systemic Review and Meta-Analysis	2
EPID 6635	Infectious Disease Epidemiology	2
EPID 6636	Chronic Disease Epidemiology	3
EPID 6638	Global Cardiovascular Epidemiology	2
EPID 7605	Research Methods with Secondary Data Sources	3
HSMP 7607	Methods in Health Services Research I	3

Courses

BIOS 6603 - Statistical Computing - SAS (1 Credit)
This course will emphasize statistical analysis and data interpretation through use of the SAS statistical computing package. Instruction will be provided through laboratory exercises and interactive demonstrations
Prereq/Coreq: BIOS 6601 Restriction: Credit may be counted toward a CSPH degree for only one of BIOS 6603, 6604 or 6605
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Summer.

BIOS 6611 - Biostatistical Methods I (3 Credits)
This first course in applied statistics covers basic descriptive methods and probability; parametric and nonparametric inference for the one- and two-sample location problem; ANOVA, ANCOVA, and multiple linear regression. Matrix notation, R, and SAS are used. Prerequisite: differential calculus or permission of instructor
Grading Basis: Letter Grade
A-PUBH BIOS
Typically Offered: Fall.

BIOS 6612 - Biostatistical Methods II (3 Credits)

This is a continuation of BIOS 6611 covering univariate linear modeling and emphasizing multiple regression and analysis of variance. Logistic regression and methods for correlated data are also covered. Matrix algebra and the statistical package SAS will be used. Prereq: BIOS 6611. Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6630 - Epidemiology (3 Credits)

This course provides an introduction to descriptive and analytic methods in epidemiology and their application to research, preventive medicine and public health practice.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall, Spring.

BIOS 6643 - Analysis of Longitudinal Data (3 Credits)

Theory and application of models appropriate for clustered and longitudinal data are studied. Models for different types of outcome variables (e.g., normal, Poisson, binomial) are covered, with an emphasis on linear mixed models for normal outcomes. Prerequisites: BIOS 6632 and BIOS 6612 or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 6646 - Survival Analysis (3 Credits)

This course will introduce the statistical treatment of time-to-event data with applications to biology, medicine, and public health. It focuses on understanding key methodologies through a strong theoretical foundation, covering nonparametric group comparisons, semi-parametric regression models, parametric models, and state-of-the-art methods for survival analysis. Prerequisites include knowledge of distribution theory, calculus, linear algebra, and programming in R. Prerequisite: BIOS 6611 & BIOS 6631 or instructor permission. Corequisite: BIOS 6612 & BIOS 6632 or instructor permission.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 6648 - Design and Conduct of Clinical Research (3 Credits)

Design and conduct of clinical research studies. Intended for non-biostatistics students. Topics include: specifying the research question, study endpoints, study populations, study interventions, sample size evaluation, and choice of comparison groups. Common study designs and methods for study conduct are described. Prerequisite: BIOS 6601 or BIOS 6611 or consent of instructor. Offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 6649 - Clinical Trials: Statistical Design and Monitoring (3 Credits)

Statistical and scientific design of clinical trials. Intended for biostatistics graduate students. Topics include: scientific and statistical aspects of the research question, endpoints, treatments, sample size evaluation. A wide range of trial designs including group sequential and adaptive trial designs are covered. Pre/Corequisite: BIOS 6612 or instructor permission. Offered spring semester odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 6680 - Data Management Using SAS (3 Credits)

Students will learn how to use SAS software for data management to prepare data for analyses. Main topics include importing and exporting data, variable and dataset manipulations. Introductions to producing reports, basic statistics, figures and SAS macros are also covered.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 7712 - Statistical Methods for Correlated Data (1 Credit)

This course will cover statistical models and methods for serially correlated data, including autoregressive models, Markov models, and Markov chain Monte Carlo methods. Prereq: BIOS 6643

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 7713 - Statistical Methods for Missing Data (1-2 Credits)

This course covers methodological research being carried out for longitudinal studies with missing data. Topics may include missing data mechanisms, non-ignorable missing data, multiple imputation, mixture models and sample size determinations. 1 credit or 2 credit course versions offered in variable years. Prereq: BIOS 6643

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

CBHS 6620 - Survey Research (3 Credits)

Course examines survey research methodology, including face-to-face, telephone, mail and Internet surveys, includes: developing and ordering questions; formatting; reliability and validity; sampling; implementation; maximizing response rate; data issues; survey ethics and reporting. Offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

CLSC 7150 - Ethics and Responsible Conduct of Research (1 Credit)

Course provides overview of the field of ethics in clinical research. Topics include historical background, current regulations, IRB requirements on human subjects protection issues. Students will learn how to develop approaches to conduct ethical human subjects research in an optimal manner.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ECON 5813 - Econometrics I (3 Credits)

Theory and application of statistical techniques used to analyze economic problems. Topics include simple and multiple regression models, simultaneous equation models, and the problems encountered in their application. Students formulate models, obtain data, estimate models, interpret results and, forecast. Restriction: Restricted to students with graduate standing and coreq ECON 5803 or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Term offered: fall. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to students with graduate standing and coreq ECON 5803 or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA).

Typically Offered: Fall.

ECON 5823 - Econometrics II (3 Credits)

Second course in the econometrics sequence, covering intermediate topics in cross-section and time series analysis. Topics include limited dependent variables, autoregressive and distributed lag models, longitudinal data analysis and unit roots, co-integration and other time-series topics. Prereq: ECON 5813 with a B- or higher. Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA). Term offered: spring. Max Hours: 3 Credits.

Grading Basis: Letter Grade

Prereq: ECON 5813 with a B- or higher Restriction: Restricted to Graduate and Graduate Non-Degree Majors or undergraduate majors in the Bachelor's to Master's program (ECON BA-BMA).

Typically Offered: Spring.

EPID 6626 - Research Methods in Epidemiology (3 Credits)

Principles, concepts and methods for conducting ethical, valid and scientifically correct observational studies in epidemiological research are the focus of this class. Lectures and practical experience reinforce hypothesis formulation, study design, data collection and management, analysis and publication strategies. Prereq: BIOS 6601, BIOS 6680, EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6631 - Analytical Epidemiology (3 Credits)

This course will provide the fundamental analytical skills for assessing and reporting disease status, determinants of disease and their impact on public health. Students will learn methods of determining rates of disease occurrence, measures of associations between exposures and disease, and techniques for identifying and correcting for misclassification, effect modifiers and confounders. This is a skill-building course. BIOS 6680 OR both EPID 6605 and EPID 6607 are not prerequisite but are strongly encouraged. Prereq: EPID 6630 and BIOS 6601 or BIOS 6611.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring, Summer.

EPID 6635 - Infectious Disease Epidemiology (2 Credits)

This course considers the epidemiology of selected communicable diseases. Methods for their prevention and control, and assessment of these methods will be treated primarily through case studies. Prereq: EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6636 - Chronic Disease Epidemiology (3 Credits)

The major chronic diseases of Western countries will be reviewed including heart disease, cancer, stroke, diabetes, neurological diseases, and selected other conditions. Factual information about epidemiology of these diseases will be provided with the discussion of methodological issues which arise. Offered in odd years. Prerequisites: EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EPID 6638 - Global Cardiovascular Epidemiology (2 Credits)

A review of the major issues in global cardiovascular disease epidemiology, including trends, the extent of the disease nationally and internationally, implications of major epidemiologic studies, and strategies for prevention. Emphasis of the course will be on review and interpretation of the cardiovascular epidemiology literature. Prereq: EPID 6630. Restriction: Offered even years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EPID 6646 - Methods for Conducting Systemic Review and Meta-Analysis (2 Credits)

This course provides a broad understanding of the application of systemic reviews to public health, medicine and health policy introducing key steps for performing systemic reviews and meta-analyses through hands-on exercises, including formulating a research questions and hypothesis, developing a search strategy, identifying eligible studies, extracting data, assessing the risk of bias of included studies and synthesizing the evidence qualitatively and quantitatively. Focuses on analytical skills in performing pairwise meta-analysis. Prerequisite: EPID 6630

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 7605 - Research Methods with Secondary Data Sources (3 Credits)

Principles and methods for research design and analysis of secondary data sources including those designed for surveillance and those derived from practice. Students evaluate whether specific research questions can be answered with secondary data. Offered Spring of even years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

HSMP 6601 - Introduction to HSMP (3 Credits)

Provides an introduction to health systems, management and policy. Topics include the financing and organization of the U.S. healthcare system; introduction to health policy, including stakeholder analysis; and basic managerial skills, including human resources and budgeting.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring, Summer.

HSMP 6604 - Health Care Economics (3 Credits)

Uses economic theory to analyze and understand the U.S. health care system. Topics include: demand and supply of health and health care, health insurance, hospitals, pharmaceuticals, and physicians. Analyzes institutional and legal incentives that affect physician, patient, and insurer decision-making.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

HSMP 6609 - Cost Benefit and Effectiveness in Health (2 Credits)

Introduces students to the basics of economic evaluations of health care interventions or technology. Economic evaluations provide a method to assimilate different cost and health outcomes associated with medical treatments into a common metric.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

HSMP 7607 - Methods in Health Services Research I (3 Credits)

The first of a 2-course sequence in empirical methods in health services research. The statistical theory underlying basic empirical methods and the thoughtful implementation/practice of these methods are emphasized. Topics covered include: OLS, Gauss-Markov assumptions, logit/probit. Stata will be used. Prereq: BIOS 6611

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

PHOR 7611 - Applied Cost-Effectiveness Modeling (4 Credits)

This is an applied course in cost-effectiveness analysis. This course will apply the theory and methods learned in HSMP 6609 to develop competency in conducting cost-effectiveness analysis in health and medicine. Students will complete their own cost-effectiveness model.

Prerequisite: HSMP 6609 Cost Benefit/Cost Effectiveness Analysis

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHOR 7613 - Pharmaceutical Economics (3 Credits)

An introduction to pharmaceutical economics with emphasis on the role of pharmaceuticals and the pharmaceutical industry, regulation, and pricing. This course will also cover modeling microeconomic data including costs and health state preferences for advanced economic evaluation using primary data sources.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHOR 7615 - Pharmacoepidemiology (2-4 Credits)

This course builds upon fundamental concepts and methods of epidemiology, applied to the study of pharmaceuticals. Topics included: the FDA approval process, mechanisms of adverse drug effects, methods and data systems for studying drug-effect relationships, and evaluating published pharmacoepidemiology studies. Crosslisted: EPID 7615.

Prereq. EPID 6630, 2-course biostatistics series (either BIOS 6601-6602 or BIOS 6611-6612) Restrictions: Consent of instructor to determine level of credit to be taken.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHOR 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in pharmaceutical sciences. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Pharmaceutical Sciences (PhD)

Overview

From drug discovery all the way to clinical trials, our PhD program in Pharmaceutical Sciences will give you ideal training to become an innovator. Major areas of study include biotechnology, molecular biophysics, drug delivery, nanotechnology, clinical pharmaceutical sciences, and medicinal chemistry.

Admission Requirements

The normal requirements for admission to the graduate program in pharmaceutical sciences include a bachelor of arts or science degree from an accredited institution, as well as an academic record which satisfies the minimum admission requirements established by the CU Graduate School. Admissions are for the fall semester only.

An undergraduate degree in pharmacy, chemistry, biology, or chemical engineering is excellent preparation for graduate training in pharmaceutical sciences; however, no specific undergraduate major is required. All applicants for the program should have completed a year of study in the following subjects: general chemistry, organic chemistry, calculus, biology, and physics. In addition, courses in the following subjects will be highly recommended to supplement the student's background: biochemistry, statistics, cell biology, physical chemistry, computer science, and immunology. Under special circumstances, deficiencies in important areas may be made up within the first year after entrance into the program.

Normally, admission to the program will be dependent upon an undergraduate GPA of 3.0 or better. Students applying with a GPA less than 3.0 may be considered individually on a provisional basis. If you do not have a degree from a U.S. or Canadian institution, your official transcript will be evaluated by the Office of International Affairs.

The admission deadline for completed applications to be received at the School of Pharmacy is Dec. 1. Given that admission to the program is very competitive, it is impossible to evaluate your qualifications for admission (test scores, grades) until the selection committee assesses the entire applicant pool.

Degree Requirements

Students must complete the following requirements:

- Two Research Rotations in Fall/Spring semesters of 1st year (PHSC 7650; 1-3 credits each)
- Seminar in Pharmaceutical Sciences in each semester (PHSC 7568; 2 credits/Fall/Spring/1st-3rd Year only)
- Ethical Issues in Toxicology & Pharmaceutical Sciences (PHSC 7400 - 1 credit)

Code	Title	Hours
PHSC 7310	Fundamentals of Pharmaceutical Sciences I	3
PHSC 7320	Physical Pharmacy & Pharmaceutical Sciences	3
PHSC 7330	Development of Drugs and Biologics	3
<i>Other Science Courses Commonly Taken:</i>		
PHSC 7328	Computational Design in Drug Discovery	3
PHSC 7340	Molecular Biophysics and Enzymology	2
TXCL 7452	Introduction to Clinical Pharmacology	3

TXCL 7353	Immunology: Immunotoxicology and Immunopharmacology	2
PHSC 7565	Applied Statistics for Pharm Science and Toxicology	2
STBB/PHSC 7608	Molecular Interactions	3
STBB/PHSC 7609	Biophysics & Spectroscopy	1.5
PHSC 7651	Pharmaceutical Biotechnology (Crosslisted with CU Boulder as CHEN 5838)	3
PHSC 7653	Protein Formulation	2
PHSC 7660	Liposome-based Drug Delivery	2
PHSC 7665	Pharmacokinetic Principles & Applications	3
PHSC 7345	Nanotechnology & Drug Delivery	2
PHSC 8990	Doctoral Thesis	1-10

Toxicology (PhD)

Overview

Our graduate program in toxicology has a national and international reputation for quality. Known for our preparation in the areas of molecular toxicology, cancer biology and pharmacology, neurotoxicology and immunotoxicology, we're here to train you for a successful research career.

We're problem-solvers in the world of toxicology. Our program focuses on the molecular mechanisms underlying the toxic effects of therapeutic agents, industrial chemicals and environmental toxins. An integral part of this program is the investigation and characterization of the genetic components that underlie an organism's or tissue's resistance or susceptibility to toxic agents.

Our objective in this program is clear: educate pre-doctoral students to develop independent research careers in molecular and environmental toxicology. Upon completion of the toxicology graduate program, our students receive PhD degrees in toxicology and utilize their training in academia, industry or government.

Our world-class faculty is made up for scientists who make an impact. Faculty members have primary appointments in the School of Pharmacy, the School of Medicine, the Webb-Waring Antioxidant Research Institute, the National Jewish Medical Center or the Rocky Mountain Poison and Drug Center.

For students, that means access to research opportunities that cover the breadth of toxicology with major strengths in cancer/carcinogenesis/chemoprevention, oxidative stress and antioxidants, neurotoxicology, pulmonary toxicology, hepatotoxicology, pharmacogenetics, pharmacogenomics, immunotoxicology and forensic and clinical toxicology.

In addition to our graduate students, we train many postdoctoral fellows and work with highly trained technicians and undergraduate researchers within the toxicology program. After students complete their coursework and choose a project, they become essentially full-time researchers until the dissertation is submitted to the faculty. Students normally attend and present their research results at national scientific meetings. Communication with scientists at other institutions is considered an important facet of research training.

Admission Requirements

Admission requirements to the graduate program in toxicology include a bachelor of arts or science degree from an accredited institution, as well as an academic record that satisfies the minimum admission requirements established by the CU Graduate School. All applicants for the program should complete a year of study in the following subjects: general chemistry, organic chemistry, calculus, biology, English and physics.

In addition, courses in the following subjects are highly recommended to supplement the student's background: physiology, biochemistry, statistics, cell biology, physical chemistry, and computer science.

Under special circumstances, deficiencies in important areas may be made up within the first year after entrance into the program. Normally, admission to the program will be based on an undergraduate GPA of 3.0 or better. However, applicants' recommendations, research experience

and additional individual accomplishments will also be considered in the admissions process.

Applications are accepted online only and are due December 1st.

Degree Requirements

First Year

Year 1		Hours
Fall		
TXCL 7310	Fundamentals of Pharmaceutical Sciences I	3
TXCL 7312	Fundamentals Doctoral Recitation I	1
TXCL 7322	Molecular and Target Organ Toxicology	3
TXCL 7400	Ethical Issues in Toxicology and Pharmaceutical Sciences	1
TXCL 7565	Applied Statistics for Pharm Science and Toxicology	2
TXCL 7325	Current Topics in Toxicology Research	1
TXCL 7650	Research Rotation in Toxicology	1-5
Hours		12-16
Spring		
TXCL 7323	Environmental and Target Organ Toxicology	3
TXCL 7321	Careers in Toxicology	1
TXCL 7325	Current Topics in Toxicology Research	1
TXCL 7650	Research Rotation in Toxicology	1-5
TXCL 7312	Fundamentals Doctoral Recitation I	1
TXCL 7310	Fundamentals of Pharmaceutical Sciences I	3
Hours		10-14
Summer		
TXCL 8990	Doctoral Thesis	1
Hours		1
Total Hours		23-31

Second Year

Year 2		Hours
Fall		
Complete coursework below totaling 5 credits:		
Toxicology Elective (Optional)		
TXCL 7325	Current Topics in Toxicology Research	1
TXCL 7650	Research Rotation in Toxicology	1-5
Hours		2-6
Spring		
Complete coursework below totaling 5 credits:		
Toxicology Elective (Optional)		
TXCL 7325	Current Topics in Toxicology Research	1
TXCL 7650	Research Rotation in Toxicology	1-5
Hours		2-6
Summer		
TXCL 8990	Doctoral Thesis	1
Hours		1
Total Hours		5-13

Third Year & Beyond

Code	Title	Hours
Students must continue registering for Research or Dissertation credits until completion/defense of thesis:		
TXCL 7650	Research Rotation in Toxicology	1-5
TXCL 8990	Doctoral Thesis	1-10
Optional Elective Courses		

Elective Courses

Code	Title	Hours
TXCL 7320	Physical Pharmacy & Pharmaceutical Sciences	3
TXCL 7330	Development of Drugs and Biologics	3
TXCL 7452	Introduction to Clinical Pharmacology	3
TXCL 7475	Advanced Topics in Toxicology (For students with specialty study plans)	1-6
TXCL 7665	Pharmacokinetic Principles & Applications	3
TXCL 7750	Proteomics & Metabolomics for Biomarker Discovery	3
TXCL 7751	Neurotoxicology	2
TXCL 7353	Immunology: Immunotoxicology and Immunopharmacology	2
CANB 7620	Histophysiology	3

Courses

TXCL 7310 - Fundamentals of Pharmaceutical Sciences I (3 Credits)

This core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on macromolecular interactions, pharmaceuticals, pharmacodynamics, apoptosis, signal transduction and immunology. Critical thinking and problem solving skills will be emphasized via lectures discussion, and computer-based data analyses. Crosslisted: PHSC 7310.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7312 - Fundamentals Doctoral Recitation I (1 Credit)

This is a one-credit course that is designed to complement TXCL 7310 (Fundamentals). While the didactic lectures of Fundamentals are essential for foundational knowledge in Toxicology and the Pharmaceutical Sciences, this course provides an opportunity for and detailed discussion of experimental design and data interpretation. Intended to be taken the same semester as TXCL 7310 but can be taken alone by PHSC-MS students who've been admitted to the TXCL-PhD program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

TXCL 7315 - Fundamentals of Pharmaceutical Sciences II (3 Credits)

Core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on drug delivery and imaging systems, protein therapeutics, and the drug discovery process. Critical thinking and problem solving skills will be emphasized via lectures, discussions and computer-based data analyses. Crosslisted with TXCL 7315.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7317 - Fundamentals Doctoral Recitation II (1 Credit)

This is a one-credit course designed to complement TXCL 7315. While the didactic lectures of Fundamentals are essential for foundational knowledge in Toxicology and the Pharmaceutical Sciences, this course provides an opportunity for analytical and critical thinking and detailed discussion of experimental design and data interpretation. Intended to be taken the same semester as TXCL 7315 but can be taken alone by PHSC-MS students who've been admitted to the PHSC-PhD program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7320 - Physical Pharmacy & Pharmaceutical Sciences (3 Credits)

This course is designed to provide students with a thorough overview of physical chemical principles vital to Pharmaceutical Sciences; a course for someone whose research efforts will involve pharmaceutical development and/or the evaluation of drugs. Cross listed with PHSC 7320.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7321 - Careers in Toxicology (1 Credit)

This course builds upon and expands student knowledge relating to career trajectories within the toxicological sciences. Knowledge and experiences gained from this course will enable the student to make a more informed decision regarding the career choices available to them.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7322 - Molecular and Target Organ Toxicology (3 Credits)

This course is designed to provide a foundation in molecular mechanisms of toxicity. Biochemical mechanisms underlying toxicity will be analyzed and integrated with discussions of reactive metabolites, oxidative stress, signal transduction, cell death and organ specific toxicity. Prereq: Discussion with and consent of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7323 - Environmental and Target Organ Toxicology (3 Credits)

The course is designed to provide a fundamental understanding of environmental-related toxicants (e.g. solvents, pesticides, metals, radiation) with emphases on the molecular mechanisms underlying their organ specific toxicity and on risk assessment. Prereq: Discussion with and consent of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7325 - Current Topics in Toxicology Research (1 Credit)

This is a mandatory 2-credit hour course for Toxicology program PhD students and MS in Pharmaceutical Sciences students in the Molecular & Systems Toxicology track. Each student is expected to lead one discussion per year, papers discussed will be authored by the upcoming Toxicology seminar series speaker. Grade given after Spring semester. Requisites: Required attendance at all seminars in the Dept. of Pharmaceutical Sciences (DOPS) Graduate Program Seminar Series.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 15.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

TXCL 7330 - Development of Drugs and Biologics (3 Credits)

A survey course designed to introduce students to pharmacokinetic and pharmacodynamics principals used in drug research and development by faculty of the Skaggs School of Pharmacy, Department of Pharmaceutical Sciences. The Phoenix Winnonlin Computer software, is used to complete homework. Offered in Fall of odd-numbered years. Crosslisted with PHSC 7330.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7353 - Immunology: Immunotoxicology and Immunopharmacology (2 Credits)

This course is designed to introduce students to basic immunology principles used in drug research and development, and provide essential knowledge on the immune response, its diagnosis and its modification by drugs and chemicals.

Grading Basis: Letter Grade

Typically Offered: Fall.

TXCL 7400 - Ethical Issues in Toxicology and Pharmaceutical Sciences (1 Credit)

The purpose of this course is to expose students to ethical issues in the fields of Toxicology and Pharmaceutical Sciences. Emphasis will be placed on research conduct, animal use, and other timely issues relevant to these fields.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7452 - Introduction to Clinical Pharmacology (3 Credits)

The course provides students with a foundational knowledge of clinical pharmacology, including pharmacokinetics, drug metabolism, assessment of drug effects, optimizing patient therapy and drug discovery and development. It is grounded in weekly topical lectures, supplemented by readings, discussion and assignments. Requisite: Permission of Course Director. (crosslisted with PHSC 7452)

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

TXCL 7475 - Advanced Topics in Toxicology (1-6 Credits)

Considers special topic of current interest in toxicology. Course may be repeated for credit with instructor's consent. Prereq: Consent of Instructor/Program Director.

Grading Basis: Letter Grade

Repeatable. Max Credits: 13.

Typically Offered: Fall.

TXCL 7564 - Environmental Risk Assessment and Applied Toxicology (2 Credits)

Provides students with experience in risk assessment, environmental toxicology for public health and regulatory decision making. Topics include comprehensive human health risk assessments, baseline/probabilistic statistics, ecological risk assessment activities associated with emergency action, medical monitoring, role toxicology plays in courtroom.

Grading Basis: Letter Grade

Typically Offered: Spring.

TXCL 7565 - Applied Statistics for Pharm Science and Toxicology (2 Credits)

Students will learn several basic statistical techniques for analyzing data including when and how to use them, the appropriate assumptions for these methods, and how to clearly articulate their statistical results in the context of toxicology and pharmaceutical sciences studies. Prerequisite: Pharmaceutical Sciences and Toxicology graduate students

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7650 - Research Rotation in Toxicology (1-5 Credits)

Research work in toxicology.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

TXCL 7665 - Pharmacokinetic Principles & Applications (3 Credits)

A survey course to introduce students to pharmacokinetic and pharmacodynamics principles used in drug research and development.

Taught by faculty from the School of Pharmacy, Department of Pharmaceutical Sciences. Phoenix Winnonlin Computer software will be used in the course. Cross-listed with PHSC 7665

Grading Basis: Letter Grade

Typically Offered: Spring.

TXCL 7750 - Proteomics & Metabolomics for Biomarker Discovery (3 Credits)

An introduction to mass spectrometry followed by a focus on quantitative metabolomics or proteomics workflows. Workflows comprise sample preparation, data acquisition, and data analysis. Additional topics include imaging mass spectrometry, lipidomics, post-translational modification analysis, and clinical applications. Offered odd years.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7751 - Neurotoxicology (2 Credits)

Neurotoxicology offers a specialization in neuroscience-related toxicology; Topics (basic and applied) include: neuropharmacology (affect of ethanol/drugs), neurophysiology (metabolic poisons), developmental neurotoxicology (pesticides and neurodevelopmental disorders, radiation), and behavioral toxicology (cognitive function).

Grading Basis: Letter Grade

Typically Offered: Spring.

TXCL 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in toxicology. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Academic Services and Student Support

CU Anschutz Student Affairs

Many student support services are provided by the CU Anschutz Office of Student Affairs, including several of the services listed below.

Dr. Jan Gascoigne, PhD, MCHS

Associate Vice Chancellor for Student Affairs

Associate Clinical Professor, Community & Behavioral Health

Carl Johnson

Assistant Vice Chancellor of Student Affairs

Craig Wimmer, MS Ed, CHES, Certified WellCoach

Director of Student Health Promotion

Lauren Fontana

Director of Office of Disability, Access, and Inclusion

CARE Team

Location: Education II North, Suite #3200

Phone: 303-724-2866

Website: <https://www.cuanschutz.edu/student/support/care-team>
(<https://www.cuanschutz.edu/student/support/care-team/>)

The Campus Assessment, Response & Evaluation Team (CARE) is committed to improving campus safety and student success by evaluating individuals that may pose a safety risk for themselves or others. The team coordinates with students, faculty, and staff as well as concerned others to identify, assess, and intervene with individuals of concern.

The CARE Team strives to:

- Provide early assistance to individuals in distress or at risk of harming themselves or others
- Help prevent situations of concern from escalating
- Ensure the well-being and safety of the university community
- Work collaboratively with faculty, staff, administration, and concerned others
- Educate the campus community about identifying concerning behaviors
- Create a campus culture that fosters sharing concerns

More information on behaviors that might be a cause for concern, and the reporting process is available online through the CARE Team website (<https://www.cuanschutz.edu/student/support/care-team/>), or via a phone consultation at 303.724.8488.

CU Anschutz Shares

Location: Education II North, Suite #3200

Phone: 303-724-2866

Email: cuanschutzshares@ucdenver.edu

Website: <https://www.cuanschutz.edu/student/support/care-team>
(<https://www.cuanschutz.edu/student/support/care-team/>)

This is a resource available to students facing temporary financial hardship that threatens the student's ability to successfully complete the current semester. To be eligible for consideration, a student:

- Must be experiencing an unanticipated situation (accidents, food insecurity, natural disasters, homelessness, etc.)
- Must be currently enrolled and regularly attending at least one course at the CU Anschutz Campus
- Can provide sufficient documentation of current need
- Must exhaust all other possible financial resources (student loans, Medicaid, personal financial accounts, family/friends, etc.) before applying for student emergency funds
- Have not previously received Shares funding.

Additional information on eligibility, application process, and other resources are available via the CU Anschutz Shares website (<https://www.cuanschutz.edu/student/support/cu-anschutz-shares/>), or by emailing cuanschutzshares@ucdenver.edu, or calling 303-724-2866.

Housing

CU Anschutz does not provide on-campus housing, but students can access the Off-Campus Housing Website with their university credentials to gain housing and roommate information in the Denver and Aurora metro areas. Many Schools, Colleges, and Programs offer social media sites for students seeking roommates, please check with the leadership of your program for more information.

More information from CU Anschutz Student Affairs can be found on the website at <https://www.cuanschutz.edu/student/resources/housing> (<https://www.cuanschutz.edu/student/resources/housing/>).

Housing & Roommate Services

Use our 3rd party Off-Campus Housing Website (<https://offcampushousing.ucdenver.edu/>) to:

- Search rental listings
- Request or shop for roommates
- List a unit available to students

International students are encouraged to reference the Housing Resources for the Anschutz Medical Campus (<https://www.ucdenver.edu/services/international-student-and-scholar-services/life-in-colorado/housing/#ft-anschutz-medical-campus-1>).

Short-Term Housing

For those needing short-term arrangements, we suggest RotatingRoom (<http://www.rotatingroom.com/>), a 3rd party website featuring sublets near medical schools and hospitals nationwide.

Landlord Resources

Landlords wishing to post a vacancy with the university can:

1. Visit our Off-Campus Housing Website (<https://offcampushousing.ucdenver.edu/>)
2. Select "Have a listing? Post it now"
3. Complete the steps as prompted

Note: this is the only university-sponsored location where housing can be posted. Posting flyers on campus is not permitted.

Additional questions can be directed to Off-Campus Partners via email (info@offcampuspartners.com), or by calling 1-877-895-1234.

International Student and Scholar Services (ISSS)

Locations: Student Commons Building, Suite #1119 and Fitzsimons Building, Ground Floor, EG305, EG305A, and EG306
Phone: 303-315-2230

Email: isss@ucdenver.edu and employment-based.immigration@ucdenver.edu
 Website: <https://www.ucdenver.edu/services/international-student-and-scholar-services> (<https://www.ucdenver.edu/services/international-student-and-scholar-services/>)

The International Student & Scholar Services (ISSS) unit in the Office of International Affairs serves approximately 1,400 international students and 500 international scholars from all over the world each year. ISSS is responsible for ensuring university-wide compliance with a wide range of federal regulations related to the enrollment and/or employment of international students and scholars. Sponsored Student Services, a sub-unit within ISSS, also provides advising to students sponsored by an international third-party organization.

ISSS supports international students, faculty, researchers, and staff and the academic and hiring units who educate, sponsor and hire them to contribute to the diverse teaching, research, and learning community at The University of Colorado Denver | Anschutz Medical Campus. We provide expert holistic immigration advising; collaborate with campus partners and professional organizations to advocate for the international community; and foster intercultural exchange on our campuses. We support the success of international students and scholars as they navigate life in the U.S. and endeavor to reach their goals.

For additional information about ISSS and the services we provide, visit our website (<https://www.ucdenver.edu/services/international-student-and-scholar-services/>). To schedule an appointment with a staff member, please click here (<https://www.ucdenver.edu/services/international-student-and-scholar-services/resources/appointments/>).

LGBTQ+ Hub

Location: Education II North, Room #2101
 Email: lgbtqhub@cuanschutz.edu
 Website: <https://www.cuanschutz.edu/offices/access-engagement/programs-and-initiatives/lgbtq-hub> (<https://www.cuanschutz.edu/offices/access-engagement/programs-and-initiatives/lgbtq-hub/>)

The mission of the LGBTQ+ Hub is to create and maintain an inclusive campus environment for LGBTQ+ and allied students, faculty, staff, patients and visitors on campus and within the Aurora community. We strive to eliminate health disparities and advance inclusion through evidence-based practices, intentional collaboration, and innovative strategies. This mission is achieved by:

- Promoting visibility, awareness and a sense of community;
- Connecting LGBTQ+ students, faculty and staff with peer-to-peer support and community resources;
- Providing education about the LGBTQ+ community;
- Establishing a repository for LGBTQ+ health research and competent patient care;
- Advocating for LGBTQ+ interests, including recruitment and retention; and
- Creating intentional partnerships to provide direct services to LGBTQ+ people on campus and in the Aurora community.

The LGBTQ+ Hub is envisioned as a one-stop shop that can achieve a campus and Aurora community culture where LGBTQ+ people are highly visible, are fully included and integrated in leadership, day-to-day living, communication and dialogue, and where vibrant partnerships exist between the LGBTQ+ Hub and the campus and Aurora communities-at-large.

Additional information on the LGBTQ+ Hub, including Core Beliefs, Guiding Principles, and Values, and programs and services supported are available online (<https://www.cuanschutz.edu/offices/access-engagement/programs-and-initiatives/lgbtq-hub/>).

Office of Disability, Access & Inclusion

Location: Strauss Health Sciences Library, V-23-1409
 Phone: (303) 724-5640
 Email: disabilityaccess@cuanschutz.edu
 Website: <https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion/home-page> (<https://www.cuanschutz.edu/offices/office-of-disability-access-and-inclusion/home-page/>)

The Office of Disability, Access, & Inclusion (ODAI) recognizes, welcomes, and celebrates disability as an integral part of a diverse health professions campus and workforce. To facilitate inclusion, we partner with students and programs to identify opportunities to create and promote meaningful access.

The ODAI staff members also work closely with faculty and staff in an advisory capacity to assist with the development of reasonable accommodations for students. This partnership allows students with disabilities to demonstrate their abilities in both the classroom and clinical settings. Accommodations include but are not limited to: alternative testing (extra time for exams, taking exams in a reduced distraction environment), digital textbooks, captioning services, interpreting services, special furniture, and assistive technology.

Office of Information Technology (OIT)

The Office of Information Technology (OIT) (<https://www.cuanschutz.edu/offices/office-of-information-technology/>) works in partnership with academic and business units to provide technical support to meet the needs of students, faculty and staff at the CU Denver | Anschutz Medical Campus. OIT serves as the primary source of campus-wide technology services (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/>) in partnership with school, college and department IT professionals.

Services range from providing wireless networks, email (<http://myemail.ucdenver.edu/>) and university passwords (<https://passport.ucdenver.edu/passwordreset/>), software (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/>), desktop services, security (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/multi-factor-authentication-mfa-with-duo/>), and systems development, to protecting the integrity of the university's data and administrative systems. Additional resources are available within Tools and Services (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/>), sorted by user group (Students (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/for-students/>), Staff (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/for-staff/>), and Faculty (<https://www.cuanschutz.edu/offices/office-of-information-technology/tools-services/for-faculty/>)), along with Remote Resources (<https://www.cuanschutz.edu/offices/office-of-information-technology/remote-resources/>).

Strauss Health Sciences Library

Mail Stop A033
 12950 E. Montview Boulevard
 Aurora, CO 80045

Phone: 303-724-2152

Email: AskUs@CUAnschutz.edu
 Website: <https://library.cuanschutz.edu/>

Students are encouraged to become familiar with the Strauss Health Sciences Library resources early in their professional studies. On campus, no login is required in order to reach online library resources. Off campus, students log in to access online resources with their Passport account just as they do to access other resources such as the student portal.

The library provides an extensive collection of allied health, dental, medical, nursing and pharmacy resources, including more than 273,000 print and audiovisual volumes, hundreds of electronic books, and more than 60,000 electronic full-text journals. E-resources include PubMed, Up to Date, Ovid MEDLINE, CINAHL, PsycINFO, Web of Science, MICROMEDEX, Clinical Key, Clinical Key for Nursing and many others. E-resources may be accessed by students enrolled at CU Anschutz at no charge through the library website (<https://library.cuanschutz.edu/>). Free classes, online tutorials, research consultations, Ask Us live chat and expert online searches done by the library's professional searchers are all services accessible from the library web pages.

To access the library's e-journals, use the search box on the library home page and click the *Journal by Subject* tab. A complete list library databases can be found at <https://library-cuanschutz.libguides.com/>. Search the library's online catalog, including books, older journal holdings and audiovisual material in the Strauss Health Sciences Library. Materials not available at the Strauss Health Sciences Library may be obtained through Interlibrary Loan for a fee.

Free classes are listed at <https://library-cuanschutz.libcal.com/calendar/straussclasses> (<https://library-cuanschutz.libcal.com/calendar/straussclasses/>).

The library provides access to computers with Microsoft Office and other applications in the library's first floor Information Commons, and offers individual and group study rooms on all three floors.

Wireless printing to the library's pay for print system is available through several methods; ask at the Service Desk for details, or see information on the website (<https://library.cuanschutz.edu/help/technology-help/wireless-printing/>).

PASCAL, the library's storage facility for older materials located on the University of Colorado Denver | Anschutz Medical Campus offers a drop-off and pick-up location for library materials. More information on PASCAL can be viewed on the website (<https://library.cuanschutz.edu/about/strauss-library/pascal/>).

Student Health Promotion

Office of Student Health Promotion

Website: <https://www.cuanschutz.edu/student/health-wellness/health-promotion> (<https://www.cuanschutz.edu/student/health-wellness/health-promotion/>)
 Email: health.promotion@cuanschutz.edu

The Office of Student Health Promotion strives to create a supportive community where students feel a sense of belonging, where their holistic health and well-being are nurtured, and they are empowered to excel in their academic training. Through events, services, resources and student involvement, Student Health Promotion offers students support and opportunities of personal development towards thriving while at CU Anschutz. Tools and resources to support student well-being include:

• Telus Health Student Support App

Free, confidential, 24/7 access to mental health counseling and wellness resources for CU Anschutz students and residents. Talk, text, or video chat using the Telus Health Student Support App. Additional details are available here (<https://www.cuanschutz.edu/student/support/TelusHealthStudentSupport/>).

• Student Health Promotion Committee

Website: <https://www.cuanschutz.edu/student/health-wellness/health-promotion/committee> (<https://www.cuanschutz.edu/student/health-wellness/health-promotion/committee/>)
 Students representing each school/college work collaboratively to implement positive initiatives and create a culture of health and wellness on campus. Creating programming, education, and marketing, the SHPC apply student perspective to meet the needs and interests around health and well-being. To get involved, or learn more about the committee or meeting times access their page through this site (<https://www.cuanschutz.edu/student/health-wellness/health-promotion/committee/>).

• The CU Anschutz Phoenix Center

Website: <https://www.cuanschutz.edu/student/support/phoenix-center> (<https://www.cuanschutz.edu/student/support/phoenix-center/>)
 Resource Line: 303-329-9922 ext. 302
 Sexual Assault Hotline: 303-322-7273
 Línea de Crisis Sobre La Violencia Sexual: 303-329-0031

The Phoenix Center at CU Anschutz (PCA) is a resource for students, faculty, and staff who are affected by interpersonal violence (IPV) including relationship violence, sexual violence, and stalking. The Phoenix Center is proud to partner with The Blue Bench (<https://thebluebench.org/>) to provide free and confidential support and advocacy services. The Blue Bench is committed to offering support including navigating medical and legal logistics, counseling and case management options, and advocacy services.

The PCA continues to offer support in identifying and navigating resources for individuals seeking support. Additional information is available by calling 303-724-7674 or emailing craig.wimmer@cuanschutz.edu.

• WeCU Peer Coaches

Website: <https://www.cuanschutz.edu/student/health-wellness/health-promotion/peer-coaching> (<https://www.cuanschutz.edu/student/health-wellness/health-promotion/peer-coaching/>)
 Email: health.promotion@cuanschutz.edu
 Peer coaches are trained to provide a guided conversation in a one-on-one setting, to help students identify their strengths, motivations, passions, and target areas in their life they would like to build upon or change. Students can make appointments with a peer coach. For Fall Semester, all appointments will occur virtually. Coaches will not prescribe a plan, but instead partner in a discussion to explore new and creative approaches to accomplish successful change. Additional information on what to expect, and how to schedule an appointment is available here (<https://www.cuanschutz.edu/student/health-wellness/health-promotion/peer-coaching/>).

• Recovery & Resiliency Group

Recovery-based community that provides support to CU Anschutz students and trainees. Private with no registration/sign-in. Student led, with no traditional structure/agenda. Current meeting information/details available via this site (<https://www.cuanschutz.edu/student/health-wellness/health-promotion/>).

• HelpCompass

Website: <https://help.cuanschutz.edu/>

HelpCompass is an essential crisis navigation tool that helps students, faculty, and staff connect to the right help in moments of need. Life gets hard. Finding help should be easy.

• YOU@CUAnschutz

Website: <https://you.cuanschutz.edu/>

Email: health.promotion@cuanschutz.edu

This is a personalized wellness hub that offers information about health and well-being customized to your interests and needs. Use to find campus resources and events, to build healthy habits and create personalized goals. YOU is here to help you Succeed, Thrive, and Matter. Free and confidential.

Student Outreach and Support Office

1312 East 19th Avenue

#3200

Aurora, CO 80045

Phone: 303-724-2866

Email: StudentAffairs@cuanschutz.edu

Website: <https://www.cuanschutz.edu/student/support/case-management/> (<https://www.cuanschutz.edu/student/support/case-management/>)

At CU Anschutz, we engage in a culture of care and strive to maintain the well-being of the campus community. We collaborate with all of the schools and colleges to ensure students have access to resources that help them navigate challenging experiences.

Functions of Outreach and Support

- Create access to resources for students to maintain their safety, health, and well-being
- Develop an environment where everyone understands their responsibility of noticing the well-being of those around them
- Consult and train on supporting students in navigating challenging situations
- Manage the Case Management referral system
- Manage the Medical Leave of Absence and Fit to Return process
- Use a case management framework for proactive and reactive support
- Convene the CARE Team
- Office Hours: Mon-Fri: 08:00am - 5:00pm; Evening Hours on Monday: 06:00pm - 08:00pm

Per the Duty to Report Criminal and Threatening Behavior Policy, university staff, faculty, students and volunteers are required to report any threatening or criminal behavior to police and are encouraged to follow up with a CARE Report. Additionally, per the CARE Team Policy all university staff, faculty, students, and volunteers are strongly encouraged to report concerning student behavior to the CARE Team. Referrals can

be submitted online at <https://www.cuanschutz.edu/student/support/care-team/> (<https://www.cuanschutz.edu/student/support/care-team/>).

Graduation Procedures & Commencement Information

Graduation Application Deadlines

A student planning to graduate must submit an application for graduation to the Registrar's Office according to the schedules below. The application for graduation is available through the student's portal.

- August 2025 Candidates: Graduation application due Friday, June 6, 2025
- December 2025 Candidates: Graduation application due Friday, September 5, 2025
- Spring 2026 Candidates: Graduation application due Friday, January 3, 2026

Application Instructions

Make an appointment with your assigned advisor in your school or college to verify graduation requirements and to make sure you'll meet them by the end of the semester.

- College of Nursing (<https://nursing.cuanschutz.edu/>)
- Colorado School of Public Health (<https://coloradosph.cuanschutz.edu/about-us/>)
- The Graduate School (<https://graduateschool.ucdenver.edu/about-us/>)
- School of Dental Medicine (<https://www.ucdenver.edu/academics/colleges/dentalmedicine/AboutUs/Pages/ContactUs.aspx>)
- School of Medicine (<https://medschool.cuanschutz.edu/deans-office/about-us/contact-us/>)
- Skaggs School of Pharmacy and Pharmaceutical Sciences (<https://pharmacy.cuanschutz.edu/about-us/>)

Once you have verified that you're on track to graduate, use your UCDAccess student portal to apply for graduation:

1. Once logged in, click on Academics under your Student Center.
2. Click Apply for Graduation

Please note: Your Intent to Graduate Form needs to be submitted between the first day of school and the last day to drop/add classes of the term you intend to graduate.

Degree Conferral Dates

- Summer 2025: August 15, 2025
- Fall 2025: December 12, 2025
- Spring 2026: May 15, 2026

Please note that the Conferral Date (official date of completion) may not be the same as the Commencement Ceremony.

Diploma Information

Important Notes Regarding Diplomas and Graduation

Watch for information concerning transcripts, diplomas, Commencement, etc., via email through your CU Anschutz account following the acceptance of your graduation application.

- Diplomas for degrees conferred at the Anschutz Medical Campus are automatically mailed out to the diploma address in the student's record.
- Diplomas will be awarded to approved candidates for degrees at the annual commencement ceremonies for students at the Anschutz Medical Campus or after official degree awarding dates as approved by the Board of Regents.

Information about ordering replacement diplomas and display-sized diplomas can be found on the Office of the Registrar's website (<https://cuanschutz.edu/registrar/diplomas-graduation/>).

Want to Participate in the Commencement Ceremony?

If your application to graduate is approved, you are eligible to walk in the Commencement ceremony. CU Anschutz conducts a Spring and Fall ceremony each year. Not all programs participate in both. Please check with your program for information about when it recognizes its graduates. Participation in Commencement exercises is optional and requires a separate registration and regalia ordering process. Commencement Registration typically opens in February for Spring, and in October for the Fall ceremony. Additional information and registration links can be found via the Commencement website (<https://cuanschutz.edu/commencement/>).

Co-Curricular Engagement Campus Life

Keeping Students Informed and Engaged

The Office of Student Affairs makes central to its mission that students have plenty of opportunities to stay engaged with the campus community. It advises Student Senate, manages student organizations and interest groups, and helps keep students informed of volunteer opportunities, recreation, and events on campus.

Campus Traditions

The Office of Student Affairs in partnership with internal and external campus partners are hosting our annual campus traditions to build community and pride. Student, staff, faculty and alumni are invited to all of the events. Events include: Outdoor Movies, Welcome Week, Guest Speakers, First Snow, Winter Fest, Intramural Sports, Zoo Lights, Denver Sports, Sustainability Solutions Challenge, Concert Series, Donor Ceremony, and Student Awards.

For more information, please visit the event page website at <https://cuanschutz.edu/student/campus-life/annual-campus-events/> (<https://cuanschutz.edu/student/campus-life/annual-campus-events/>).

Student Clubs and Organizations

The Office of Student Affairs recognizes interdisciplinary student clubs and organizations. Any interdisciplinary student organization wishing to be a recognized student organization at CU Anschutz should acquaint themselves with the policy and complete the the CU Anschutz Club/Organization Advisor Recognition Renewal (https://ucdenverdata.formstack.com/forms/ocss_studentorganization_registrationrenewal_copy/) and the CU Anschutz Club/Organization Recognition Renewal. (https://ucdenverdata.formstack.com/forms/ocss_studentorganization_registrationrenewal/)

Student organizations are required to renew their recognition each year in the spring starting **April 1st**. In order to complete the recognition process, each organization will need to confirm three (3) officers, one (1) faculty/staff advisor, as well as upload their constitution/by-laws.

More information can be found at <https://www.cuanschutz.edu/student/campus-life/organizations> (<https://www.cuanschutz.edu/student/campus-life/organizations/>)

Student Senate

Student Senate is the interdisciplinary student governance group at the CU Anschutz. Representatives are elected from every class in every school or program: Anesthesiologist Assistants, Child Health Associate/Physician Assistant, Dentistry, Basic Sciences Graduate School, School of Public Health, Medicine, Nursing, Pharmacy and Physical Therapy.

Student Senate is responsible for the creation and oversight of the Senate funding requests, which allocates money to affiliated and campus wide organizations on campus. Senate is also responsible for planning and overseeing campus-wide senate sponsored events and activities. Senators address complaints and ideas for improving student life on campus, act as official liaisons between students and administration, attend meetings regularly and become involved in various committees and their work.

For additional information on Student Senate's role and responsibilities, along with meeting information, please visit the Student Senate's website at cuanschutz.edu/student/campus-life/senate (<https://www.cuanschutz.edu/student/campus-life/senate/>).

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Agricultural Resource Economics-CSU (AREC)

AREC 5720 - Social Benefit-Cost Analysis (3 Credits)

Theory, application of concepts relating to social benefit cost analysis of public projects, policies intended to promote social welfare, economic growth. Prerequisite: 300-level microeconomics required. BIOS 6601, PBHC 5600, or CHBH 6120 or equivalent.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

Agriculture-CSU (AGRI)

AGRI 5000 - Advanced Issues in Agriculture (3 Credits)

Scientific, technical, cultural, and social issues facing agriculture, and their interrelationships.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

AGRI 5460 - Principles of Cooperative Extension (3 Credits)

Traditional and contemporary delivery systems of Cooperative Extension emphasizing structures of non-formal education.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

AGRI 5470 - Delivery of Co-operative Extension Programs (4 Credits)
Methods, techniques, and procedures in planning, implementation, and deliver of Cooperative Extension programs. Prereq: Written consent of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

AGRI 6950 - Independent Study - Agriculture (1-18 Credits)

Independent study in agriculture.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Anesthesiology (ANES)

ANES 6038 - Clinical Anesthesiology IV (5.5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: GRD

Typically Offered: Fall.

ANES 8000 - Clinical Anesthesiology (4-16 Credits)

4 wks. Students will work one-on-one with anesthesia faculty and residents to gain further practical experience in all aspects of peri-operative care; improving skills gained in the third year and developing a deeper understanding of the breadth of anesthetic practice.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

ANES 8001 - Surgery Intensive Care AI (8 Credits)

The goal is to prepare MSIV's for internship by having them manage 'their' patients, present on multidisciplinary rounds, call consults, assist/performing procedures, discuss clinical topics & receive didactics.

Honors requires clinical excellence and a written paper.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

ANES 8002 - Anesthesia Subspecialties (4-8 Credits)

4 wks. Max: 4. Course exposes students to subspecialty areas in Anesthesiology. Students will attain additional experience in selected areas of anesthetic practice. Options include Acute and Chronic Pain, L & D, Cardiothoracics, Neurosurgery, Transplants and Pre-Anesthesia Testing. Prereq: ANES 8000.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

ANES 8100 - ANES Elective Away (4-8 Credits)

This Anesthesiology elective will be held at a site in Colorado, another state or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

ANES 8600 - Research in Anesthesiology (4-16 Credits)

2-8 wks. Prereq: Special permission and individual arrangements required in advance. The student must receive prior approval from the Associate Dean for Student Affairs. This course allows students to complete a research project in Anesthesiology.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Spring.

ANES 8630 - ANES Research Elective Away (4-16 Credits)

This Anesthesiology research elective will be held at a site in Colorado or another state. Course is only offered 2, 4 or 8 weeks

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

Anesthesiology - MS Program (ANMS)

ANMS 5000 - Orientation to Anesthesia (1 Credit)

Overview of basics of anesthesia to familiarize the student to basic competencies prior to their first clinical day. Topics covered include: medical terminology, pharmacology, anesthesia machine, basic monitoring, anesthesia care plans, drug dosing and calculations. Requisite: Must be admitted to MSA Program.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5001 - Introduction to Clinical Anesthesia (2 Credits)

Introduction to induction, maintenance, and emergence from anesthesia, history and types of anesthesia, universal precautions, infection control, OR layout, sterile fields and techniques, patient interaction, starting intravenous catheters and arterial cannulation, obtaining arterial blood samples, and applying ASA-standard monitors. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5002 - Perioperative Medicine (2 Credits)

A course on preoperative evaluation of the patient based on patient and surgery risk factors. Small group application of patient history and physical taking will also be utilized to allow students to apply concepts learned in class. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

ANMS 5006 - Simulation and Skills Laboratory I (1 Credit)

Exploration of pulse oximetry, capnography, blood pressure monitoring systems, anesthesia delivery systems, breathing circuits, fresh gas flow effect, theory of dilutional methods of cardiac output monitoring, and relations between mean circulatory filling pressures and central venous pressure using anesthesia simulator. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5007 - Survey of Anatomy (2 Credits)

Gross structures of the human body will be covered didactically and integrated with cadaver dissection demonstrations. This course will also develop the knowledge of the human anatomy necessary for the practice of anesthesiology. Requisite: Must be admitted to the MSA Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5008 - Clinical Anesthesiology I (5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Requisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5009 - Anesthesia Monitoring and Delivery Systems (2 Credits)

Students will learn about basic monitors related to the practice of anesthesia, including ECG, NIBP, SpO₂, respiratory gas analysis, temperature monitoring and other standard monitors. Students will be fluent in the interpretation of data from these basic monitors. They will also learn about anesthesia delivery systems including principles of ventilator function, breathing circuit configurations, and safety features of the operative setting including scavenging systems, machine checkout, and line isolation monitors.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5010 - Basic Cardiac Physiology (2 Credits)

This course will cover the principles of electrocardiography, ECG interpretation as well as arrhythmias and their pharmacological treatments. Cardiac anatomy and introduction to the different cardiac monitoring devices. ACLS/BLS for adults and PALS with an introduction to pediatric heart will be covered. Introduction to different cardiac surgeries and cardiac pharmacology.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5011 - Anesthesia Principles and Practice I (2 Credits)

Principles involved in the formulation of anesthetic plans based upon data obtained during the preoperative evaluation, including the formulation and practices of different anesthetic plans and techniques as related to specific surgical procedures and pathophysiology. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5012 - Physiology I (2 Credits)

Physiology 1: Principles of Airway Management and Respiratory Physiology: Structure, function, pathophysiology, disease and management of the human airway and pulmonary system will be covered. Basic and advanced principles of airway management, elective and emergent will be covered, including equipment and techniques. Examination, recognition, techniques and management involved in pediatric /adult difficult airways. Specific instruction on common disease states, restrictive and obstructive pulmonary disorders, mechanical ventilation, arterial blood gas analysis and how these concepts apply to patient under anesthesia care will be covered.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 5013 - Patient Monitoring II (2 Credits)

More advanced monitoring including, BIS, SvO₂, arterial and central pressure monitoring, basics of ultrasound, advanced ECG and ST analysis. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5016 - Simulation and Skills Laboratory II (1 Credit)

Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will utilize critical thinking skills to fully integrate didactic knowledge in patient care situations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5018 - Clinical Anesthesiology II (5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5021 - Anesthesia Principles and Practice II (2 Credits)

Practical principles, application, and interpretation of various monitoring modalities including ECG, invasive and non-invasive blood pressure, oximetry, cardiac output, respiratory gas analysis, respiration, and instrumentation as they pertain to anesthesia practice. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5026 - Simulation and Skills Laboratory III (1 Credit)

Application of patient monitoring, clinical anesthesia practice and use of a high fidelity patient simulation environment will be covered. Students will utilize critical thinking skills to fully integrate didactic knowledge in patient care situations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5028 - Clinical Anesthesiology III (7.5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia will be gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5200 - Pharmacology I (2 Credits)

General pharmacologic concept, membrane receptor, transport, biotransformation, pharmacokinetics and pharmacodynamics will be covered. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 5210 - Pharmacology II (2 Credits)

Covers drugs that include inhaled anesthetics, opioids, barbiturates, benzodiazepines, anticholinesterases and anticholinergics, neuromuscular blockers, adrenergic agonists and antagonists, non-steroidal anti-inflammatory drugs, antiarrhythmics, calcium channel blockers, diuretics, anticoagulants, antihistamines, and antimicrobials. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5501 - Anesthesia and Co-Existing Diseases I (2 Credits)

This course focuses on the anesthetic considerations that must be accounted for in patients with co-existing diseases due to physiological changes. Disease states include substance abuse, obesity, obstructive sleep apnea, asthma, COPD, etc. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 5502 - Clinical Imaging (2 Credits)

Gross structures of the human body will be covered with emphasis placed on imaging modalities, imaging interpretation, and clinical correlation. This course will further develop the knowledge and hands-on skills necessary for the practice of anesthesiology and related procedures. Prerequisite: Student must be admitted to MSA Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

ANMS 6007 - Anatomical Imaging I (2 Credits)

Gross structures of the human body will be covered with emphasis placed on imaging modalities and clinical correlation. This course will also develop the knowledge of the human anatomy necessary for the practice of anesthesiology and related procedures. Prerequisite: Must be admitted to MSA Program.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6012 - Physiology II (4 Credits)

Structure, function, anatomy, pathophysiology, disease, and management of the human cardiovascular, neurological and renal systems. Covers the principles of cardiovascular, renal and neurological physiology and how it applies to a patient's anesthetic as well as anesthetic risk. Pediatric physiology included.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6031 - Anesthesia Principles and Practice III (2 Credits)

This is a course on improving system-based learning and practice. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6038 - Clinical Anesthesiology IV (7.5 Credits)

Developmental skills and foundations of the clinical practice of anesthesia gained through one-on-one supervised instruction in the operating room and other ancillary anesthetizing locations. Participation and responsibilities increase through the year as knowledge and skills develop. Prerequisite: Must be admitted to MMS Program. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6048 - Clinical Anesthesiology V (10 Credits)

Clinical experience in required rotations through anesthesia subspecialty areas. Two-week and four-week interval rotations assigned, and will require call during some nights and weekends. Clinical practice is gained through one-on-one supervised instruction in operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6058 - Clinical Anesthesiology VI (10 Credits)

Clinical experience in required rotations through subspecialty anesthesia areas. Rotations assigned in two#week and four#week intervals, and will require call during some nights and weekends. Clinical practice gained through one#on#one supervised instruction in operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6068 - Clinical Anesthesiology VII (10 Credits)

Clinical experience in required rotations through anesthesia subspecialty areas. Rotations assigned in two#week and four#week intervals, and require call during some nights and weekends. Clinical practice gained through one#on#one supervised instruction in the operating room and other ancillary anesthetizing locations. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6110 - Physiology III (2 Credits)

Pathophysiology in a systems approach: pregnancy physiology and pathophysiology, hepatic physiology and pathophysiology including coagulation pathways, and endocrine topics pertinent to anesthesia care. This course provides a perspective of the above topics that are integral to providing anesthesia to patients in a variety of settings. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6201 - Senior Project I (1 Credit)

Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6212 - Senior Project II (1 Credit)

Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6220 - Pharmacology III (2 Credits)

This is a continuation of anesthesia specific pharmacology. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6221 - Senior Project III (1 Credit)

Each student will develop a senior year project with the help of a faculty mentor. Project will be research, process, or quality improvement related. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6301 - Senior Seminar I (2 Credits)

Each student will be required to research, prepare, and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6311 - Senior Seminar II (2 Credits)

Each student will be required to research, prepare and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6321 - Senior Seminar III (2 Credits)

Each student will be required to research, prepare and present on clinical challenges of different clinical scenarios. Each case will be analyzed and discussed by the group with faculty participation. Prerequisite: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6511 - Anesthesia and Co-Existing Diseases II (2 Credits)

Continuation of Anesthesia and Co-Existing Diseases I. Focuses on anesthetic considerations that must be accounted for in patients with co-existing diseases due to physiological changes. Disease states include ischemic heart disease, valvular heart disease, systemic hypertension, pulmonary hypertension, coagulation disorders, etc. Prerequisites: Must be admitted to MMS Program. Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6701 - Anesthesia Non-Technical Skills & Wellness I (1 Credit)

(ANTS) will examine and develop an understanding of medical errors, situational awareness, decision making, leadership, management of stress and fatigue. In addition this course will cover pedagogical principles in medical education and professionalism. all of which are integral in developing well-rounded and adaptable clinicians. Requisite: Must be admitted to MSA Program.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

ANMS 6711 - Anesthesia Non-Technical Skills & Wellness II (1 Credit)

(ANTS) will examine and develop an understanding of medical errors, situational awareness, decision making, leadership, management of stress and fatigue. In addition this course will cover pedagogical principles in medical education and professionalism, all of which are integral in developing well-rounded and adaptable clinicians. Requisite: Must be admitted to MSA Program.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

ANMS 6801 - MSA-1 Seminar 1 (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANMS 6811 - MSA-1 Seminar II (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar. Requisite: Must be admitted to MSA Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANMS 6821 - MSA-1 Seminar III (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar.

Grading Basis: Letter Grade

Typically Offered: Summer.

ANMS 6831 - MSA-1 Seminar IV (1 Credit)

An introductory course into Senior Seminar, each student will observe, participate, and be tested over a presentation/PBLD conducted by a Senior Student. This course will not only discuss challenges presented in the clinical environment, but it will also prepare the student for Senior Seminar. Requisite: Must be admitted to MSA Program

Grading Basis: Letter Grade

Typically Offered: Fall.

Animal Sciences-CSU (ANEQ)

ANEQ 5670 - HACCP Meat Safety (2 Credits)

Control of health problems in meat products through hazard analysis critical control point (HACCP) and total quality management (TQM) practices. Prereq: ANEQ 460.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

ANEQ 6760 - Molecular Approach to Food Safety (3 Credits)

Molecular subtyping, tracking, and control; molecular ecology and evolution of food-borne pathogens; molecular pathogenesis of food-borne diseases. Prereq: MIP 300 and MIP 301 or MIP 334 and MIP 335.

Grading Basis: Letter Grade

Repeatable. Max Credits: 99.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Anthropology-CSU (ANTP)

ANTP 5050 - Resilience, Well-Being and Social Justice (3 Credits)

This course draws on literature from anthropology, sociology, political science, economics, public health, environmental studies, human ecology, journalism, psychology, nursing, history and ethnic studies. It will also engage with the practice-based work of NGOs and governments. Requisite: 008754

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

ANTP 5200 - Women Health & Culture (3 Credits)

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

ANTP 5300 - Human Environ Interactions (3 Credits)

Paradigms and concept in ecological anthropology with an emphasis on adaptation and resilience.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

ANTP 5320 - Culture of Disaster (3 Credits)

This course is designed to introduce students to the way social scientists study disaster.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

ANTP 5380 - Food, Hunger and Culture (3 Credits)

This course will explore cultural and social understandings of food cross-culturally. These include the symbolic meanings that people attribute to food and its consumption cross-culturally, and the culturally and socially constructed understandings of the body in relation to food and diet.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

ANTP 5400 - Medical Anthropology (3 Credits)

Cultural and biocultural approaches to health, illness, and the body; theory and application in medical anthropology. Prereq: Graduate standing.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

ANTP 5450 - Global Mental Health - Theory and Method (4 Credits)

Cross-cultural study of mental health and healing; cultural, clinical and biological perspectives; integration of theory and method.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

ANTP 5710 - Anthropology and Global Health (3 Credits)

Global health concerns and problems including poverty, urbanization, malnutrition, diet, war and refugees, climate and environment. Credit will only be given for one of the following courses: PSCY 5170, ANTP 5710 or CBHS 6619.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

ANTP 6950 - Independent Study: Anthropology (1-18 Credits)

Independent Study: Anthropology. Prerequisite: Graduate Standing.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Summer.

Anthropology-UNC (ANTR)

ANTR 5000 - Immigrant and Refugee Health (3 Credits)

This course explores migration and health in global perspectives, focusing on the sociocultural, political, and economic factors contributing to health disparities for refugees, asylum seekers, and undocumented migrants.

Grading Basis: Letter Grade

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

Applied Dentistry (Prior) (DSAD)

DSAD 5866 - Independent Study (1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSAD 6855 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 15.

Typically Offered: Fall.

DSAD 6866 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSAD 6877 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSAD 7719 - Comprehensive Patient Care Clinic C (3 Credits)

Continuation of comprehensive patient care activities with a focus on independence, student preparedness, technical skills, patient management and professionalism.

Grading Basis: Letter Grade with IP

DSAD 7721 - Comp Pt Care Clinic D (3 Credits)

Grading Basis: Letter Grade with IP

DSAD 7855 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 15.

Typically Offered: Fall.

DSAD 7866 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSAD 7877 - Independent Study (0.1-5 Credits)

Independent study - assigned by course Director.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSAD 8827 - Comp Pt Care Clinic F (11 Credits)

Grading Basis: Letter Grade with IP

DSAD 8847 - Comprehensive Patient Care Clinic H (11 Credits)

Continuation of advanced comprehensive patient care activities for DS 4 dental students not registered for Integrated Care Clinical Dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

DSAD 8859 - Independent Study (0.1-6 Credits)

Independent study - assigned by course Director.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSAD 8895 - Community-based Clinical Dentistry 5 (0.1-10 Credits)

Students complete six weeks (may elect to take additional eighteen weeks) in a non-metropolitan, community-based educational site.

Current sites include rural community health centers, special patient care hospitals, and migrant health care programs as well as several private practice locations.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

Basic Science (DSBS)

DSBS 5500 - Embryology and Craniofacial Biology (0.1-5 Credits)

Deals with the chemical basis of biological organization and function.

Emphasis is given to topics most directly relevant to oral health and disease.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSBS 5502 - Microanatomy (0.1-5 Credits)

This course will cover initially the structure and function of cells and tissues and progress to study the normal structural features of the organs of the body, as the basis for understanding pathologic conditions and disturbances of function.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSBS 5504 - Human Anatomy (0.1-10 Credits)

This course covers the anatomy of major body systems with emphasis on head and neck structures.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSBS 5506 - Oral Histology (0.1-5 Credits)

This course will cover the details of tooth development and the histological features of the oral tissues, to include: salivary glands, oral epithelia, oral lymphatic tissue, enamel, dentin, cementum, oral bone and the periodontal ligament. Requirement: Department Consent

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSBS 5507 - Molecular Biosciences (0.1-5 Credits)

This course provides in-depth consideration of the biochemical, molecular biology and genetic mechanisms that control protein synthesis, gene expression and cellular function.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSBS 5508 - Physiology (0.1-5 Credits)

Deals with fundamentals of human physiology from basic cellular processes, such as membrane transport, to the organization and control of organ systems.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSBS 5511 - Invaders and Protectors (0.1-5 Credits)

This course covers basic principles of general and medical microbiology with emphasis on oral microorganisms while integrating the response of the immune system to fight these invaders.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSBS 5516 - Pathology (0.1-5 Credits)

This course assists the student in learning the etiology, pathogenesis, and the changes in structure and function of specific disease entities on selected organ systems and how these changes relate to the practice of dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSBS 6600 - Fundamentals of Pharmacology (0.1-10 Credits)

Part one of a two-course sequence. Intensive study of drugs used in dental practice with emphasis on the basic principles of drug action. Lectures and clinical correlations are employed.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSBS 6603 - Applied Clinical Pharmacology (0.5-10 Credits)

Part two of a two-course sequence. Intensive study of drugs used in dental practice with emphasis on the basic principles of drug action. Lectures and clinical correlations are employed.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSBS 6604 - Advanced Head and Neck Anatomy (0.1-5 Credits)

This course will review concepts initially introduced in DSBS 5504 Human Anatomy (DS1 Fall) and provide more detail through dissections of cadavers with a focus on the anatomy of the head and neck.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall.

Bioethics & Humanities in Health (BEHH)

BEHH 5010 - Foundations of Bioethics & Humanities in Health (3 Credits)

This course combines two essential areas of study. The first eight weeks focus on the foundations of bioethics, examining moral frameworks used in medical and health settings and their application to clinical, organizational, and population-based cases. The second eight weeks explore the foundations of narrative practice in medicine through engagement with various texts and other materials. Each section maintains its distinct focus while providing students with complementary perspectives on health and health care.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5210 - The Art of Observation (1 Credit)

The Art of Observation is designed to sharpen the perceptual and analytical skills, which are essential for excellence in clinical practice in dentistry, medicine, and other professional fields. Participants will engage with a selection of visual art pieces and photographic works. Through guided interaction with these materials, students will hone their observational acuity, practice articulating their perceptions and insights, and engage in collaborative analysis reminiscent of differential diagnosis processes. This course teaches Visual Thinking Strategies (VTS), a protocol for facilitating group discussions around visual materials. Students will master the methodology of VTS, including careful material selection, silent observation periods, strategic questioning, neutral facilitation, and effective paraphrasing. The skills cultivated in this course directly translate to clinical scenarios, where the ability to pinpoint key clinical indicators, recognize symptomatic patterns, and interpret patient data flexibly and accurately is paramount for effective patient care. The goals are to increase compassion and empathy, encourage tolerance for ambiguity and diversity, recognize biases in interpretation and foster reflection and honest communication using the arts to gain these skillsets.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5211 - The Art of Listening: Music and Medicine (1 Credit)

The Art of Listening is an innovative course that explores the profound intersection of musical and clinical listening skills to enhance practice in medicine, dentistry, and other healthcare fields. Drawing upon the unique resources of the Anschutz Campus, including a live performance by the Campus Chorus and/or Orchestra, this course develops healthcare professionals' abilities to listen deeply, empathetically, and analytically. Through immersive musical experiences and clinical scenarios, participants will develop a heightened awareness of auditory nuances, rhythms, and harmonies that parallel the complexities of human health and disease. The course emphasizes how musical immersion - can inform and enhance clinical listening skills. Students will learn to apply these techniques to medical contexts, developing their ability to hear both what is said and unsaid, recognize patterns, and maintain focused attention during patient encounters. Participants will explore how musical narratives unfold, mirroring the way patient histories are constructed and understood in clinical settings. Special attention is paid to the emotional and cultural aspects of music, encouraging students to reflect on how these elements influence perception and interpretation in healthcare. This approach fosters empathy and cultural competence, crucial attributes in today's diverse healthcare landscape. By combining experiential learning with practical clinical applications, the course aims to cultivate not just better listeners, but more attentive, empathetic, and perceptive healthcare professionals. Students will develop advanced listening skills essential for excellence in patient-centered care, while gaining a deeper appreciation for the role of music in healing and human connection.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5212 - Pain and Dentistry in the History of Western Art (1 Credit)

If you run a basic search for historical images of pain in Western art since 1500, a curiosity emerges: A significant proportion of the results relate to dentistry and dental pain. In other words, the history of dentistry and the history of pain form overlapping iconography in the history of Western art. Given the near universality of dental pain in human experience, the frequency of its representation is no mystery. However, one of the many paradoxes of pain is that although pain is universal, it is also quintessentially subjective: my pain is different from your pain, even if the cause of the pain is identical. Literature scholar Elaine Scarry notes another paradox: pain is simultaneously one of the most privately certain and publicly doubted experiences. In addition, some who experience pain do not seem to suffer, while others who suffer do not seem to experience pain. This interdisciplinary short course uses the dual iconography of pain and dentistry as a vehicle to explore the history of pain and its relationship to dentistry in the early modern and modern eras. Learners will acquire historical fluency in key themes and issues related to dental practice and patient experience that they can apply to contemporary dental medicine.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5213 - Reflections on Incarceration and Well-Being (1 Credit)

This discussion-based course focuses on understanding incarceration as a structural determinant of health. Through engaging with written work from incarcerated writers, as well as critical theories and empirical texts, students will explore issues related to how the system of incarceration affects individual, community, and societal health and well-being. Weekly discussions will include topics such as health and mortality data collection and communication, healthcare access and delivery, and conditions of confinement. They also include topics along axes of identity including birthing and parenting, aging inside, and incarceration of transgender individuals. Students will apply their learnings in-class to a final paper.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5214 - From Burned Out & Extracted to Regenerative Healing: William Carlos Williams' The Doctor Stories (1 Credit)

"Burnout is a Surrender," said Dr. Martin Luther King. Reflecting on this Robert Coles writes that those who are burned out can "use such low points to become more realistic and reflective and, in the long run, sturdier." In this spirit, spend a semester surrendering to the joys, hazards, and complexities of a life attending to patients by sitting with *The Doctor Stories* by William Carlos Williams. The goal of this course will be to provide opportunities for close presence to these stories. In doing so you may acquire a knack for what John Launer calls "a radical facilitative presence" - both for your own healing soul and for your patients. Each week you will read one story and follow a standard template to reflect on how the story provoked movement inside of you. Then throughout the week you will be asked to take 5 minutes each day to write down how a specific clinical encounter connects to the week's story. We will meet in person to casually commune over our shared experience with these stories.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5215 - Global Health Humanities (1 Credit)

"Global Health Humanities" offers a unique interdisciplinary exploration of health, illness, and healing across cultures through the lens of the humanities. Participants will investigate how universal human experiences of health and illness are interpreted and expressed differently across diverse cultural contexts. Through analysis of narratives, historical accounts, and artistic representations, we will explore questions such as: How do cultural beliefs and practices influence perceptions of what is considered healthy or pathological in oral health? In what ways do storytelling and artistic expression reveal the lived experiences of mental illness in different societies? How have colonial legacies and global power dynamics shaped health inequities? A key focus will be on amplifying marginalized voices in global health. Students will engage with works by authors, artists, and thinkers from the Global South, as well as from historically underrepresented communities within the Global North. This approach will highlight how diverse cultural perspectives can enrich our understanding of health and contribute to more equitable and effective global health strategies.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5250 - Topics in Media, Medicine and Society (3 Credits)

This interdisciplinary course will explore the interconnections and intersections between medicine and media, investigating a significant collaborative enterprise that characterizes American culture.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5310 - Ethical Care in Patient's Living with Dementia (1 Credit)

The population in the United States aged 65 and older is expected to increase 47% by 2050. Advancements in technology and improvements in care have enabled our population to experience increased age-related disease because of an extended lifespan. Currently, nearly 55 million people worldwide are living with Dementia, with the number predicted to increase to 78 million in 2030. Individuals living with Dementia are often assumed to lack decision-making capacity. However, decision-making capacity is time and decision specific, so individuals with Dementia often have a wide range of decision-making capabilities. Patients in our care with limited capacity are often still able to express preferences and desires. This condition is complicated by the large transition to a model of aging in place. Aging in place refers to the ability of older individuals to live independently in their homes as they age, rather than moving to an assisted living or nursing facility. This model emphasizes creating a safe and supportive environment that allows individuals to maintain their autonomy and quality of life through connection to community resources, home modifications, support services, and technology. This course provides an in-depth examination of the ethical considerations surrounding the care of patients living with dementia. Participants will explore key concepts such as autonomy, informed consent, and the challenges of decision-making in the context of cognitive decline. Through case studies and interactive discussions, the course will address the balance between respecting patient rights and ensuring their safety and well-being. Participants will learn best practices for communicating with patients, involving families in care decisions, methods to improve the care setting and navigating complex ethical dilemmas. By the end of the course, participants will be equipped with knowledge and skills to deliver compassionate, ethical care that honors the dignity and individual

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5311 - Moral Distress in Healthcare (1 Credit)

As technology has continued to develop throughout the world and our ability to artificially sustain life has improved, the instances of ethical dilemmas and moral distress have only increased. When an ethics issue arises in healthcare, the ethics issue is typically known but the correct direction of action is unclear or not delineated. This frequently arises in the way of conflicting obligations. For example, a pregnant woman with decision making capacity is in our care and is denying medical interventions to save the fetus. Do we respect patient autonomy and the patients right to decide for themselves, or do we prioritize the good of the fetus? Moral distress is experienced by workers that encounter an ethics issue where the correct direction for action is clear, but the individual is unable to act. This can be due to institutional constraints, role constraints or even legal constraints based on the location of practice. Moral distress leads to emotional discomfort experienced by healthcare professionals when they are unable to act in accordance with their ethical beliefs and becomes especially apparent when conflict is faced between personal values, institutional policies, patient wishes, or resource constraints. When individuals come together and recognize issues of moral distress, we can work more effectively as a team to support one another. Since ethical dilemmas have the potential to lead to moral distress, it's important that medical professionals have some degree of ethical competence to recognize when issues may arise. This course explores the complex issue of moral distress in the healthcare setting, where professionals confront ethical dilemmas that challenge their values and principles. Participants will examine the causes of moral distress, including systemic issues, institutional policies, and personal beliefs, and recognize the influence of moral distress.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5350 - Narrative Principles and Practices in Healthcare (3 Credits)

This course introduces students to the intellectual and clinical discipline of narrative work in healthcare. Students will explore the theoretical foundations of narrative in healthcare and participate in structured workshops to improve close reading of texts and writing skills. Requisite: 008754

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5410 - Research Methods in Health Humanities (3 Credits)

The Health Humanities Research Methods course provides comprehensive training in qualitative and interpretive research approaches used to understand lived experiences of health, illness, and healthcare through humanities and social science perspectives. Students will gain theoretical foundations in phenomenology, narrative inquiry, ethnography, discourse analysis, and arts-based methods, with particular attention to ethical approaches for working with vulnerable populations in healthcare settings. The course emphasizes how different methodological traditions - from literary analysis to visual ethnography to oral history - can reveal unique insights into how people make meaning of health experiences and navigate healthcare systems. Through hands-on research exercises, students will practice multiple data collection methods including semi-structured interviews, participant observation, close reading, visual analysis, and participatory arts-based approaches. The course pays special attention to power dynamics in healthcare research, trauma-informed practices, and methods for amplifying traditionally marginalized voices. Students will develop practical skills in research design, data collection, interpretation, and presentation while considering how different methodological choices align with research questions about lived experiences of health and illness.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5450 - Addressing Health Stigma in Social Contexts (3 Credits)

This interdisciplinary course will equip students with the tools needed to understand health stigma, to construct an explanation as to why it is so common and to explain what, if anything, should be done to address such stigma. Requisite: 008754

Grading Basis: Letter Grade

Typically Offered: Spring.

BEHH 5550 - Independent Study in Health Humanities & Health Ethics (1-3 Credits)

This independent study will permit students to pursue specialized topics and/or previously studied topics in health humanities and health ethics in greater depth and with more flexible scheduling. Requisite: 008754

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

BEHH 5655 - Introduction to Public Health Ethics (3 Credits)

This course provides learners with an introduction to public health ethics. The material explores differences between public health ethics & health care ethics, important frameworks used in public health ethical analysis, and significant practice in analyzing public health ethics cases.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5750 - Pain, Its Paradoxes & the Human Condition (3 Credits)

This course explores the lived experiences of pain, its paradoxes, and the extent to which it is a key feature of the human condition. Analyses will be drawn from history, religious studies, philosophy, literature, poetry, public health, medicine, and law.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BEHH 5850 - Clinical Ethics (3 Credits)

The purpose of this course is to introduce students to the theory, methods, history, and application of clinical ethics. Course sessions will include instructor- and student-led didactics. Students will be expected to discuss issues and cases in clinical ethics and critically analyze ethical topics and cases in oral and written formats.

Grading Basis: Letter Grade

Typically Offered: Fall.

BEHH 5910 - Race, History and Health in Brazil (3 Credits)

Brazil has a long and extensive history of African enslavement, and in the coastal city of Salvador, African influences are strong and palpable. A large diaspora from different regions of Africa was formed during the colonial period, and this has led to the constant expression—and celebration—of an African heritage in Salvador. Today, Afro-Brazilian cultural elements in music, religion, and capoeira, an Afro-Brazilian art form, are now realities around the world. Brazil's legacies of slavery, colonialism, and segregation, along with its stark socio-economic inequalities, have disproportionately affected the health and well-being of its Afro-Brazilian communities. At the same time, the country is known for its leadership in universalizing access to healthcare, including life-saving HIV treatments. Grassroots activists and organizations operate both alongside of and in opposition to state responses to ongoing epidemics, including COVID-19. Brazil's therapeutic landscape is further complicated by a sophisticated system of traditional medicine that serves as alternative and complementary treatments to widespread biomedical options. The country—and especially the city of Salvador—is thus a critical location for the study of race, history, and health. This course is a 10-day study abroad program in which students will be immersed in the history, culture, and everyday lives of Afro-Brazilians in Salvador, Brazil. The program combines homestays with Brazilian families with classroom and field experiences. Guest lectures from Brazilian experts will discuss topics such as the nation's history, health, politics, music, religion, education, and Carnival. Activities will focus on the interplay of race and health to better understand the lived experiences and rich past of Afro-Brazilians.

Grading Basis: Letter Grade

Typically Offered: Spring.

BEHH 5911 - Medicine, Nazism, & the Holocaust Study Abroad Course (3 Credits)

This immersive course explores the complex and challenging history of medicine, Nazism and the Holocaust – including site visits to Krakow, the Plaszow concentration camp, and the Auschwitz-Birkenau concentration and extermination camps – and the legacy of this history for health care and society today. Its central goal is to foster a deeper comprehension of this history and how it continues to affect contemporary medical and public health research, practice and policy. Through this lens, and in ways only accessible through the power of being present in the place where historical events unfolded, learners will gain invaluable insights into the potential impacts of racism, antisemitism, and authoritarian ideologies on health care and society. The transformative experience of visiting Krakow and Auschwitz with historians, health professionals and colleagues will equip learners with essential skills for personal and professional identity formation, including critical thinking, cross-cultural communication, and ethical reasoning in healthcare. Brief Course Description: This course includes pre-work and 2 pre-trip synchronous sessions, and then it centers around a 4-day immersive study abroad visit to Krakow, Poland. The onsite experiences include (1) a full-day walking tour with an historian of Krakow and the Plaszow concentration camp, (2) a full day at the Auschwitz-Birkenau camps, conducted in collaboration with the Auschwitz-Birkenau Memorial and Museum, (3) a day-long international conference featuring experts on the history of medical involvement in Nazism and the Holocaust, and (4) a day of workshops. Each day ends with an opportunity for group debriefing and unpacking the often-intense experiences of that day. Learners will engage in classroom and field activities led by international experts to unpack the complex interplay of medicine, public health, science and ethics during the Nazi regime and the Holocaust.

Grading Basis: Letter Grade

Typically Offered: Fall.

Biomedical Basic Science (BMSC)**BMSC 7650 - Research in Biomedical Sciences (1-3 Credits)**

Research rotation for students in the biomedical sciences in PhD program. Prereq: Consent of Instructor. Previously offered as IDPT 7650

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 20.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

BMSC 7655 - Preceptor Experience (1-5 Credits)

This course is intended for MD, MD-PhD, or other dual degree students who have successfully completed all coursework for Phases I and II of SOM curriculum, are on leave of absence from SOM and wish to maintain clinical exposure and training during the leave. Prereq: All Phase I and II SOM courses.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

BMSC 7806 - Core I: Foundations in Biomedical Sciences (6 Credits)

Course will focus on the fundamental principles of biomedical sciences. Lectures and recitations/discussions will primarily address the basics of molecular biology, biochemistry, genetics, cell biology and energetic principles. Course is typically limited to biomedical science PhD and BSBT MS students. Previously offered as IDPT 7806

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall.

BMSC 7810 - Core Topics in Biomedical Science (2 Credits)

Sections focus on different core topics in biomedical science, and will address subject areas such as protein structure and function, neurobiology, embryology, stem cell research, and cancer biology. Students can enroll in multiple Core Topic Courses topics in one semester. Previously offered as IDPT 7810.

Grading Basis: Letter Grade

Repeatable. Max Credits: 20.

AMC-PHD PhD Students only

Typically Offered: Fall.

BMSC 7811 - Responsible Conduct of Research (1 Credit)

This course provides training in the responsible conduct of biomedical research. It is geared towards early PhD graduate students and meets NIH guidelines. Ethical issues associated with specific topics commonly encountered by graduate students are presented and discussed.

Grading Basis: Letter Grade

Typically Offered: Fall.

BMSC 7812 - Rigor and Responsibility in Biomedical Research (1 Credit)

Course will integrate the concepts of rigor, repeatability and reproducibility by combining both wet and dry lab components focused on teaching these concepts and laboratory skills. We will seek to make these concepts routine considerations during the design and execution of any type of experiment. Instructor consent required.

Grading Basis: Satisfactory/Unsatisfactory

Typically Offered: Spring.

BMSC 7820 - Statistics and Data Analyses for the Biomedical Sciences (3 Credits)

This is an introductory course designed for students seeking a basic understanding of statistical concepts and applications. Students will develop statistical literacy and will be taught how to perform basic data analyses, including data summarization, graphical skills, and simple statistical methods for estimation and hypothesis testing. Students will learn how to read and evaluate statistical writing and how to write basic statistical methods. The course will include limited statistical computer programming using the R programming language. The course will not focus on mathematical formulas but will rather focus on building students' intuition and familiarity with statistical concepts. We will cover concepts such as random sampling, formulating proper hypotheses, bias, power and sample size, and multiple testing. Statistical methods will include both binary and continuous outcomes, including binomial testing, chi-square tests, t-tests, non-parametric tests and basic linear regression. Course examples will prioritize biologic examples routinely encountered in medical research studies. Prerequisites: Prospective students must be enrolled in a ORE graduate program or have explicit permission from the instructor.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

Biomedical Sciences and Biotechnology (BSBT)

BSBT 6060 - Special Topics in Biomedical Science & Biotech (1-3 Credits)

Special topics of interest to graduate students in the biomedical sciences and biotechnology fields.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

Typically Offered: Fall, Spring, Summer.

BSBT 6061 - Project Management (2 Credits)

Provides training in initiating, executing & closing a project, including the management of scope, time, cost, human resources, communication, risk and more. Highly interactive intensive course prepares students for Certified Project Management exam (internationally recognized certification). Taught by Project Management Professional.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6064 - Scientific Writing (1 Credit)

Taught by a biomedical researcher and a professional writing instructor, this 15-hour (3-week) course focuses on developing a framework for successful scientific writing practices, including how to effectively structure arguments, how to write grant proposals and more.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6065 - Case Studies in Responsible Conduct of Research (1 Credit)

Anyone conducting research using federal funding must study RCR. You'll learn expectations and regulations that permeate science. You'll understand consequences of violations to individuals and society. We'll explore misconduct through interactive video, written and video case studies, and other engaging activities.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6067 - Statistics for Biomedical Sciences (2 Credits)

Learn how and when to apply statistical procedures to answer scientific questions relevant to biomedicine, and how to critically assess statistical data for validity.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6068 - Laboratory Research in Structural Biology (1-6 Credits)

The Course BSBT 6068, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on structural biology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

BSBT 6069 - Laboratory Research in Immunology and Microbiology (1-6 Credits)

The Course BSBT 6069, Laboratory Research, with allow graduate students to engage in laboratory research training in the biomedical sciences with focus on immunology and microbiology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

BSBT 6070 - Mini-Research Rotations (1-3 Credits)

The Course BSBT 6070, Mini-Research Rotations, with allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

BSBT 6071 - Introduction to R Programming (1 Credit)

Introduction to the statistical programming language R geared primarily to biomedical science students with little to no previous programming experience. Basic features of R as a programming language and as scientific computing platform. Basics of data cleaning, visualization, and analysis.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6072 - Foundations in Biochemistry (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in biochemistry including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6073 - Foundations in Molecular Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in molecular biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6074 - Foundations in Cell Biology (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in cell biology including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6075 - Foundations in Genetics (1.5 Credits)

This short course provides a condensed and fast-paced overview of the fundamentals in genetics including research strategies and techniques. The course aims to enhance the students' ability to engage in critical scientific reasoning and problem-solving and to prepare students for the scientific analyses and discussions.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6076 - Research Explorations (1 Credit)

This course allows for exploration of SBB research labs in a "mini-rotation" format, through meeting faculty, reading literature and participating in lab group meetings and research in order to choose a research lab and prepare a short research proposal.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6078 - Seminar in Immunology and Microbiology (1 Credit)

This course provides students in the Bioinformatics in Immunology/ Microbiology program an integration of didactic knowledge with research approaches to outstanding questions in the field. Students will attend department weekly seminar followed by structured discussion.

Prerequisites - IDPT 7810 & IMMU 7630

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

BSBT 6079 - Leadership in a Global Environment (3 Credits)

The Leadership in a Global Environment course seeks to offer students a foundation for understanding the intricate and complex relationship between language, culture, communicative practices, and the role we play as individuals in the globalized work environment of today. In particular, this course is geared to emerging and developing global leaders. Today's leaders must be incredibly versatile. In fact, the entire management team needs to be able to link their industry science with value in the marketplace and tell a compelling story about what makes not just the innovation but also the company itself, special. Sometimes investors are very focused on the science of the products, and sometimes on the finance, so company leaders have to be prepared to talk about either or both. Today's leaders must be transversal: highly strategic and operational while able to understand and connect clinical, market access, commercial, finance, and strategy. The Leadership in a Global Environment course seeks to offer students a foundation for understanding the intricate and complex relationship between language, culture, communicative practices, and the role we play as individuals in the globalized work environment of today. In particular, this course is geared to emerging and developing global leaders. Today's leaders must be incredibly versatile. In fact, the entire management team needs to be able to link their industry science with value in the marketplace and tell a compelling story about what makes not just the innovation but also the company itself, special. Sometimes investors are very focused on the science of the products, and sometimes on the finance, so company leaders have to be prepared to talk about either or both. Today's leaders must be transversal: highly strategic and operational while able to understand and connect clinical, market access, commercial, finance, and strategy.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

BSBT 6110 - Introduction to Biocomputing (3 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic data set. Prerequisite: Undergraduate degree in science, technology, business, engineering or math.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

BSBT 6111 - Introduction to Biomedical Data Practices (2 Credits)

This course provides students with advance knowledge and topics in every aspects of data science.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

BSBT 6112 - Introduction to Biocomputing (2 Credits)

This course provides students with hands on experience in basic computation, database, and programming skills set as a pre-requisite for a higher level data analysis course. The students will use example in the context of biomedical and genomic dataset. Requisite: Must be simultaneously enrolled in BSBT 6113.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6113 - Data Science with R (1 Credit)

In this 4 weeks semi-independent study course, you will learn how to use the "tidyverse" programming paradigm to perform data science operation using the programming language R. At the end of the course, you will learn the basic understanding of the fundamental elements of data science, including; wrangling, exploration, visualization and modeling.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6310 - Practical Clinical Research Informatics (3 Credits)

This course provides students with hands on experience in clinical research informatics involving secondary use of electronic health record (EHR) data, clinical informatics databases, and basic clinical data science as preparation for more advanced informatics or data science coursework. Requisite: 008754 A-GRAD

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6801 - Biomedical Entrepreneurship (3 Credits)

The course addresses the essential elements of bioscience and health innovation and entrepreneurship. Prerequisites: An undergraduate degree in science, technology, business, engineering or math. Cross-listed with ENTP 6801

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

BSBT 6804 - Bioinnovation Regulations (3 Credits)

This course is designed to familiarize biomedical scientists and those interested in the business of science with the fundamentals of U.S. and international regulatory affairs regarding drug discovery and medical devices. Focus is the development of products, such as drugs, devices, diagnostic tests, and health information software, to receive U.S. and international regulatory clearance or approval for commercialization.

Grading Basis: Letter Grade

Typically Offered: Fall.

BSBT 6805 - Bioinformatics (4 Credits)

This course will simultaneously introduce students to coding principles (using R) applied to common problems in bioinformatics and data analysis. To this end, students will learn how to import high-throughput data into R, pre-process that data to account for technical anomalies resulting from the acquisition modality (e.g., RNA-Seq, ChIP-Seq), and perform a sequence of statistical analysis (e.g., ANOVA) and data visualization (e.g., heatmaps). At the completion of this course, students will be equipped with coding templates in R that they can apply to data analysis for their own research purposes. Students will also be exposed to more advanced principles of data analysis, such as training machine learning algorithms. These include unsupervised and supervised algorithms, which are commonly used for general data exploration and training diagnostic/prognostic models, respectively.

Prereq: • Mathematical Foundations: Students are expected to have a solid understanding of calculus and matrix algebra. These mathematical principles are essential for comprehending common data analysis techniques used in bioinformatics. • Programming Skills: Coding experience in any programming language is preferred but not required. The course will teach bioinformatics and coding concepts simultaneously, primarily using R as the programming language.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6806 - Communication Skills (3 Credits)

Position yourself for success biomedical research and industry careers where effective communication is essential. Learn and practice the fundamentals of effective public speaking, presenting, interviewing, and personal branding. This is a graduate level course designed for individuals in research and industry fields who are looking to refine their communication skills.

Grading Basis: Letter Grade

Typically Offered: Spring.

BSBT 6939 - Internship - Technology and Innovation (3-6 Credits)

The internship provides hands-on learning opportunities for graduate students in institutions related to technology/biotechnology, computer science, engineering, innovation and entrepreneurship. Requisite: Enrollment with permission only. Instructor consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

BSBT 6950 - Laboratory Thesis Research (1-6 Credits)

Laboratory Thesis Research with allow graduate students to engage in laboratory research training in the biomedical science.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

BSBT 7646 - Tissue Biology and Disease Mechanism (1 Credit)

This course provides an overview of organ systems and through 1) a survey of the major systems, including the cellular and molecular mechanisms underlying their function and repair, integrated with 2) common diseases, current therapies, and their mechanistic basis. Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci Core Courses).

Grading Basis: Letter Grade

Typically Offered: Fall.

Biostatistics (BIOS)

BIOS 6310 - Practical Clinical Research Informatics (3 Credits)

This course provides students with hands on experience in clinical research informatics involving secondary use of electronic health record (EHR) data, clinical informatics databases, and basic clinical data science as preparation for more advanced informatics or data science coursework.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6420 - Data Science and Analytics of Continuous Clinical Data (3 Credits)

The central focus of this course is on the generation, modeling, and analysis of data collected in a clinical or biomedical context, with an emphasis on temporal analysis. Analysis techniques will be anchored to solving real-world clinical and biomedical problems.

Grading Basis: Letter Grade

Typically Offered: Spring.

BIOS 6601 - Applied Biostatistics I (3 Credits)

Applied biostatistical methods including descriptive and statistical inference; odds ratio and relative risk, probability theory, parameter estimation, tests for comparing statistics of two or more groups, correlation and linear regression and overviews of: multiple and logistic regression and survival analysis.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

BIOS 6602 - Applied Biostatistics II (3 Credits)

A continuation of BIOS 6601 extending the basic principles of descriptive and inferential statistics to modeling more complex relationships using linear regression, logistic regression, and Cox regression. The statistical package SAS is used extensively. Multiple optional lab sessions offered.

Prerequisite: BIOS 6601

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6603 - Statistical Computing - SAS (1 Credit)

This course will emphasize statistical analysis and data interpretation through use of the SAS statistical computing package. Instruction will be provided through laboratory exercises and interactive demonstrations

Prereq/Coreq: BIOS 6601 Restriction: Credit may be counted toward a CSPH degree for only one of BIOS 6603, 6604 or 6605

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Summer.

BIOS 6611 - Biostatistical Methods I (3 Credits)

This first course in applied statistics covers basic descriptive methods and probability; parametric and nonparametric inference for the one- and two-sample location problem; ANOVA, ANCOVA, and multiple linear regression. Matrix notation, R, and SAS are used. Prerequisite: differential calculus or permission of instructor

Grading Basis: Letter Grade

A-PUBH BIOS

Typically Offered: Fall.

BIOS 6612 - Biostatistical Methods II (3 Credits)

This is a continuation of BIOS 6611 covering univariate linear modeling and emphasizing multiple regression and analysis of variance. Logistic regression and methods for correlated data are also covered. Matrix algebra and the statistical package SAS will be used. Prereq: BIOS 6611. Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 6618 - Advanced Biostatistical Methods I (4 Credits)

First of a two-semester applied statistics sequence designed to equip students with a practical knowledge of the quantitative methods most frequently used in medical research. This course is an introduction to applied biostatistics. Concepts will be illustrated using examples in the fields of medicine, biology, epidemiology and public health. Written and graphical presentation and interpretation of methods and results will be emphasized.

Grading Basis: Letter Grade

Typically Offered: Fall.

BIOS 6619 - Advanced Biostatistical Methods II (4 Credits)

Second of a two-semester applied statistics sequence designed to equip students with a practical knowledge of the quantitative methods most frequently used in medical research. This course is to develop comfort applying and understanding the mechanisms behind common biostatistical methods. Concepts will be illustrated using examples in the fields of medicine, biology, epidemiology and public health. Written and graphical presentation and interpretation of methods and results will be emphasized.

Grading Basis: Letter Grade

Typically Offered: Spring.

BIOS 6621 - Statistical Consulting (2 Credits)

Students will gain experience with statistical consulting and common statistical problems and techniques encountered in consulting through a combination of instruction, real examples, and consultations with investigators. Emphasis will be on methods for effective communication with investigators. Corequisites: BIOS 6611 or consent of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 6623 - Advanced Data Analysis (4 Credits)

This course teaches the students how to be effective collaborators. Students will learn to modify project hypotheses to be statistical hypotheses. The students will identify and perform the appropriate data analyses and communicate their analyses both verbally and in writing. prerequisite: BIOS 6601 and BIOS 6602 or BIOS 6611 and BIOS 6612 or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 6624 - Advanced Statistical Methods and Analysis (4 Credits)

This second-year graduate level biostatistics/data science course develops advanced data analysis and collaboration skills. The course is based on five projects using methodologies such as Bayesian analysis, simulation, correlated data, missing data, and study design for grant development. Pre-requisite: BIOS 6611, BIOS 6612, BIOS 6631, BIOS 6632 or permission of the instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 6628 - Latent Variable Methods (3 Credits)

Covers statistical approaches commonly used in behavioral sciences research, including reliability analysis, exploratory and confirmatory factor analysis, path analysis, structural equation modeling, and advance modeling procedures. Students will analyze data using statistical software, interpret results, and write summaries of findings. Prerequisite: BIOS 6601, BIOS 6602 or equivalent. Cross-listed: CBHS 7010

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 6629 - Applied Survival and Longitudinal Data Analysis (3 Credits)

This course will focus on the application of regression modeling to time-to-event and longitudinal data. Descriptive and inferential methods will be developed for each type of data with an emphasis on graphical inspection at all stages of analysis. Prerequisite BIOS 6601 and 6602 or BIOS 6611 and 6612 and permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 6631 - Statistical Theory I (4 Credits)

This course presents an introductory coverage of the theory of discrete and continuous random variables and applications to statistical problems. Topics include probability theory, transformations and expectations, common families of distributions, multiple random variables, and properties of a random sample. Prereq: Differential and integral calculus.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

BIOS 6632 - Statistical Theory II (4 Credits)

This course covers theoretical and applied fundamentals of statistical inference. The course is a continuation of BIOS 6631. The primary topics include point estimation, hypothesis testing, interval estimation and asymptotic methods. Prereq: Differential and integral calculus. Prereq: BIOS 6631

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

BIOS 6640 - R for Data Science (3 Credits)

Statistical programming in R, including data managing, vectors, matrices, frames, subscripting, loops, functions, input/output, packages, etc. Concepts and methods for reproducible research will be covered as well as computationally intensive statistical methods. These methods are used to analyze data and present results.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall, Spring.

BIOS 6641 - Causal Inference (3 Credits)

Basic knowledge of and analytic skills in causal inference. Topics include potential outcomes framework for causal inference; experimental and observational studies; identification assumptions for causal parameters; instrumental variable method; regression discontinuity design; propensity score based methods and causal mediation analysis. Prerequisite: BIOS 6611 or BIOS 6602 or permission of instructor; knowledge of R

Restriction: Offered in variable terms and years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall, Spring.

BIOS 6642 - Introduction to Python Programming (3 Credits)

This first course in programming using Python covers basic concepts such as variables, data types, iteration, flow of control, input/output, and functions and advanced concepts such as object oriented programming. Statistics related examples, homework and projects may be used.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6643 - Analysis of Longitudinal Data (3 Credits)

Theory and application of models appropriate for clustered and longitudinal data are studied. Models for different types of outcome variables (e.g., normal, Poisson, binomial) are covered, with an emphasis on linear mixed models for normal outcomes. Prerequisites: BIOS 6632 and BIOS 6612 or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

BIOS 6644 - Practical Data Wrangling (2 Credits)

Data Wrangling is the process of getting data into a format which is useful for science. This course will provide students with a diverse set of tools, strategies and practices which can dramatically reduce the pain and wasted time often associated with wrangling and how to leverage the innumerable free resources available to everyone.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

BIOS 6645 - Predictive Analytics (3 Credits)

This course will focus on the development, evaluation and validation of prediction models using observational studies and data, with an emphasis on both model-based and algorithmic approaches. In addition to regular assignments, students will apply their knowledge by developing, evaluating and validating models in three projects.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6646 - Survival Analysis (3 Credits)

This course will introduce the statistical treatment of time-to-event data with applications to biology, medicine, and public health. It focuses on understanding key methodologies through a strong theoretical foundation, covering nonparametric group comparisons, semi-parametric regression models, parametric models, and state-of-the-art methods for survival analysis. Prerequisites include knowledge of distribution theory, calculus, linear algebra, and programming in R. Prerequisite: BIOS 6611 & BIOS 6631 or instructor permission. Corequisite: BIOS 6612 & BIOS 6632 or instructor permission.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6648 - Design and Conduct of Clinical Research (3 Credits)

Design and conduct of clinical research studies. Intended for non-biostatistics students. Topics include: specifying the research question, study endpoints, study populations, study interventions, sample size evaluation, and choice of comparison groups. Common study designs and methods for study conduct are described. Prerequisite: BIOS 6601 or BIOS 6611 or consent of instructor. Offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

BIOS 6649 - Clinical Trials: Statistical Design and Monitoring (3 Credits)

Statistical and scientific design of clinical trials. Intended for biostatistics graduate students. Topics include: scientific and statistical aspects of the research question, endpoints, treatments, sample size evaluation. A wide range of trial designs including group sequential and adaptive trial designs are covered. Pre/Corequisite: BIOS 6612 or instructor permission. Offered spring semester odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6651 - BIOS MS Research Paper (1-6 Credits)

Masters research paper in Biostatistics is completed under this course.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

BIOS 6655 - Statistical Methods for Genetic Association Studies (3 Credits)

This course is designed to give an introduction to statistical methods in genetic association studies. Topics include quantitative and population genetic concepts relevant to genetic association studies, design strategies, and analysis methods for case-control and family data. Pre-Requisite: BIOS 6611, BIOS 6612 (can be co-requisite) or equivalent graduate level (bio)statistics course with instructor consent. Proficiency in coding in statistical software R.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

BIOS 6660 - Analysis of Genomic Data using R and Bioconductor (3 Credits)

This course provides students with hands on experience in solving real life biological problems using the statistical software R and Bioconductor. Students will work and communicate with participating researchers and clinicians on their case studies of genomics data. Pre/Corequisite BIOS 6602 or 6612, or consent of instructor. Offered variable years and terms. Crosslisted with CPBS 7660.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 6670 - Special Topics: Biostatistics (1-4 Credits)

Special interest areas of current biostatistics research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check with CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 99.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

BIOS 6680 - Data Management Using SAS (3 Credits)

Students will learn how to use SAS software for data management to prepare data for analyses. Main topics include importing and exporting data, variable and dataset manipulations. Introductions to producing reports, basic statistics, figures and SAS macros are also covered.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

BIOS 6681 - Structured Query Language Using SAS PROC SQL (1 Credit)

This course will cover how to use SQL to query data, combine data vertically using set operators and horizontally using joins. Additional topics include incorporating subqueries and how to create and manage tables, views and indexes.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Summer.

BIOS 6682 - Fundamentals of Python Programming (1 Credit)

This course provides an introduction to Python programming language. Students are introduced to core programming concepts such as variables, types, data structures, conditionals, loops, and functions. This hands-on course includes an overview of the several tools available for writing and running Python.

Grading Basis: Letter Grade

Typically Offered: Fall.

BIOS 6685 - Introduction to Public Health Informatics (3 Credits)

Survey course explores public health informatics topics such as current public health informatics initiatives, data sources, public health information systems, standards, health information exchange, system development/procurement, threats to information security and privacy, and decision support in the public health context.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

BIOS 6840 - Independent Study for MPH in Biostatistics (1-3 Credits)

Faculty directed independent study for MPH students in topics related to biostatistics. Restriction: Open only to MPH students. Department Consent Required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring, Summer.

BIOS 6841 - Independent Study for MS in Biostatistics (1-4 Credits)

Resources of the program are available to those MS students who elect to carry out research in chosen topics related to biostatistics. A faculty member will provide guidance throughout the project. Restriction: Open only to MS students or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring, Summer.

BIOS 6950 - Masters Thesis: Biostatistics (1-6 Credits)

Biostatistics Master thesis work is completed under this course.

Grading Basis: Letter Grade with IP

A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

BIOS 6990 - MPH Capstone Preparation - BIOS (1 Credit)

MPH Capstone Preparation will focus on developing the basis for a strong capstone project, culminating in the finalization of the capstone proposal that meets the expectations of the concentration. Prereq: BIOS 6623 or concurrent enrollment in BIOS 6623 or permission of the instructor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

This course is restricted to students with a MPhD-MPH plan of study only.

Typically Offered: Fall, Spring, Summer.

BIOS 7645 - PhD Predictive Analytics (3 Credits)

This course will focus on the development, evaluation and validation of prediction models using observational studies and data, with an emphasis on both model-based and algorithmic approaches. Students will develop, evaluate and validate models in 3 projects. Students should be very familiar with programming in R. Prerequisites: BIOS 6611, BIOS 6612, BIOS 6623, BIOS 6631, BIOS 6632

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

BIOS 7659 - Statistical Methods in Genomics (3 Credits)

Analysis of genomic data is an integral component of biomedical research. This course will give an introduction to problems in genomics and review both the pioneering and more recent statistical methods developed for analyzing expression data and molecular sequences. BIOS 6611/6612 or BIOS 6631/6632 or permission of instructor. Offered variable term and year.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring.

BIOS 7670 - Advanced Special Topics - Biostatistics (1-3 Credits)

Advanced special interest areas of current biostatistics research and practice are presented. The course format is lecture and discussion or seminar. Check the CSPH Website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring, Summer.

BIOS 7712 - Statistical Methods for Correlated Data (1 Credit)

This course will cover statistical models and methods for serially correlated data, including autoregressive models, Markov models, and Markov chain Monte Carlo methods. Prereq: BIOS 6643

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

BIOS 7713 - Statistical Methods for Missing Data (1-2 Credits)

This course covers methodological research being carried out for longitudinal studies with missing data. Topics may include missing data mechanisms, non-ignorable missing data, multiple imputation, mixture models and sample size determinations. 1 credit or 2 credit course versions offered in variable years. Prereq: BIOS 6643

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

BIOS 7714 - Advanced Statistical Computing (3 Credits)

This course covers the theory & implementation of estimation algorithms used in statistical analysis. Possible topics: numerical analysis (quadrature), optimization (Newton-Raphson, EM algorithm, stochastic optimization), and simulation (pseudo-random numbers, rejection sampling, Markov chain methods). Prerequisites: BIOS 6611, BIOS 6612, BIOS 6631, BIOS 6632, or permission of instructor. This course is intended for students in the PHD/Biostatistics program.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring.

BIOS 7715 - Stochastic Modeling (2 Credits)

This course covers theory, application and software for stochastic models commonly used in health sciences, including time to event, recurrent event, multi-type recurrent event, and multi-state models. The intended audience is Biostatistics PhD students. Prerequisite: BIOS 6643 and BIOS 6632 or consent of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 7717 - Bayesian Biostatistical Methods (3 Credits)

This course will introduce students to modern Bayesian statistical modeling and inference. Topics include a comparison of frequentist and Bayesian approaches, Markov Chain Monte Carlo (MCMC) methods for simulating posterior distributions, inference for regression, hierarchical models and mixed models. Prerequisites: BIOS 6612 and BIOS 6632 or permission of instructor. Offered variable term and year. Instructor consent required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

BIOS 7718 - Introduction to Biomedical Image Analysis (3 Credits)

This course will provide students with the computational skills to tackle a biomedical image analysis problem. Students will also improve their Python coding skills, present scientific papers and participate in scientific discussions. Prerequisite: BIOS 6611 or BIOS 6612, linear algebra, experience with Python/Matlab or permission of instructor. Restriction: Offered in variable terms and years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

BIOS 7719 - Information Visualization (3 Credits)

Information visualization studies interactive visualization techniques for analyzing abstract data. This course introduces design, development, and validation approaches with applications in various biological and biomedical domains. Cross-listed with CPBS 7719.

Grading Basis: Letter Grade

Typically Offered: Spring.

BIOS 7720 - Applied Functional Data Analysis (2 Credits)

An introduction to key concepts and methods in functional data analysis and their applications in public health. Topics include penalized regression, smoothing and smoothing parameter selection, generalized additive models, sparse functional data, functional regression and functional mixed effects models. BIOS 6612, BIOS 6632 and programming skills in R or permission of instructor. A background in longitudinal data analysis (BIOS 6643) is strongly recommended but not required.

Grading Basis: Letter Grade

Typically Offered: Spring.

BIOS 7721 - Joint Modeling of Longitudinal and Survival Data (1 Credit)

An introduction to joint modeling of longitudinal and survival data and its application in health research. Topics include linear mixed effects models, survival analysis, random effects joint model, and possibly dynamic prediction. BIOS 6643 Longitudinal Data or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Spring.

BIOS 7722 - Model Selection (2 Credits)

This course is intended as a survey of methods for choosing an optimal statistical model in the context of biostatistical and public health applications. The course will focus on both the applications of these methods as well as the theory underlying their usage. Prerequisite: BIOS 6611, BIOS 6612, BIOS 6631 and BIOS 6632 or by permission of the Instructor

Grading Basis: Letter Grade

Typically Offered: Spring.

BIOS 7731 - Advanced Mathematical Statistics I (3 Credits)

This course will provide the framework for understanding the formal concepts, models and assumptions in statistical theory. Topics include random variables, parameter estimation, measures of performance, hypothesis testing and asymptotic approximations. Prerequisite: BIOS 6632 or equivalent. This course is intended for students in the Biostatistics PhD program.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

BIOS 7732 - Theory/Algorithms Data Science (3 Credits)

Interplay of algorithms, their implication and theoretical understanding for certain algorithms and the basics of optimization theory. Implement/prototype algorithms in optimization theory and statistical computing. Learning to read the literature on data science and machine learning and comprehending the algorithmic techniques utilized. Pre-requisite: BIOS 6632 and programming knowledge or equivalent, or permission of Instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

BIOS 7747 - Machine Learning for Biomedical Applications (3 Credits)

Theoretical background of unsupervised and supervised machine learning methods and their application to biomedical problem solving. In addition to understanding methodological details, students will learn how to use and apply machine learning methods in Python and improve their coding skills. Prerequisites: Biostatistical methods (e.g. BIOS 6611, BIOS 6612), linear algebra (e.g. MATH 3191) and Python programming (e.g. BIOS 6642), or permission of the instructor.

Grading Basis: Letter Grade

Typically Offered: Fall.

BIOS 7748 - Deep Learning (3 Credits)

This course will cover the fundamentals and recent advances in deep learning and its applications in biomedical domains. It will include a variety of deep learning algorithms and models, as well as cutting-edge topics such as generative artificial intelligence (AI). Students will learn how to design deep neural networks and apply them to various types of biomedical data. Additionally, students will learn to implement deep models using Python and PyTorch, present deep learning research articles, and write scientific reports. Prereq: BIOS 6618, BIOS 6619, Linear Algebra (e.g. MATH 3191), and Python Programming (e.g. BIOS 6642) or permission of instructor. Coreq: Machine Learning (e.g. BIOS 7747).

Grading Basis: Letter Grade

Typically Offered: Fall.

BIOS 7749 - Advanced Methods in the Design of Clinical Trials (3 Credits)

Scientific and statistical design of clinical trials including the scientific parameterization of outcome space; frequentist and Bayesian standards for scientific evidence and statistical inference; and fixed-sample, group sequential and adaptive trial designs. The course will primarily use R.

Prerequisite: BIOS 6624 or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

BIOS 7899 - Independent Study for PhD - Biostatistics (1-4 Credits)

This course is for the PhD student who wishes to pursue one or more topics in depth. These topics may involve biostatistical material, or biological material necessary to the student's biostatistical work.

Supervision by a full-time faculty member is necessary. . Prereq: PhD student or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

BIOS 8990 - Doctoral Thesis (1-10 Credits)

PhD Dissertation work is completed under this course.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Cancer Biology (CANB)

CANB 7600 - Molecular Mechanisms of Cancer (4 Credits)

This is an advanced course that will focus on mechanisms of cancer initiation and progression. The course will include didactic presentations, primary literature analysis and workshops. The course is open to all graduate students but requires some prior knowledge of Cancer Biology.

Grading Basis: Letter Grade

Typically Offered: Spring.

CANB 7602 - Special Topics in Cancer Biology (1 Credit)

Special topics of particular interest to graduate students in the Cancer Biology program. Registration requires department approval. Max hours: 4 credits/4 topics. Requisite: 008754

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Spring.

CANB 7610 - Pathobiology of Cancer Mini-Course (1 Credit)

Provide understanding of clinical issues associated with human cancer. Contains didactic and lab components. The latter will focus on pathology of human tumors at macroscopic/microscopic levels. Students will gain understanding of cancer diagnosis/epidemiology/treatment through student of specific tumor types. Prerequisite: Students are required to take this course twice during their time in the CANB program. IDPT 7806, IDPT 7807, IDPT 7808, IDPT 7809.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Spring.

CANB 7613 - Research Seminars and Journal Club (1 Credit)

Current research topics in experimental pathology, virology, and tumor biology. Graduate students and faculty presentations.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7620 - Histophysiology (3 Credits)

Discussions of cell interactions, tissue physiology, and renewal based upon the histologic cell types and structures present. Where pertinent, pathologic alterations will be introduced to facilitate identification of the important normal functions/structures.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CANB 7640 - Bioinformatics (2 Credits)

This course introduces basic concepts of bioinformatics needed to perform large-scale genomic data mining. A computer workshop will provide students with the relevant and minimal skills to analyze, access and visualize high-throughput data using open source programs and public databases. Prerequisites: IDPT 7806, IDPT 7807, IDPT 7808, IDPT 7809 ; Corequisite: BIOS 6606

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7650 - Research in Cancer Biology (1-10 Credits)

Research work in cancer biology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CANB 7660 - Advanced Topics: CANB (1 Credit)

The specific topics covered in this course vary from year to year. For Fall 2011 the topic will be "Cancer cells and their environment: how the extracellular milieu influences tumor progression" offered by Dr. Schedin.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7680 - Hypothesis Development and Experimental Design (3 Credits)

Students will discuss recent research papers and develop new hypotheses that extend the findings in the papers. Research proposals to test the hypothesis will be written and an oral defense of the proposal will be performed. Prereq: CANB 7600, IDPT 7806, IDPT 7807, IDPT 7808, IDPT 7809.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CANB 7690 - Grant Writing in Cancer Biology (2 Credits)

This course will use didactic presentations and writing workshops to develop a fellowship grant in the NIH style. Focus will be on grantsmanship, persuasive writing and the peer review system. This course will run consecutively with CANB7600. Corequisite with CANB 7600

Grading Basis: Letter Grade

Typically Offered: Spring.

CANB 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in cancer biology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Candidate for Degree (CAND)

CAND 6940 - Candidate for Degree (1 Credit)

Prereq: Consent of Instructor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Cell Biol, Stem Cells & Development (CSDV)

CSDV 7000 - Cells, Stem Cells, and Development: Advanced Topics Discussion (1 Credit)

This course is a student-led paper discussion focusing on advanced topics pertaining to cell biology, stem cells, and developmental biology. Students will select, present, and discuss primary articles on diverse topics within these fields. Restriction: Students in the CSD program only, 2nd year and beyond.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CSDV 7100 - Advanced Writing Workshop (1 Credit)

This course is a student-led writing workshop focusing on developing writing skills through submission, editing, and discussion of drafts. Draft types will be chosen by the students enrolled and will include manuscripts, theses, and documents related to career development. Students must have completed/passed their comprehensive exam in respective program; priority to CSDV PhD students.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

CSDV 7605 - Stem Cells and Development: An Integrated Approach (3-4 Credits)

Integrative introductory course incorporating the related fields of Cell Biology/Developmental Biology/Stem Cells. Through lectures, contemporary literature discussions, student presentations, enrollees will gain a sophisticated understanding of the biological concepts/experimental approaches underlying current understanding of cell, developmental, and stem cell biology. Pre-Requisite: IDPT 7806

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CSDV 7606 - Critical Analysis of Research in CSD (3 Credits)

First-year students will learn to critically evaluate scientific literature in preparation for writing and critiquing research grant proposals. Primary literature will focus on cell and developmental biology related to CSDV 7605. Each session concludes with written mini-proposals and peer critiques. For CSDV & BSP first year students. If possible, limit to CSDV-PHD and BMSC-PHD plans. Else: Prerequisite: IDPT 7806 & 7810; Corequisite: CSDV 7605

Grading Basis: Letter Grade

Typically Offered: Spring.

CSDV 7607 - Genetics of Development, Disease, and Regeneration (2 Credits)

Course participants will read, present and discuss scientific literature addressing topics in developmental, disease, and regenerative genetics. The course will be organized into 4 blocks, with each block focusing on one topic. Prerequisite - CSDV 7605

Grading Basis: Letter Grade

Typically Offered: Spring.

CSDV 7650 - Research: CSDV (1-5 Credits)

Research work in cell biology, stem cells and development. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CSDV 7670 - Advanced Topics: CSDV (2 Credits)

Spring/Summer, 2019 Course is an introduction to concepts and practice of organ and tissue modeling using adult stem cell organoid culture systems. Lectures/article reviews will be balanced with a significant, hands-on lab component to gain experience in organoid culture techniques. Prereq: IDPT 7806, 7810

Grading Basis: Letter Grade

Repeatable. Max Credits: 7.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CSDV 7675 - Practical Teaching Experience in CSDV (1 Credit)

Students will be paired with a CSD faculty mentor to develop a class session for IDPT 7801 courses directed by CSD faculty, CSDV 7605 or CSDV 7670 (depending on student interest and faculty availability). Each session will include a practice presentation and post-session critique. Open to CSDV students in Year 2+. Prerequisite: CSDV 7605; 2nd year+ CSDV-PhD students only

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

CSDV 7676 - Practical Mentoring Experience in CSDV (1 Credit)

This course will train students in effective mentoring skills for a research lab setting. Class meetings will be discussion-based, with topics including project design, communication, conflict resolution, creating equitable and inclusive mentoring relationships, and more.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

CSDV 7677 - Science Communication in the Time of COVID (1 Credit)

Science communication is important for most careers in science. In this class, we will focus on communicating science to the general public through oral presentations, humor (Science Riot workshop), discussions, and written articles. During this unusual year, our outreach efforts will be focused on the Covid-19 vaccines.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

CSDV 7680 - Introduction to Microscopy (1 Credit)

This course will introduce Second-year students (open to other levels) to the principles of image acquisition, analysis, data management & sharing, and rigor & reproducibility. Microscopy content will be mostly focused on systems available to CSD students. Limited lectures and select readings will prepare students for hands on work using prepared modules in class and group discussions. Prerequisite: Core Topics required (BMSC 7806, 7810), limited to 2nd year students and beyond

Grading Basis: Pass/Fail

Typically Offered: Fall.

CSDV 7850 - Independent Study in Cell Biology, Stem Cells and Development (1-5 Credits)

Independent Study is to allow students to take professional school course for credit or to gain a defined expertise with faculty mentor other than thesis advisor. Consent of faculty member offering the independent study and Program Director required. Prereq: : IDPT 7806, 7807, 7808, 7809 (BIOM Science Core Courses), and CSDV 7605.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CSDV 8990 - Doctoral Thesis (1-10 Credits)

Doctoral Thesis work in Cell biology, Stem Cells and Development. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Clinical Science (CLSC)

CLSC 6060 - Analysis Modeling and Design (3 Credits)

Collaborative offering with Denver Campus, emphasizing information requirements analysis, logical system specification, detailed system design. Topics include structured system development methodologies, prototyping, file design, systems architecture, systems testing, software design strategies. Students use case tool to develop system specifications.. Crosslisted: ISMG 6060.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6080 - Database Management Systems (3 Credits)

Offered as a collaborative offering with UCD, this course focuses on the development and management of database systems to support business operations. Important subjects include semantic data modeling, normalization, SQL, fourth generation languages, and client-server database applications. Crosslisted: ISMG 6080.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6210 - Research Seminars in Clinical Science (1 Credit)

This course provides an overview of the types of clinical translational studies being conducted by senior CLSC doctoral students. The interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages of training, mentors and faculty.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6211 - Immersion in Community Engagement (3 Credits)

The course focuses on community-based participatory research, community engagement and understanding health disparities through a community immersion experience. Restrictions: Students need to contact the CLSC program prior to registering.

Grading Basis: Letter Grade

Typically Offered: Summer.

CLSC 6260 - Conducting Clinical Trials for Investigators (2 Credits)

Course is for investigators conducting clinical trials. Course covers good clinical practices/regulations that surround setting up and running clinical trials. Clinical studies and popular press articles highlighting what can go wrong in clinical trials will be reviewed and discussed.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

CLSC 6270 - Critical Appraisal Seminars in Clinical Science (1 Credit)

This course provides an overview of the approaches for critically appraising common study designs published in the clinical and translational sciences literature, as well as other sources of information.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 6300 - Scientific Grant Review Process: CCTSI Proposals MS (1 Credit)

Students will understand and participate in the process of scientific review of human subject research protocols submitted to the University of Colorado Denver Clinical Translational Research Centers at University Hospital and The Children's Hospital. Prereq: BIOS 6601, BIOS 6602 (or BIOS 6611, BIOS 6612) & CLSC 7500.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CLSC 6460 - Rare Diseases Translational Research and Clinical Trial Applications (1 Credit)

The purpose of this course is to deepen understanding of human rare diseases and the translational research approaches to rare disease research. The course will broadly cover rare disease epidemiology, patient/subject identification and registries, data extraction from databases, subject recruitment, rare disease clinical trial designs, pediatric considerations, and grant funding. Prerequisites: Familiarity with biostatistics and study design is recommended.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 6560 - Designs and Mixed Methods in Implementation Research (3 Credits)

This course provides an in-depth examination of study designs, comparative effectiveness research, and qualitative, quantitative and mixed methods approaches to dissemination and implementation research. The focus is application to health care and public health settings. Prerequisite: CLSC 7653.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CLSC 6580 - Qualitative and Mixed Methods in Health Research (3 Credits)

This course provides an in-depth examination of qualitative and mixed methods approaches that are pertinent to health research.

Grading Basis: Letter Grade

Typically Offered: Spring.

CLSC 6650 - Guided Research Tutorial - Masters (1-3 Credits)

An independent study course developed by the student and the appropriate faculty member based on the area of study. Students meet regularly with the selected course instructor, the student and course instructor will develop a course plan prior to registration.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6653 - Key Concepts in Neurodevelopmental Disabilities I (2 Credits)

Course represents part one of two-part interdisciplinary course series focused on systems, options for diagnosis/assessment and alternatives for service provision related to children/youth/young adults with neurodevelopmental and related disabilities and their families to address this population's special health care needs. Prereq: A degree in healthcare profession or related field or instructor consent.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

CLSC 6654 - Key Concepts in Neurodevelopmental Disabilities II (2 Credits)

This course represents part two of a two-part interdisciplinary course series focused on service provision, intervention strategies and service provision related to children/youth/young adults with neurodevelopmental and related disabilities and their families to address this population's special health care needs. Prereq: A degree in health care profession or related field or instructor consent and completion of CLSC 6653.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CLSC 6661 - Leadership Dialogues I (2 Credits)

This interdisciplinary leadership course focuses on leadership strategies needed for providing family-centered, culturally competent, community-based services for children with special needs and their families. Prereq: A degree in health care profession or related field or instructor consent.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6662 - Leadership Dialogues II (1 Credit)

This interdisciplinary leadership course focuses becoming change agents to better provide family-centered, culturally competent, community-based services for children with special needs and their families. Prereq: a degree in health care profession or related field or instructor consent.

CLSC 6661

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CLSC 6663 - Intervention for Individuals with Developmental Disabilities (3 Credits)

This interdisciplinary course reviews evidence-based practices in intervention for children with autism and other neurodevelopmental disorders, presented through lectures, critical readings of the literature, case discussions, and case presentations. Prereq: Degree in health care profession or related field or consent of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6668 - Screening/Assessment for Children/Youth with Autism/Neurodevelopmental Disabilities (3 Credits)

This interdisciplinary course presents best practices in screening/assessment for autism, focusing on: identification of symptoms of autism; differentiation of autism from other disorders; recognition of symptoms; examination of culture on clinical presentation; and approaches to share observations. prereq: a degree in health care profession or related fields (or consent of instructor).

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CLSC 6699 - Masters Research Project: Publishable Paper (1-6 Credits)

During course students working with his/her research mentor and research project committee to plan, execute, write Final Research Project in form of a publishable paper. In addition, students prepare for Final Research Project Examination. This is a capstone course. Prerequisite: Consent of program. BIOS 6601 and BIOS 6602 or BIOS 6611 and BIOS 6612, CLSC 7150, EPID 6630.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

CLSC 6750 - Designing for Dissemination, Sustainability, and Equity (2 Credits)

This course provides an introduction to designing for the dissemination and sustainability of health innovations in clinical and translational research and practice, using a co-creation engagement approach, and with a focus on equity.

Grading Basis: Letter Grade

Typically Offered: Fall.

CLSC 6770 - Implementation Science Grant and Article Funding (2 Credits)

This course provides an in-depth examination of issues in submitting successful grant proposals in Dissemination & Implementation research. The course will build upon good general practices in grant and manuscript preparation and submission. Prerequisite: CLSC 7653

Grading Basis: Letter Grade

Typically Offered: Summer.

CLSC 6850 - Adv Topics: Dissemination and Implementation Sci (1 Credit)

Provides an overview of intermediate and advanced dissemination and implementation (D&I) science research methods in a small group discussion format. This interactive seminar series structure allows for interdisciplinary scientific dialogue among students at various stages. Prerequisite: CLSC 7653.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

CLSC 6950 - Masters Research Project: Thesis (1-6 Credits)

During this course students plan, execute, and write the Final Research Project in the form of a Masters thesis. In addition, students will prepare for the Final Research Project Examination. This is a capstone course.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

CLSC 7101 - Grant Writing I (1 Credit)

The purpose of this course is to develop and improve your skills in writing successful grant applications and participating in the critique and review process of grants. Prerequisites: BIOS 6601 and EPID 6630. Course Restrictions: CLSC students, unless written approval of Course Director. Grading Basis: Letter Grade
Repeatable. Max Credits: 3.
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

CLSC 7102 - Grant Writing II (1 Credit)

The purpose of this course is to develop and improve your skills in writing successful grant applications and participating in the critique and review process of grants. Prerequisites: BIOS 6601, EPID 6630, CLSC 7101. Course Restrictions: CLSC students, unless written approval of Course Director. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

CLSC 7150 - Ethics and Responsible Conduct of Research (1 Credit)

Course provides overview of the field of ethics in clinical research. Topics include historical background, current regulations, IRB requirements on human subjects protection issues. Students will learn how to develop approaches to conduct ethical human subjects research in an optimal manner. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

CLSC 7152 - Ethics and Responsible Conduct of Research in the Digital Age (1 Credit)

This course will provide an overview of the evolving ethical issues in clinical, translational and public health research involving digital data and technologies. Grading Basis: Letter Grade with IP
Typically Offered: Spring.

CLSC 7202 - Clinical Outcomes and Applications (2 Credits)

The Clinical Outcomes and Applications course introduces students to key concepts and methods in health outcomes research, focusing on how to measure, analyze, and apply outcomes data in research and health policy. Through a mix of lectures, case studies, and hands-on activities, students will learn to design research questions, evaluate study designs, and explore the real-world impact of outcomes research on healthcare delivery. Prereq: BIOS 6601 and BIOS 6602 or BIOS 6611 and EPID 6630. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

CLSC 7300 - Scientific Grant Review Process: CCTSI Proposals (1 Credit)

Students will understand and participate in the process of scientific review of human subject research protocols submitted to the University of Colorado Denver Clinical Translational Research Centers at University Hospital and the Children's Hospital. Prereq: BIOS 6601 BIOS 6602 or BIOS 6611 and BIOS 6612. Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring.

CLSC 7650 - Guided Research Tutorial - Doctoral (1-3 Credits)

This is an independent study course developed by student and appropriate faculty member based on area of study. Students meet regularly with selected course instructor. The student and course instructor will develop course plan prior to registration of the course. Prereq: Consent of program approved course plan closed registration. Grading Basis: Letter Grade
Repeatable. Max Credits: 3.
A-GRAD Restricted to graduate students only.
Typically Offered: Fall, Spring, Summer.

CLSC 7653 - Dissemination and Implementation Research in Health (3 Credits)

Introduces dissemination and implementation (D&I) research and practice in the context of health (i.e. translational research in health). This is a graduate level course and students should have a working understanding of study designs and statistics. Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

CLSC 7663 - Context & Adaptation in D&I Research (2 Credits)

This course covers concepts, frameworks, and methods for understanding and assessing context and guiding adaptations as relevant to dissemination and implementation (D&I) health research and practice. Prerequisite - CLSC 7653. Grading Basis: Letter Grade
Typically Offered: Spring.

CLSC 8990 - Doctoral Thesis (1-10 Credits)

This course involves the student working with his/her research mentor and research project committee develop, design and execute a clinical science doctoral study as well as to write up the project as a thesis. Prerequisite: Program consent. BIOS 6601 or BIOS 6611, BIOS 6602 or BIOS 6680 and HSMP 6617, CLSC 7150, EPID 6630, BIOS 6648 or EPID 6626 or HSMP 6670. Restrictions: Only CLSC PhD students or collaborative CLSC and CSPH Health Services Research Students. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 99.
A-GRAD Restricted to graduate students only.
Additional Information: Report as Full Time.
Typically Offered: Fall, Spring, Summer.

Clinical Sciences-CSU (VSCS)

VSCS 5330 - Epidemiologic Infections Disease/Zoonosis (3 Credits)

Epidemiologic features of infectious and parasitic diseases that have a major impact on community medicine. Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Colorado State University.
Typically Offered: Spring.

VSCS 6480 - Food Animal Production and Food Safety (2 Credits)

Basic orientation to food animal production units, heard health concepts, and issues of food safety from preharvest through processing and distribution. Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Colorado State University.
Typically Offered: Spring.

VSCS 7950 - Independent Study - Epidemiology (1-5 Credits)
Specialized study in epidemiology under supervision of faculty.
Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Community Behavioral Health Science (CBHS)

CBHS 6610 - Social and Behavioral Factors and Health (3 Credits)
Considers social, behavioral, and cultural factors that affect the health of individuals and populations, and contribute to health disparities. Development, implementation and evaluation of programs and policies to promote and sustain health environments and lifestyles are examined. Online in summer.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Summer.

CBHS 6611 - Foundations of Health Behavior (3 Credits)
Course will cover basic theories, concepts, models from a range of social/behavioral disciplines used in public health research and practice. Applications of theoretical frameworks in specifying multiple targets and levels of intervention to public health research will be addressed.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

CBHS 6612 - Methods in Research and Evaluation (3 Credits)
Course covers social science research methods, including qualitative/quantitative research designs, data collection, and program evaluation (formative, process, outcome), to assess effectiveness of public health programs.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CBHS 6613 - Program Planning and Implementation (3 Credits)
Course examines planning and implementation process with specific focus on health promotion programs. Students will learn about: needs assessments; specifying program objectives; using behavior change theory and evidence-based strategies; developing program, evaluation, adoption, implementation & sustainability plans. Prereq: CBHS 6611 and CBHS 6612

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

CBHS 6614 - Childhood Obesity (1 Credit)

This course provides an overview of childhood obesity assessment, prevention and treatment. Key childhood obesity topics and challenges will be covered within the context of public health. NOTE: This course cannot be taken for credit toward the Public Health Nutrition program.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 6615 - Health Literacy & Public Health (2 Credits)

This course provides an in-depth examination of health literacy...what it is, what implications it has for health, and how healthcare and public health professionals can ensure that treatment and intermention approaches are appropriate for people across helath literacy levels.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 6616 - Intimate Partner Violence: Epidemiology (1 Credit)

This course will provide an overview of intimate partner violence, addressing the epidemiology of the problem; theory of causes and consequences; and evidence-based prevention and treatment strategies. Critiques of past approaches and gaps in research and prevention will be highlighted.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 6617 - Nutrition and Public Health (1 Credit)

This survey course begins with an overview of nutrition and its relation to health and disease. The learner will gain experience in reading and evaluating published nutrition research. The second half of the course focuses on public health nutrition topics. This course cannot be taken for credit toward the PHN program.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 6618 - CURRENT RESEARCH AM INDIAN ALASKA NAT CHILD HEALTH DEV (1 Credit)

The Native Children's Research Exchange assembles researchers studying child and adolescent development in American Indian and Alaska Native communities. Students will attend this conference and examine lessons learned in presentations and thru background readings, facilitated by faculty.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 6619 - Public Health in the Global Community (3 Credits)

This course is a study of population health issues around the world. It enables students to assess the current health status of a country and understand and critically appraise the magnitude and likely causes of various health-related conditions. Credit will only be given for one of the following courses: PSCY 5170, ANTP 5710 or CBHS 6619

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring, Summer.

CBHS 6620 - Survey Research (3 Credits)

Course examines survey research methodology, including face-to-face, telephone, mail and Internet surveys, includes: developing and ordering questions; formatting; reliability and validity; sampling; implementation; maximizing response rate; data issues; survey ethics and reporting. Offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 6621 - Introduction to Maternal and Child Health (3 Credits)
 Introduction to the interdisciplinary field of maternal and child health and the complex health issues facing women, children and families. By incorporating a life course perspective students will explore how communities and governments work together to protect and advance the unique needs of this population's health and well-being.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6622 - Qualitative Research Methods (3 Credits)
 This course is designed to teach graduate students how and when to use a variety of qualitative methods in public health research. Students will gain experience and skills in designing, implementing, analyzing, and writing up the results of qualitative research.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6624 - Community Health Assessment (3 Credits)
 Course teaches how to assess the social, cultural, economic, physical, and environmental components of population health. Students use national/local demographic and health data. Includes working with community clients and off-campus community-based fieldwork. Prereq: EPID 6630; CBHS 6610 or CBHS 6611.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall, Spring.

CBHS 6625 - Current Regional Issues in Maternal & Child Health (1 Credit)
 Current regional issues, best practices and emerging practices in maternal and child health are explored at a large regional public health conference, and debriefed daily with an instructor. Pre-conference study and post-conference synthesis are required.
 Grading Basis: Letter Grade
 Repeatable. Max Credits: 2.
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6626 - Public Health and Aging (2 Credits)
 Introduces students to 1) factors across the social-ecological spectrum that will affect population patterns of health, disease, and risk factors to older adults; and 2) appropriate responses by public health, aging services and the research community. Offered even years.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Spring.

CBHS 6627 - Maternal Nutrition (1 Credit)
 This course provides an overview of nutrition issues affecting pregnant and breastfeeding women. Using a life course perspective, the course integrates clinical information with public health practice. This course cannot be taken for credit toward the PHN program. Requisite: CBHS 6617 Nutrition and Public Health or a basic nutrition course at the undergraduate or graduate level
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Spring.

CBHS 6628 - Tech-based health Promotion (3 Credits)
 This course will introduce students to health promotion programs delivered using computers, the internet and mobile phones. Students will learn strategies for designing, implementing and evaluating technology-based programs and will develop a technology-based health promotion program as a class project.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6629 - Health and Human Rights (3 Credits)
 Examines the relationship between health and human rights with an emphasis on the principles of confidentiality, autonomy, justice, and beneficence. Using case studies, students will discuss practical, concrete strategies for improving health and well-being while protecting rights. Course offered in odd years.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Spring.

CBHS 6631 - Introduction to Sexual and Reproductive Health (1 Credit)
 Introduction to the biology of human sexuality and reproduction, components of healthy sexual relationships, prevention of sexually transmitted infections and fertility control and issues related to sexual orientation. NOTE: Credit toward a CSPH certificate or degree will only be given for CBHS 6631 or CHBH 5750
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Spring.

CBHS 6634 - Adolescent Health (1 Credit)
 This course will provide an overview of the major adolescent health issues, with a strong focus on the United States. The course will take a public health perspective and integrate a review of evidence-based prevention strategies into each health topic covered.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6635 - Child Nutrition (1 Credit)
 This course provides an overview of child nutrition from infancy to adolescence. Key child nutrition topics and challenges will be covered within the context of public health. Notes: CBHS 6617 Nutrition and Public Health or a basic nutrition course at the undergraduate or graduate level or permission of the instructor.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6636 - Early Childhood Hlth, ACEs, Toxic Stress, Hlth Equity (1 Credit)
 Early childhood health issues and how social conditions, public policies and inequities impact young children. By advancing a compelling documentary series, early life conditions such as adverse childhood experiences, toxic stress and epigenetics are examined along with their impact on brain architecture, resilience and health outcomes.
 Grading Basis: Letter Grade
 A-PUBH1 Graduate students and public health certificate students only.
 Typically Offered: Fall.

CBHS 6637 - Applied Quantitative Analysis for Comm Hlth Science (3 Credits)

This course is designed to provide students with an introduction to database management and common statistical analyses used in community health science. Emphasis will be placed on understanding how to prepare data to be analyzed and on being able to run and evaluate common statistical techniques using SPSS.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 6639 - Health Behavior/Primary Care Field Work Experience (1 Credit)

This course is designed to afford students an opportunity to apply health behavior theoretical knowledge in a real world setting. Students will provide wellness coaching on health behaviors to patients in a primary care setting.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

CBHS 6640 - Leadership for Public Health Practice (3 Credits)

Part of a 2-year sequence. Focus of year 1: 1) assessing, using, and developing personal strengths for leadership, 2) acquiring basic skills for developing and supporting the work of others in the workplace, 3) building teams for successful work in public health, and 4) constructing a personal model for leadership in public health. Prerequisite: Enrollment in Leadership and Public Health Practice MPH concentration required. Instructor consent required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 6641 - Developmental Screening, Strategies and Referral (1 Credit)

This course will review early brain and child development, risk factors and conditions, typical and atypical development, developmental screening tools, early intervention programs and services, financing of services and the role of public health in service delivery for Children and Youth with Special Health Care Needs (CYSHCN).

Grading Basis: Letter Grade

Typically Offered: Spring.

CBHS 6642 - Applied Program Evaluation-Field School (1-3 Credits)

This course is designed to provide an applied learning experience that engages MPH students in all aspects of a program evaluation process over 2 semesters. Students will work with an actual client and design and carry out a program evaluation. Prerequisite: CBHS 6612. Instructor consent required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

CBHS 6643 - Women's Health: A Public Health Perspective (2 Credits)

Study and analysis of specific women's health issues from a public health and epidemiologic viewpoint including, but not limited to, social determinants of health, health disparities, health equity, public health prevention, education and advocacy domestically and internationally.

Grading Basis: Letter Grade

Typically Offered: Summer.

CBHS 6644 - Social Determinants of AIAN Health (3 Credits)

A thorough examination and analysis of health inequities affecting Native people in the context of social and environmental factors influencing AIAN health. Students will examine factors influencing Native health at the individual, interpersonal, organizational, community and societal levels, focusing both on community needs and assets.

Grading Basis: Letter Grade

Typically Offered: Spring.

CBHS 6645 - Latino Health I (2 Credits)

The aim of this course is to provide a theoretically grounded and experientially focused course specific to Latino/a/x/e Health in which students are challenged to learn, critically analyze and apply practical and conceptual knowledge regarding social determinants of health and health equity. The course will also cover discussion and analytic methods, reporting, visualization, problem-solving and data driven strategies to impact decisions and other facets of Latinx health care and services to the community.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 6646 - Community Participatory Research & Review with American Indians/Alaska Natives (2 Credits)

Basic framework of community-based participatory research (CBPR) and explore how this model works with Tribal and Urban AIAN communities. This course will also present the historical basis, rationale, conceptual framing, and processes of tribal research and review that are necessary to know when working with tribal communities.

Grading Basis: Letter Grade

Typically Offered: Summer.

CBHS 6647 - Foundations of American Indian Alaska Native Health (3 Credits)

This course covers critical policies and historical context that influences the current state of AIAN health, physical and psychological health implications of government policies and clarifying the health implications these policies have on the health and well-being of AIAN people.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 6648 - Ethical Considerations in AIAN Health (1 Credit)

Explores multiple dimensions of health-related work with American Indian Alaska Native populations using ethical framing to explore tensions between cultural and mainstream approaches to health; research and programs implemented in the context of tribal sovereignty; and ethical approaches to addressing health in resource-scarce settings.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Summer.

CBHS 6650 - MPH Research Paper (1-2 Credits)

Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data. Permission of Department required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

CBHS 6652 - Introduction to Mixed-Methods Research and Evaluation (1 Credit)

This is a 1 credit course directed at developing the skills and knowledge needed to formulate mixed-methodological research and evaluation questions; identify a mixed-methods research design; collect and analyze both quantitative and qualitative data; interpret the mixed results; write up the mixed results; and critique the quality of mixed-methods studies.

Grading Basis: Letter Grade

Typically Offered: Summer.

CBHS 6653 - Applied Dissemination and Implementation Science for Public Health Practitioners (3 Credits)

This course focuses on applied methods for disseminating, implementing and evaluating evidence-based health interventions in various practice settings. Students will learn skills for identifying a need or practice gap, selecting and adapting an evidence-based intervention, and developing an implementation and evaluation plan that is guided by D&I models, frameworks and theories. Students will also have the opportunity to engage with community stakeholders.

Grading Basis: Letter Grade

Typically Offered: Fall.

CBHS 6654 - Community-Engaged Participatory Methods: From Theory to Practice (2 Credits)

This course provides an overview of theories, principles, and strategies associated with leveraging community expertise through participatory methods in research and public health practice. We will model many different practices and tools that can be used to authentically engage in processes of community inquiry, problem solving, and action planning to impact community change. The course will emphasize the importance of building trust, collaboration, and shared power within communities.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

CBHS 6655 - Latino Health II (2 Credits)

This course focuses on community-based participatory research, community engagement and understanding health disparities and health equity. The course provides an immersive learning experience specific to Latino/a/x/e Health in which students will have direct experience to apply practical and conceptual knowledge in the context of the Latino/a/x/e population-based health program interests.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 6665 - Latino Health Mentored Project (2 Credits)

This course applies practical and conceptual knowledge gained in the Latino Health courses and electives regarding improving Latino Health. It will apply analytic methods, reporting, visualization, problem-solving and data driven strategies to impact decisions and other facets of Latinx health care and service to the community.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

CBHS 6670 - Special Topics: Community & Behavioral Health (1-3 Credits)

Special interest areas of community and behavioral health are analyzed in depth. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 99.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

CBHS 6840 - Independent Study - Community & Behavioral Health. (1-3 Credits)

Faculty directed independent study in topics related to community and behavioral health. Department consent required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

CBHS 6990 - MPH Capstone Preparation - CBHS (1 Credit)

MPH Capstone Preparation will focus on developing the basis for a strong capstone project, culminating in the finalization of the capstone proposal that meets the expectations of the concentration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

This course is restricted to students with a MPHD-MPH plan of study only.

Typically Offered: Fall, Spring, Summer.

CBHS 7010 - Latent Variable Methods (3 Credits)

Covers statistical approaches commonly used in behavioral sciences research, including reliability analysis, exploratory and confirmatory factor analysis, path analysis, structural equation modeling, and advance modeling procedures. Students will analyze data using statistical software, interpret results, and write summaries of findings. Pre-Requisite: BIOS 6601 and 6602 or equivalent.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

CBHS 7020 - DrPH Seminar in Leadership (3 Credits)

Leadership topics: vision, values, collaborative action, teamwork, and practices with skills and application at personal, interpersonal and organizational levels necessary for effective leadership. Restrictions: Restricted to CSPH DrPH students. Cross-listed: EPID 7020.

Grading Basis: Letter Grade with IP

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 7030 - DrPH Directed Reading (1-2 Credits)

This course will prepare DrPH students for comprehensive exams & dissertation research by becoming an expert in their specific areas of research, including understanding of historical development of specific areas, current research findings in the specific areas, & current practice. Requires permission of course director and instructor. Cross-listed with EPID 7030.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

CBHS 7637 - Doctoral Advanced Quantitative Analysis for Community Health Sciences (3 Credits)

This course is designed to create competency in database management and common univariate, bivariate and multi-variable statistical analyses used in community health science. Emphasis will be placed on understanding how to prepare data to be analyzed and on being able to run and interpret statistical techniques using SPSS.

Grading Basis: Letter Grade

Typically Offered: Spring.

CBHS 7638 - Advanced Qualitative Research Methods (3 Credits)

This course provides advanced graduate students in public health instruction in advanced qualitative methodologies and training in collection, analyzing, interpreting and writing qualitative research.

Grading Basis: Letter Grade

Typically Offered: Spring.

CBHS 7670 - CBH Advanced Seminar (3 Credits)

This doctoral level course will address theory and practice at a level beyond that covered in CBH Master's level courses. Students will acquire advanced skills in developing, testing, and applying health behavior theory and methods to public health problems. Prereq: CBHS 6611, 6612, 6613, 6624 or equivalent, permission of instructor. Restrictions: Enrollment in DrPH or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

CBHS 8991 - DrPH Dissertation - Community & Behavioral Health (1-10 Credits)

DrPH Dissertation work in Community and Behavioral Health

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Community Dentistry and Population Health (DSCD)

DSCD 5501 - Community Public Health 1 (0.1-5 Credits)

This course will introduce students to an array of topics that will jump-start the dental school experience. In addition to didactic work, students will visit off-campus care delivery settings, especially those serving under-served or special populations. A major focus will be risk-based, prevention using a management of disease approach.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSCD 5502 - Nutrition (0.1-5 Credits)

This course provides information on the chemistry and biochemistry of nutrients, food composition, food sources, selection of an adequate diet and nutritional surveillance with an emphasis on the oral cavity and the practice of dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSCD 5504 - Communication & Person-Centered Care (0.1-5 Credits)

This course exposes the student to the aspects of health communication, health literacy and person centered model of care. This approach will guide the students to focus on patients' resources and needs.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSCD 5505 - Dental Ethics and Professionalism (0.1-5 Credits)

This course will cover concepts and methods for effective reasoning to reflect critically upon individual's values and ethical standards. Topics cover foundational concepts in ethics and professionalism in dental practice, public health, and research.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Summer.

DSCD 5855 - Independent Study (0.1-5 Credits)

Independent Study

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSCD 5877 - Independent Study (0.1-5 Credits)

Independent Study

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSCD 6601 - Community Public Health 2 (0.1-5 Credits)

This course will build upon Community Public Health I course and amalgamates public health principles and community engagement experiences.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall.

DSCD 6622 - Managing Your Dental Student Practice 1 (0.1-5 Credits)

Course provides students with knowledge/skills to make the transition from pre-clinic to clinical patient. Competencies established in infection control, documentation/record keeping, patient management, medico-legal implications, ethical implications, professionalism, organization skills, communication skills, auxiliary utilization, and equipment/instrument utilization.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSCD 6623 - Managing Your Dental Student Practice 2 (0.1-5 Credits)

Course provides students with knowledge/skills to make the transition from pre-clinic to clinical patient. Competencies established in infection control, documentation/record keeping, patient management, medico-legal implications, ethical implications, professionalism, organization skills, communication skills, auxiliary utilization, and

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 7702 - Integration for Patient Care 1 (0.1-10 Credits)

This is the first part of a 2-course sequence in which students integrate their biomedical, behavioral, and clinical sciences knowledge through clinical applications.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSCD 7703 - Integration for Patient Care 2 (0.1-10 Credits)

This is the second part of a 2-course sequence in which students integrate their biomedical, behavioral, and clinical sciences knowledge through clinical applications.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 7705 - Clinical Transformations: Interprofessional Education (0.1-5 Credits)

This course, taught in a team-based format in a simulated clinical environment, evaluates campus-wide competencies in teamwork, collaborative interprofessional practice, quality and safety. Students explore health care professional roles, and build communication skills with members of the health care team/patient/family.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSCD 7706 - Clinical Transformations: Interprofessional Education (0.1-5 Credits)

This course, taught in a team-based format in a simulated clinical environment, evaluates campus-wide competencies in teamwork, collaborative interprofessional practice, quality and safety. Students explore health care professional roles, and build communication skills with members of the health care team/patient/family.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 7709 - Community Public Health 3 (0.1-5 Credits)

This course exposes students to the public aspects of oral health care. It identifies the significance and scope of public health programs at all levels of government and relates the public activities to the private practice of dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSCD 7710 - Behavioral Health Sciences (0.1-5 Credits)

This course develops foundational knowledge in mental health/disorders, and enhances skills in building rapport and motivating patients to change health behaviors, through lecture and two standardized patient interviews. Reviews managing anxious or fearful patients, and communication skills including cross-cultural communication.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall.

DSCD 7711 - Gerontology & Geriatric Health Care (0.1-5 Credits)

This course addresses clinical considerations for older adult patients and provides a basic understanding of the physiologic, pharmacologic, psychological and social aspects of aging. Reviews pathological changes that affect oral health treatment of dental diseases and patient management.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall.

DSCD 7713 - INBDE Preparation Course 1 (0.1-10 Credits)

This is part one of a 2-course independent-study series in which students utilize Integrated National Board Dental Exam (INBDE) practice questions and supplementary study materials, and take a mock INBDE in preparation for challenging the INBDE beginning in the DS3 Summer Semester.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 7720 - Behavioral Health, Gerontology and Geriatrics (0.1-5 Credits)

Developing foundational knowledge in mental health/illness (mental health literacy), geriatrics and care for adult patients with developmental disabilities. Additionally at enhancing skills in building rapport/motivating patients for adoption of health behaviors, through lecture and two standardized patient interview experiences.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSCD 7726 - Dental Practice Planning (0.1-5 Credits)

Teaches students to make basic decisions relating to planning/implementation of private practice. Primary focus on practice arrangements, business formats, dental associateships, buying a practice, designing and equipping dental office, financing practice, leases, debt management, personal/professional insurance, and selecting professional advisors.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSCD 7730 - Adult Special Health Care Need Dentistry (0.1-5 Credits)

To introduce students to medical problems/disabilities affecting patients who will be treated in the School's Special Care Clinic. This includes foundational knowledge in the features of common congenital disabilities, proper communication techniques, and assessment of the oral health treatment strategies most compatible for the patient.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSCD 7791 - Community-Based Clinical Dentistry 1 (ACTS) (0.1-5 Credits)

Students are required to complete assignments to practice in community-based ACTS Program sites. The specific objectives of these clinical assignments vary according to the site assigned each student. Sites include multi-disciplinary community health care centers, institution- or hospital-based treatment centers, & private practices.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSCD 7796 - Special Care Clinic A (0.1-5 Credits)

This course is designed to introduce dental students to provide dental treatment to the special needs population. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 7797 - Special Care Clinic B (0.1-5 Credits)

This course is designed to introduce dental students to provide dental treatment to the special needs population. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSCD 8812 - Dental Ethics and Jurisprudence (0.1-5 Credits)

This course prepares students for appropriate conduct consistent with the legal and ethical principles of the dental profession. It lays the foundations for each student's continued growth with respect to the legal and ethical obligations of professionalism.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 8822 - Dental Practice Management & Leadership (0.1-5 Credits)

Primary focus is on financial records, billing and collections, professional insurance, fees, clinical records, third party relations, case presentation, practice analysis, dental practice marketing, and personnel management.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSCD 8847 - Comprehensive Patient Care Clinic H (0.1-11 Credits)

Continuation of advanced comprehensive patient care activities for DS 4 dental students not registered for Integrated Care Clinical Dentistry.

Grading Basis: Letter Grade

Typically Offered: Fall.

DSCD 8848 - Comprehensive Patient Care Clinic J (0.1-11 Credits)
Continuation of advanced comprehensive patient care activities for DS 4 dental students not registered for Integrated Care Clinical Dentistry.
Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Spring.

DSCD 8866 - Independent Study (0.1-10 Credits)
Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Spring.

DSCD 8892 - Community-Based Clinical Dentistry 2 (ACTS) (0.1-10 Credits)
Students complete six weeks (may elect an additional eighteen weeks) in a non-metropolitan community-based educational site. Objectives of clinical experiences vary according to site assignment and include rural community health centers, psychiatric hospitals, migrant health care, or private practice locations.
Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DSCD 8893 - Community-Based Clinical Dentistry 3 (ACTS) (0.1-10 Credits)
Students complete six weeks (may elect an additional eighteen weeks) in a non-metropolitan community-based educational site. Objectives of clinical experiences vary according to site assignment and include rural community health centers, psychiatric hospitals, migrant health care, or private practice locations.
Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Spring.

DSCD 8896 - Special Care Clinic C (0.1-5 Credits)
This course is designed to introduce dental students to provide dental treatment to the special needs population. Department consent required.
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

Community Health-UNC (CHBH)

CHBH 5000 - Stress Management (3 Credits)
A holistic approach to stress management, with cognitive and theoretical knowledge and stress reduction techniques to prevent or alleviate physical symptoms of stress.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall, Spring, Summer.

CHBH 5050 - Health Communications and the Media (3 Credits)
Focuses on the design, production, evaluation and acquisition of appropriate media and materials for health education/promotion programs.
Grading Basis: Letter Grade
Repeatable. Max Credits: 99.
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall.

CHBH 5080 - UNC Special Topics (3 Credits)
This course will be a forum to discuss important topics related to community and behavioral health. Such topic areas can include: preparation for field work in culturally diverse communities, historical trauma and health and others. Topics offered will change by semester, see specific schedule.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall, Spring, Summer.

CHBH 5090 - Behavior Change Theories (3 Credits)
Review theories of behavior and behavior change as they relate to current health issues. Health behavior change models will be examined and applied.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall.

CHBH 5100 - International Health: Cross Cultural Comparisons (3 Credits)
This class explores the multicultural aspects of health and international comparisons of various health indicators. Students will examine specific health problems, and the nature of health care delivery worldwide. This course is only offered during select semesters. Please check the CSPH schedule of classes each semester to verify offering.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall, Spring, Summer.

CHBH 5200 - UNC Foundations in Public Health (2 Credits)
This course examines the historical and conceptual bases of public health, the key issues and problems faced by the public health system, and the tools available for the protection and enhancement of the public's health.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall.

CHBH 5250 - Contemporary Issues in School Health (3 Credits)
This course examines the relationship between child/adolescent health and their school experience. The course will be organized around the eight components of the Coordinated School Health Program Model. Current issues and approaches to school health will also be presented. This course is offered Fall of odd years only.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall.

CHBH 5300 - Strategies for Community Health Promotion (3 Credits)
This course examines the effectiveness of a wide range of community strategies used in health promotion/disease prevention programs.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Spring.

CHBH 5320 - Physical Activity and Public Health (3 Credits)

An examination of physical activity and the public health implications of physical inactivity. Emphasis will be placed on epidemiologic evidence of physical activity benefits and chronic disease prevention. This course is offered Spring of even years only.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

CHBH 5330 - Physical Activity Interventions in the Community (3 Credits)

This course is designed to acquaint graduate students with theory-based interventions to increase participation in physical activity. The course will cover a variety of evidence-based approaches to physical activity promotion targeting various sub-populations and settings within the community.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

CHBH 5350 - Effective Community Health Engagement (3 Credits)

This course will enable students to develop skills necessary to effectively work with and within a variety of communities to promote public health.

Topics include historical impacts, effective theories and strategies, appropriate tools to consider and others. Prerequisite: CHBH 5300 or Consent of Instructor

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

CHBH 5500 - Environmental Health (3 Credits)

Investigate and discuss the relationships of environmental health problems to human health and welfare. Include sources of these problems, their recognition and control and current research studies.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

CHBH 5680 - Rural Community Health Issues (3 Credits)

A study of social, economic, political, and cultural influences that impact the health of individuals and families in rural communities. This course focuses on improving health status and developing culturally appropriate and effective interventions and services in rural settings.

Grading Basis: Letter Grade

Additional Information: Univ of Northern Colorado.

Typically Offered: Summer.

CHBH 5750 - Public Health Issues in Reproductive Health (3 Credits)

This course will examine reproductive health issues that impact society and public health. Topics include pregnancy, childbirth, teen pregnancy, sexually transmitted infections, birth control, infertility, abstinence only educational programs and comprehensive sexuality education.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Summer.

CHBH 6100 - Program Planning and Evaluation (3 Credits)

Theories and practices of program planning and evaluation including needs assessment, planning approaches, selection of strategies, data collection and analysis, evaluation design, program implementation and utilization of evaluation data. Prereq: CHBH 5090 or consent of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

CHBH 6120 - Statistical Applications in Public Health (3 Credits)

Applied statistical methods for students in public health. Developing statistical literacy and an ability to perform basic statistics, data summarizations and hypothesis testing using statistical software will be emphasized.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

CHBH 6150 - Methods in Public Health Research and Evaluation (3 Credits)

Public health research methods, qualitative/quantitative research designs, data collection/analysis and program evaluation. Students will conduct an evaluation project with a local public health agency. Prerequisite: CHBH 6120 or consent of instructor. Cannot apply both this course and CBHS 6612 towards the MPH degree.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

CHBH 6200 - UNC Epidemiology (3 Credits)

Epidemiological principles analyzed with an emphasis on selected topical issues, infectious and chronic/degenerative diseases, research design and analysis. Practical applications of statistical and epidemiological methods.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

CHBH 6220 - Directed Studies (1-4 Credits)

Individualized investigation under the direct supervision of a faculty member. Minimum of 37.5 clock hours required per credit hour. Repeatable. Maximum concurrent enrollment is two times. Restrictions: Instructor consent.

Grading Basis: Letter Grade

Repeatable. Max Credits: 8.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

CHBH 6350 - Policy, Advocacy, Leadership & Management in Community Health (3 Credits)

Health policy, advocacy, leadership and management is a multidisciplinary field of public health practice that is concerned with the delivery, quality and costs of public health services. Pre-Requisite: PUBH 6600 or consent of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

CHBH 6860 - Master of Public Health Capstone Project (2 Credits)
Independent project in which student demonstrates public health competencies. Includes public presentation of project. Prereq: CHBH 6930 or concurrent. Consent of instructor required.
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall, Spring, Summer.

CHBH 6930 - Master of Public Health Practicum (2 Credits)
Theory and skills applied in a public health setting. Students must complete a minimum of 150 practicum field hours incorporating core competencies. Prerequisite: CHBH 6100 and consent of instructor.
Grading Basis: Satisfactory/Unsatisfactory w/IP
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall, Spring, Summer.

CHBH 6990 - MPH Research Project - UNC (1-6 Credits)
Optional supervised research project for Master of Public Health candidates in Health Education. Content to be jointly determined by student and sponsoring professor.
Grading Basis: Satisfactory/Unsatisfactory w/IP
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Univ of Northern Colorado.
Typically Offered: Fall, Spring, Summer.

Community-Based Hospice & Palliative Medicine (CHPM)

CHPM 7001 - Comm-Based Hospice and Pall Med Fellowship - A (8 Credits)
For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

CHPM 7002 - Comm-Based Hospice and Pall Med Fellowship - B (8 Credits)
For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

CHPM 7003 - Comm-Based Hospice and Pall Med Fellowship - C (4 Credits)
For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

CHPM 7004 - Comm-Based Hospice and Pall Med Fellowship - D (8 Credits)
For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

CHPM 7005 - Comm-Based Hospice and Pall Med Fellowship - E (8 Credits)
For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Spring.

CHPM 7006 - Comm-Based Hospice and Pall Med Fellowship - F (4 Credits)
For physicians MSPC students who are accepted as CB-HPM Fellows. Graduate Medical Education and supervision for fellows to complete all clinical requirements for patient care and meet HPM Milestones. Pre- or Co-Requisite - PALC 6511/12
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

Computational Bioscience (CPBS)

CPBS 7001 - Computer Science for Biologists (5 Credits)
This course is an introduction to the fundamental concepts of computer science, the central ideas of computing, and the practices of computational thinking; designed for the basic science PhD programs. It will engage students in activities that allow them to competently apply CS tools to their field.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Spring.

CPBS 7601 - Computing Skills in the Biomedical Sciences (2 Credits)
To introduce the skills needed to perform reproducible and high-quality computational research. Topics include version control with Git, integrated development environments, software development fundamentals, Data management and Tidyverse, high performance computing and parallel computing, workflows and orchestration, and code documentation and readability. Prerequisites: Permission of Bioinformatics faculty.
Grading Basis: Letter Grade
A-GRAD Restricted to graduate students only.
Typically Offered: Fall.

CPBS 7602 - Introduction to Big Data in the Biomedical Science (2 Credits)
To introduce standard methods in the analysis of high-dimensional biomedical data including supervised and unsupervised learning, dimension reduction, classification, clustering, and big data visualization. This course will prepare students to participate in rotations and take more advanced classes in these areas as electives. Prerequisites: Permission of Bioinformatics Faculty Crosslisted Course: IDPT 7802.
Grading Basis: Letter Grade
Typically Offered: Fall.

CPBS 7605 - Ethics in Bioinformatics (1 Credit)

Discussions of professional conduct, social implications of research and questions raised by biomedical research, with an emphasis on topics relevant to computational biologists. Active student participation is required. Offered every other year.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

CPBS 7606 - Statistics for the Basic Sciences (3 Credits)

This course provides an overview of fundamental concepts in statistics such as hypothesis testing and estimation and it provides an overview of statistical methods (for example, regression and analysis of variance) that apply to many areas of science. Crosslisted Course: BIOS 6606.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

CPBS 7620 - Advanced Genome Analysis (2 Credits)

Introduction to genomics emphasizing gaining familiarity with: analysis, utilization of genomic data. Topics: sequencing, mapping genomes, transcriptomics, human genome, evolution, genomic disorders, bioinformatics, statistics, population variation, epigenomics, proteomics, metagenomics, microbiome analysis, functional genomics, ethics.

Crosslisted Course: HMGP 7620, STBB 7620, and MICB 7620

Grading Basis: Letter Grade

Typically Offered: Spring.

CPBS 7630 - Computational Methods for Data Challenges in Biomed (3 Credits)

Covers three computational data modules: Bioinformatics, Clinical Informatics, and Public Health Informatics. Cases are from three biomedical big data initiatives; the Grand Opportunity Exome Sequencing Project (GO-ESP), The Cancer Genome Atlas (TCGA), and Library of Integrated Network-Based Cellular Signature (LINCS). Prerequisite: CPBS 7711 & CPBS 7712

Grading Basis: Letter Grade

Typically Offered: Fall.

CPBS 7640 - Bioinformatics in Linguistics (3 Credits)

This course will be structured around understanding problems, understanding algorithms, and working through solutions from bioinformatics, computational biology, natural language processing, and linguistics. Prerequisite: CPBS 7711; corequisite: CPBS 7712

Grading Basis: Letter Grade

Typically Offered: Spring.

CPBS 7650 - Research in Computational Bioscience (1-5 Credits)

Research work in Computational Bioscience. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CPBS 7655 - Statistical Methods in Genetic Association Studies (3 Credits)

This course is designed to give an introduction to statistical methods in genetic association studies. Topics include an introduction to population genetics topics relevant to genetic association studies, design strategies, and analysis methods for case-control and family data. Prereq: BIOS 6612 or permission of instructor. Crosslisted Course: BIOS 6655.

Grading Basis: Letter Grade

Typically Offered: Fall.

CPBS 7659 - Statistical Methods in Genomics (3 Credits)

This course will give an introduction to statistical methods for analyzing molecular sequences and genomic data. Topics include hidden Markov models for sequence alignment, molecular evolution and gene expression data analysis. Prereq: BIOS 6611 or equivalent graduate level statistics course with consent of instructor. Crosslisted Course: BIOS 6659

(sponsoring department) / BIOS 7659

Grading Basis: Letter Grade

Typically Offered: Spring.

CPBS 7660 - Analysis of Genomics Data Using R and Bioconductor (2 Credits)

This course provides students with hands on experience in solving real life biological problems using the statistical software R and Bioconductor.

Students will work and communicate with participating researchers and clinicians on their case studies of genomics data. Pre/Corequisite BIOS 6602 or 6612, or consent of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

CPBS 7712 - Research Methods in Biomedical Informatics (4 Credits)

This course focuses on application of algorithms to analysis of different types of big data and provides training in how to plan, develop, execute and report on research in computational biology. Topics include: 1) Molecular Data; 2) Biomedical data; 3) Drug/disease data.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

CPBS 7791 - Readings in Computational Bioscience (1 Credit)

A seminar course in which students read and present recent publications from the primary computational bioscience literature. Prereq: Consent of instructor.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CPBS 7792 - Special Topics in Computational Bioscience (1-3 Credits)

Topic varies by semester. Designed to give students a chance to evaluate critically some practical or theoretical problem under faculty supervision and to present results of their thinking to fellow students and instructors for critical evaluation. Prerequisites: Permission of Instructor.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

CPBS 8990 - Doctoral Thesis (1-10 Credits)

Doctoral Thesis work in Computational Bioscience. Prerequisites: Permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

DDS Electives (DSEL)

DSEL 9100 - Elective - Advanced Readings in Pediatric Dentistry (0.1-5 Credits)

Elective seminar offered to interested DS3 students. Each week a different topic in pediatric dentistry will be covered. Students will be expected to read and discuss relevant, current, peer reviewed journal articles and to complete one final assignment.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DSEL 9102 - Trifinio Guatemala Dental Elective (0.1-5 Credits)

This course is offered to eligible students who wish to travel for one week to Trifinio, Guatemala to provide comprehensive dental care at the CU Center for Global Health's Trifinio Health Clinic. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DSEL 9105 - Perio After Dark Elective (0.1-5 Credits)

This course is designed to make the student more familiar with the normal periodontium, to supplement current surgical periodontics knowledge, and to reiterate important concepts regarding the epidemiology, etiology, and pathogenesis of periodontal disease.

Requirement: Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEL 9111 - Graduate Periodontics Dental Student Assisting Elective (0.1-10 Credits)

Provides dental students exposure to the periodontal specialty of dentistry. Provides dental students exposure to medically complex patients and how these patients are treated. It allows observation in complex treatment planning, surgical & non-surgical periodontal procedures, simple & complex extractions, & intravenous moderate sedation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DSEL 9112 - Blending the Art of Observation and Listening (0.5-10 Credits)

Observation, active listening, accurate description and interpretation are essential clinical skills. To develop these skills, visual and performance art provide a creative, safe and culturally diverse environment for refining these abilities. Participation in experiential and expert guided activities in galleries frame the experience.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

DSEL 9113 - Dental Community Engagement & Service (0.1-10 Credits)

This course expands knowledge and skills in community-based dental care and strengthens understanding of public health issues and service. Topics to be reinforced include the importance of community engagement, service, and equity as they relate to oral health.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring, Summer.

DSEL 9114 - Global Health, Policy and Humanitarianism (0.1-10 Credits)

This course will cover many aspects of global health and oral health of low-resource populations. Topics covered are global burden of disease, global health policy, oral health for refugee and immigrant populations and ethics and sustainability related to humanitarian work.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

DSEL 9115 - Advanced Studies in Community Dentistry (0.1-10 Credits)

This course expands knowledge in the principles and practice of dental public health. Topics covered include epidemiology, health sciences research, data science, population health informatics, and a deeper exploration of vulnerable/underserved populations.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

DSEL 9116 - Rural Oral Health Practice 1 (0.5-10 Credits)

This course provides introductory and foundational information on the provision of health care and related issues in rural settings through a community dentistry lens. This course is the first of a four-part series that is designed to prepare dental students to become rural practice-ready upon graduation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEL 9117 - Rural Oral Health Practice 2 (0.5-10 Credits)

This course is a continuation in the coverage of information on the provision of health care and related issues in rural settings through a community dentistry lens. This course is the second of a four-part series that is designed to prepare dental students to become rural practice-ready upon graduation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEL 9118 - Rural Oral Health Practice 3 (0.5-10 Credits)

This course provides advance information, guidance, and service learning in the provision of health care and related issues in rural settings through a community dentistry lens. This course is the third of a four-part series that is designed to prepare dental students to become rural practice-ready upon graduation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEL 9119 - Rural Oral Health Practice 4 (0.5-10 Credits)

This course provides advance information, mentoring, and service learning in the provision of health care and related issues in rural settings through a community dentistry lens. This course is the fourth of a four-part series that is designed to prepare dental students to become rural practice-ready upon graduation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEL 9120 - ISL-Honduras (Roatan) (0.1-5 Credits)

This elective provides students the opportunity for a faculty-led international learning opportunity to Roatan, Honduras. Students will learn about the oral health care delivery system in a low-income country.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DSEL 9121 - ISL-Brazil (UFES) (0.1-5 Credits)

This elective provides students the opportunity for a faculty-led international learning opportunity in Vitoria, Brazil. Students will learn about the Brazilian dental education system, delivery of dental care in Brazil, and traveling to various community sites observing how dental care is provided in different settings. Additionally, students will engage in interprofessional learning activities.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring, Summer.

DSEL 9122 - Introduction to One Health and Oral Health (0.1-5 Credits)

This course is designed to expand student understanding of current concepts in Planetary Health, One Health, and Sustainability as it applies to Oral Health. This course is designed as a collaborative online international learning course (COIL) and will be conducted in partnership with the Federal University of Espírito Santo (UFES), Vitória in Brazil.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEL 9123 - Community-based Clinical Dentistry Elective (ACTS DS Elective) (0.1-10 Credits)

Supplemental experiential learning course for DS4 students to gain additional dental practice experience in community health center settings.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Dental International Program (DISP)

DISP 7100 - Principles of Direct and Indirect Restorations Didactic (0.1-5 Credits)

This seminar-based course introduces the student to an overview of contemporary restorative procedures in a simulated clinical environment.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7101 - Principles of Direct and Indirect Restorations Lab (0.1-5 Credits)

This laboratory-based course provides students with an overview of restorative techniques in a simulated clinical environment.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7102 - Occlusion (0.1-5 Credits)

Course covering principles of intra and inter-oral relationships. Course will also cover diagnosis and treatment regarding the occlusion relationship.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7103 - Occlusion Laboratory (0.1-5 Credits)

The laboratory portion of this course includes fabrication of different splint types. It also introduces principles of equilibration and applying these principles to models.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7104 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7107 - Clinical Dental Materials (0.1-5 Credits)

This course will provide knowledge on the science, properties, and manipulation of dental materials and their application in dental practice.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Spring.

DISP 7111 - Complete and Removable Prosthodontics 1 (0.1-5 Credits)

The educational goal of this course is for the student to be able to collect information, diagnose, and develop a treatment plan for a completely edentulous patient that requires removable complete denture treatment, in order to restore them to good oral health and function as well as offer an accurate prognosis of treatment.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7112 - Cariology (0.1-5 Credits)

Basic knowledge about dental caries and didactic instruction and exercises in identifying caries, learning and evaluating detection methods. Additionally, identifying and correlating factors that contribute to caries, and developing programs for prevention and management to reduce identified factors.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7113 - Complete and Removable Prosthodontics 2 (0.1-5 Credits)

The educational goal of this course is for the student to be able to collect information, diagnose, and develop a treatment plan for a completely edentulous patient that requires removable complete denture treatment, in order to restore them to good oral health and function as well as offer an accurate prognosis of treatment.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7114 - Complete and Removable Prosthodontics Lab 1 (0.1-5 Credits)

The laboratory part of the course includes the design and fabrication of a removable complete denture.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7115 - Complete and Removable Prosthodontics Lab 2 (0.1-5 Credits)

The laboratory part of the course includes the design and fabrication of a removable complete denture.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7121 - Endodontics 1 (0.1-5 Credits)

Course is an introduction to basic endodontics therapy. The philosophy of endodontics treatment and therapeutic techniques is discussed. Mechanisms of inflammation and repair are related to decisions in clinical practice.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7122 - Periodontology 3 (0.1-5 Credits)

This course deals with the prevention, treatment and control of periodontal disease. Currently accepted therapies are discussed in detail. In addition, the student is taught how to evaluate new therapies which periodically become available.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7123 - Periodontology 3 Laboratory - Section 1 (0.1-5 Credits)

This course runs parallel with Periodontology 3. This course is devoted to teaching the clinical skills necessary for the practice of periodontics within the context of a general dental practice.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7124 - Clinical Dental Pharmacology (0.1-5 Credits)

Integration of basic drug mechanisms with fundamentals of clinical pharmacology and patient care.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7125 - Pain Control 1 (Local Anesthesia) (0.1-5 Credits)

The anatomy of the nerve supply to the teeth and associated structures is covered. The techniques for administration of local anesthesia to the maxilla and mandible are demonstrated by the faculty and performed by the student.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7126 - Prevention and Management of Medical Emergencies (0.1-5 Credits)

The prevention, diagnosis, and management of medical emergencies are presented.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7129 - Introduction to Clinical Dentistry (0.1-5 Credits)

This course reviews the fundamental principles of infection control including a focus on universal precautions, aseptic technique, methods of sterilization and regulatory issues.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7130 - Oral Radiology (0.1-5 Credits)

Designed to introduce the students to basic radiology and to provide them with the necessary practical skills in preparation for clinical dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7131 - Oral Radiology Lab (0.1-5 Credits)

The laboratory is designed to provide students with the necessary practical skills in preparation for clinical dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7132 - Diagnostic Radiology (0.1-5 Credits)

This course in radiographic interpretation is for 3rd year dental and 2nd year ISP students and builds upon Oral Path 1 and 2. It includes radiographic interpretation, pathophysiology and management of osseous disorders of the jaw and TMJ.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 7134 - Endodontics 2 (0.1-5 Credits)

Course is an introduction to basic endodontics therapy. The philosophy of endodontics treatment and therapeutic techniques is discussed. Mechanisms of inflammation and repair are related to decisions in clinical practice.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7140 - Pediatric Dentistry 1 (0.1-5 Credits)

Basic principles of clinical diagnosis and treatment of the child patient are introduced. Developmental aspects of the formation of the craniofacial complex are applied to clinical management of space maintenance, pupal, restorative, and behavior management problems.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7160 - Managing Your ISP Student Practice (0.1-5 Credits)

Course provides student with knowledge/skills necessary to make the transition from pre-clinic to clinical patient. Competencies established in infection control, documentation, record keeping, patient management, medico-legal/ethical implications, professionalism, organization skills, communication skills, auxiliary utilization, and equipment/ instrument utilization.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 7163 - Transition Clinic for ISP Students (0.1-5 Credits)

A mini-orientation of clinical methods and practices and an introduction to the appropriate utilization of AxiUm software. This will include an overview of the SODM oral diagnosis and treatment planning processes, procedures and policies with oth clinical and didactic components.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 7164 - MEDICALLY COMPLEX DENTAL CARE (0.1-10 Credits)

Course provides clinical basis for assessment of patient's medical history, including systemic disease/physical findings. Directs student from normal interpretation to systemic pathophysiology with varying degrees of severity, allowing for competent treatment in the hospital and clinic settings.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 7201 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 7202 - Case Presentation 1 (0.1-5 Credits)

Patient care with development of treatment plan through presentation by student to students and faculty.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 7203 - Fixed Prosthodontics (0.1-5 Credits)

An advanced preclinical lecture course covering ceramic restorations along with discussion of pontic design and manipulation of gold solder. Dowel-core fabrication for endodontically treated teeth is covered. Clinical application is stressed and study of diagnosis and treatment planning is expanded.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7204 - Fixed Prosthodontics Laboratory (0.1-5 Credits)

Emphasis on ceramic restorations and procedures involved in fabricating fixed bridges in the anterior of appearance zone. Restorations include direct pattern fabrication of dowel-cores to building up badly broken-down or fractured teeth.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7205 - Comprehensive Patient Care Clinic A (0.1-5 Credits)

An introductory clinic for students providing comprehensive dental care refining technical skills, and learning patient management skills in a large group practice setting.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 7211 - Endodontics 1 Laboratory (0.1-5 Credits)

This is a laboratory course in basic endodontic techniques utilizing extracted natural teeth as models of clinical treatment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

DISP 7212 - Removable Partial Prosthodontics 2 (0.9 Credits)

Acquaints the student with principles of removable partial prosthodontics. Includes principles of partial denture design and fabrication as they relate to preventive dentistry.

Grading Basis: Letter Grade

DISP 7213 - Removable Partial Prosthodontics Laboratory (0.5 Credits)

Laboratory exercises which follow lectures of principles of partial removable prosthodontics. The student should be familiar with all the necessary steps in completion of a mandibular removable partial denture.

Grading Basis: Letter Grade

DISP 7216 - Seminars in Restorative Dentistry (0.1-5 Credits)

This course will present topics on operative dentistry relative to clinic patient care. Current materials and techniques as well as a review of fundamental concepts of operative dentistry will be taught.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7220 - Pain Control 2 (Nitrous Oxide Analgesia) (0.1-5 Credits)

Pharmacological indications and contraindications and prevention and treatment of complications relating to use of nitrous oxide is presented.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 7231 - Assessment of the Dental Patient (0.1-5 Credits)

Designed to introduce the student to the problem-oriented dental record and to a systems approach to the collection of health data. Includes both lecture and clinical phases.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7232 - Clinical Oral Diagnosis (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 7240 - Pediatric Dentistry 2 (0.1-5 Credits)

Basic principles of clinical diagnosis and treatment of the child patient are introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 7241 - Pediatric Dentistry 2 Lab (0.5 Credits)

Grading Basis: Letter Grade

DISP 7300 - Case Presentation 2 (0.1-5 Credits)

Presentations of actual treatment cases from the comprehensive patient care program are made by students and critiqued by the faculty.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 7301 - Comprehensive Care Clinic B (0.1-5 Credits)

Continuation of Comprehensive Patient Care Clinic A with additional emphasis on the treatment of pediatric, orthodontic, geriatric, and endodontics cases.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 7302 - Clinical Restorative (0.1-5 Credits)

Combines clinical experience with diagnosis, treatment planning, restorative treatment. Students assigned a fully dentated/partially/fully edentulous patient needing restorative procedures. Restorative materials include amalgam, cast gold, and tooth-colored composite resins/porcelain. Emphasis on fabrication of restorations that function adequately.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 7303 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 7309 - Communication & Person-Centered Care (0.1-5 Credits)

This course exposes the student to the aspects of health communication, health literacy and person centered model of care. This approach will guide the students to focus on patients' resources and needs.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7310 - Implant Dentistry (0.1-5 Credits)

Concepts and applications of tissue integrated prostheses are presented and discussed. Topics include an historical perspective of implant dentistry, surgical and prosthetic techniques, diagnosis and treatment planning analysis of current systems, qualifications and consent, and clinical applications.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 7311 - Implant Dentistry Laboratory (1 Credit)

Concepts and applications of tissue integrated prostheses are presented and discussed. Topics include prosthetic techniques, diagnosis and treatment planning, analysis of current systems, qualifications and consent, and clinical applications.

Grading Basis: Letter Grade

DISP 7314 - Esthetic Dentistry (0.1-5 Credits)

This course is designed to present information to students about those clinical dentistry procedures or concepts which are performed primarily to enhance dental esthetics.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

DISP 7318 - Critical Thinking and Patient Care Seminar (0.1-5 Credits)

This course will provide the student with a practical application of the practice of evidence-based dentistry, critical thinking, formulation of clinical questions, critical appraisal of the literature and the translation of the biologic and social sciences to clinical patient care. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 7319 - Oral and Maxillofacial Surgery 1 (0.1-5 Credits)

The diagnosis and treatment of oral and maxillofacial surgical problems including techniques for extraction of teeth alveoplasty, biopsy, management of infection, treatment of maxillary and mandibular fractures, and suturing techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7320 - Oral and Maxillofacial Surgery 2 (0.1-5 Credits)

The diagnosis and treatment of oral and maxillofacial surgical problems including techniques for extraction of teeth alveoplasty, biopsy, management of infection, treatment of maxillary and mandibular fractures, and suturing techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 7321 - Periodontology 4 (0.1-5 Credits)

This course is devoted to making the student familiar with the surgical management of periodontal disease. The indications and rationale for resection, reconstructive and mucogingival procedures are discussed.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 7322 - Oral Facial Pain (1.2 Credits)

This course is designed to acquaint the student with the evaluation, diagnosis, management, and pathology of the temporomandibular joint. Emphasis is on the multidisciplinary nature of treating disorders of TMJ. Grading Basis: Satisfactory/Unsatisfactory w/IP

DISP 7323 - Dental Pain and Emergencies (0.1-5 Credits)

This course covers the diagnostic and treatment considerations for the management of the patient in pain and other emergency problems encountered in general dentistry. Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DISP 7328 - Clinical Periodontics (0.1-5 Credits)

Clinical rotation in periodontics. Grading Basis: Satisfactory/Unsatisfactory w/IP
Repeatable. Max Credits: 10.
Typically Offered: Fall.

DISP 7330 - Oral Pathology I (0.1-5 Credits)

This course is a comprehensive review of the fundamental mechanisms and general principles of oral pathology, including developmental disturbances of oral and para-oral structures, benign and malignant tumors and cysts. Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DISP 7331 - Clinical Oral Diagnosis (0.1-5 Credits)

Clinical rotation in oral diagnosis. Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DISP 7335 - Clinical Fixed Prosthodontics (0.1-5 Credits)

Clinical rotation in fixed prosthodontics. Requirement: Department Consent Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DISP 7336 - Clinical Operative Dentistry (0.1-5 Credits)

Clinical rotation in operative dentistry. Requirement: Department consent Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DISP 7337 - Clinical Removable Prosthodontics (0.1-5 Credits)

Clinical rotation in removable prosthodontics. Requirements: Department consent Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DISP 7340 - Pediatric Dentistry 3 (0.1-5 Credits)

Course emphasizes diagnostic/treatment considerations for pediatric patients. Lecture materials by faculty/ case presentations utilized to facilitate working knowledge of treatment planning/procedures. Sedation techniques for behavior problems discussed as well as traumatic injuries, hospital dentistry and medically compromised patients. Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DISP 7360 - Behavioral Health, Gerontology and Geriatrics (0.1-5 Credits)

Developing foundational knowledge in mental health/illness (mental health literacy), geriatrics and care for adult patients with developmental disabilities. Additionally at enhancing skills in building rapport/motivating patients for adoption of health behaviors, through lecture and two standardized patient interview experiences. Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DISP 7380 - Adult Special Health Care Need Dentistry (0.1-5 Credits)

To introduce students to medical problems/disabilities affecting patients who will be treated in the School's Special Care Clinic. This includes foundational knowledge in the features of common congenital disabilities, proper communication techniques, and assessment of the oral health treatment strategies most compatible for the patient. Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DISP 7708 - Dental Materials Seminar (0.1-10 Credits)

The course is aimed to be an interactive session where the students will be divided into teams and will be asked to create presentations on clinical applications of dental materials. Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DISP 7710 - Behavioral Health Sciences (0.1-5 Credits)

This course develops foundational knowledge in mental health/ disorders, and enhances skills in building rapport and motivating patients to change health behaviors, through lecture and two standardized patient interviews. Reviews managing anxious or fearful patients, and communication skills including cross-cultural communication. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 5.
Typically Offered: Fall.

DISP 7711 - Gerontology & Geriatric Health Care (0.1-5 Credits)

This course addresses clinical considerations for older adult patients and provides a basic understanding of the physiologic, pharmacologic, psychological and social aspects of aging. Reviews pathological changes that affect oral health treatment of dental diseases and patient management. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 5.
Typically Offered: Fall.

DISP 7712 - Dental Ethics and Professionalism (0.1-5 Credits)

This course will cover concepts and methods for effective reasoning to reflect critically upon individual's values and ethical standards. Topics cover foundational concepts in ethics and professionalism in dental practice, public health, and research. Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 5.
Typically Offered: Summer.

DISP 8100 - Case Presentation 3 (0.1-5 Credits)

Patient care with development of treatment plan through presentation by student to students and faculty. Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Spring.

DISP 8101 - Comprehensive Patient Care Clinic C (0.1-5 Credits)

Continuation of Comprehensive Patient Care Clinic B with activities focusing on independence, student preparedness, technical skills, patient management and professionalism. Grading Basis: Letter Grade with IP
Typically Offered: Spring.

DISP 8104 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Spring.

DISP 8106 - Advanced Clinical Medicine (0.6 Credits)

Provides students with advanced training in clinical medicine and its effects on dental practice.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8112 - Clin Oper Dentistry (1 Credit)

Grading Basis: Letter Grade

DISP 8113 - Clin Remov Pros (1 Credit)

Grading Basis: Letter Grade

DISP 8116 - Critical Appraisal of Translational Literature (0.1-5 Credits)

The purpose of this course is to develop proficiency in critical thinking and problem solving as it pertains to scientific inquiry and research methodology in translational research. Department consent required

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8117 - Critical Appraisal of Translational Literature II (0.1-5 Credits)

The purpose of this course is to develop proficiency in critical thinking and problem solving as it pertains to scientific inquiry and research methodology in translational research. It provides a continued foundation for discussion of clinical events occurring in the student's clinical practice w/ emphasis on evidence-based dentistry. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8120 - Endodontics 3 (0.1-5 Credits)

This course addresses topics of diagnosis and management of a variety of endodontic treatment problems such as periapical pathosis, traumatic injuries, surgical intervention, and bleeding.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 8121 - Endodontics 4 (0.1-5 Credits)

This is an advanced course in endodontics clinical practice. Endodontic implants, autogenous transplants, advanced surgical concepts and controversies will be included.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8123 - Clinical Endodontics (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8124 - Clinical Periodontics (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 8125 - Clinical Oral Maxillofacial Surgery (0.1-5 Credits)

This is a clinical oral surgery experience including routine and surgical removal of erupted and impacted teeth and use of intravenous sedation techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

DISP 8130 - Clinical Oncology (0.1-5 Credits)

An assignment of one week for students includes lectures, seminars, tumor boards, surgery rounds, and radiation therapy conferences on a health professional approach to the prevention, diagnosis, and treatment of head and neck neoplasia.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8131 - Oral Pathology 2 (0.1-5 Credits)

This course is a continuation of DISP 7330.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 8133 - Clinical Oral Diagnosis (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8134 - Clinical Operative Dentistry (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 8135 - Clinical Operative Dentistry (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8136 - Clinical Fixed Prosthodontics (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8137 - Clinical Removable Prosthodontics (0.1-5 Credits)

Clinical rotation in removable prosthodontics

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8140 - Clinical Pediatric Dents (1.5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8141 - Clin Pediatric Dent (0.5 Credits)

Grading Basis: Letter Grade

DISP 8160 - Dental Ethics and Jurisprudence (0.1-5 Credits)

This course prepares students for appropriate conduct consistent with the legal and ethical principles of the dental profession. It lays the foundations for each student's continued growth with respect to the legal and ethical obligations of professionalism.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8161 - Dental Practice Management & Leadership (0.1-5 Credits)

Understanding of basic management activities which must be continuously carried out in private practice. Primary focus on financial records, billing and collections, professional insurance, fees, clinical records, third party relations, case presentation, practice analysis, dental practice marketing, and personnel management.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8162 - Dental Practice Planning (0.1-5 Credits)

Teaches students to make decisions in planning / implementation of private practice. Primary focus on alternative practice arrangements, business formats, dental associateships, buying practice, designing / equipping dental office, financing a practice, leases, debt management, personal/ professional insurance, and selecting professional advisors.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 8176 - Community Public Health 3 (0.1-5 Credits)

This course exposes students to the public aspects of oral health care. It identifies the significance and scope of public health programs at all levels of government and relates the public activities to the private practice of dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DISP 8200 - Case Presentation 4 (0.1-5 Credits)

Patient care with development of treatment plan through presentation by student to students and faculty.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 8201 - Comprehensive Patient Care Clinic D (0.1-5 Credits)

Continued provision of Comprehensive Patient Care Clinic C with emphasis on effective practice management.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

Typically Offered: Summer.

DISP 8202 - Clinical Restorative (0.1-5 Credits)

Combines clinical experience with diagnosis, treatment planning, restorative treatment. Students assigned a fully dentated/partially/fully edentulous patient needing restorative procedures. Restorative materials include amalgam, cast gold, and tooth-colored composite resins/porcelain. Emphasis on fabrication of restorations that function adequately.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

Typically Offered: Summer.

DISP 8203 - Special Care Clinic A (0.1-5 Credits)

This course is designed to introduce students to provide dental treatment to the special needs population

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8204 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 8206 - Special Care Clinic B (0.1-5 Credits)

This course is designed to introduce dental students to provide dental treatment to the special needs population

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 8207 - Special Care Clinic C (0.1-5 Credits)

This course is designed to introduce dental students to provide dental treatment to the special needs population

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 8209 - Advanced and Digital Prosthodontics (0.1-5 Credits)

This course will address various advance prosthodontic topics; beginning with CAD/CAM dentistry and digital workflow, then removable partial denture designs, occlusal concepts, diagnosis and treatment planning, esthetics, and cementation for fixed prosthodontics restorations.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

DISP 8210 - Clin Prosth Seminar (0.6 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

DISP 8220 - Clinical Endodontics (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 10.

Typically Offered: Summer.

DISP 8222 - Clinical Periodontics (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

Typically Offered: Summer.

DISP 8223 - Clinical Oral Maxillofacial Surgery (0.1-10 Credits)

Clinical rotation in oral maxillofacial surgery.

Grading Basis: Letter Grade

Repeatable. Max Credits: 10.

DISP 8225 - Clinical Fixed Prosthodontics (0.1-5 Credits)

Clinical rotation in fixed prosthodontics. Requirement: Department Consent

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 8226 - Clinical Operative Dentistry (0.1-5 Credits)

Clinical rotation in operative dentistry. Requirement: Department consent

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 8227 - Clinical Removable Prosthodontics (0.1-5 Credits)

Clinical rotation in removable prosthodontics. Requirement: Department consent

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DISP 8231 - Clinical Oral Diagnosis (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 10.

Typically Offered: Summer.

DISP 8240 - Clinical Pediatric Dentistry (0.1-5 Credits)

This course provides experience in developmental, behavioral, preventive, diagnostic, and therapeutic care on a comprehensive basis for pediatric patients in the primary, transitional, and permanent dentition phases and patients with special health needs.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 8251 - Clinical Orthodontics (0.1-5 Credits)

This is a continuation from initial clinical courses providing further experience in developmental, behavioral, preventive, diagnostic, and therapeutic care on a comprehensive basis for pediatric patients in primary, transitional, and permanent dentition phases and patients with special health care needs. Requirement: Department Consent.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Summer.

DISP 8258 - Diagnosis of Orofacial Lesions (0.5-10 Credits)

Presentations of oral and maxillofacial lesions and anomalies from the comprehensive patient care program will be made by the students and critiqued by the faculty. Clinical history, detailed description, differential diagnosis and treatment/prognosis will form the basis of this interactive discussion.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DISP 8300 - Case Presentation 5 (0.1-5 Credits)

Patient care with development of treatment plan through presentation by student to students and faculty.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8301 - Comprehensive Patient Care Clinic E (0.1-5 Credits)

Advanced comprehensive patient care including applied principles of practice management.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 8302 - Clinical Restorative (0.1-5 Credits)

Combines clinical experience with diagnosis, treatment planning, restorative treatment. Students assigned a fully dentated/partially/fully edentulous patient needing restorative procedures. Restorative materials include amalgam, cast gold, and tooth-colored composite resins/porcelain. Emphasis on fabrication of restorations that function adequately.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 8303 - Independent Study (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8310 - Advanced Implant Prosthodontics Seminar (0.1-5 Credits)

Students gain experience in clinical use of cast restorations. Emphasis is placed on the fabrication of restorations that are to function adequately in the patient's biologic environment.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8321 - Clinical Endodontics (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8323 - Clinical Periodontics (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8325 - Clinical Fixed Prosthodontics (0.1-5 Credits)

Clinical rotation in fixed prosthodontics. Requirement: Department consent

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 8326 - Clinical Operative Dentistry (0.1-5 Credits)

Clinical rotation in operative dentistry. Requirement: Department consent

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8327 - Clinical Removable Prosthodontics (0.1-5 Credits)

Clinical rotation in removable prosthodontics. Requirement: Department consent

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DISP 8328 - Clinical Oral Radiology (0.1-5 Credits)

Clinical rotation in oral radiology.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8330 - Clinical Oral Diagnosis (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8350 - Orthodontics (0.1-10 Credits)

Early physical and emotional development of the child is presented, emphasizing prenatal and neonatal influences on the craniofacial complex. The etiology and classification of malocclusion along with the development of disturbances of hard and soft tissues are introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

DISP 8351 - Orthodontics 2 (0.5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

DISP 8352 - Orthodontics 3 (1.4 Credits)

Grading Basis: Letter Grade

DISP 8355 - Clinical Emergencies (0.1-5 Credits)

The patient who presents with oral pain is evaluated and relief of discomfort is provided by the student under the supervision of the dental faculty. Department Consent Required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DISP 8400 - Elective - Advanced Readings in Pediatric Dentistry (0.1-5 Credits)

Elective seminar offered to interested ISP students. Each week a different topic in pediatric dentistry will be covered. Students will be expected to read and discuss relevant, current, peer reviewed journal articles and to complete one final assignment.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DISP 8402 - Trifinio Guatemala ISP Elective (0.1-5 Credits)

This course is offered to eligible students who wish to travel for one week to Trifinio, Guatemala to provide comprehensive dental care at the CU Center for Global Health's Trifinio Health Clinic. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DISP 8405 - Perio After Dark Elective (0.1-5 Credits)

This course is designed to make the student more familiar with the normal periodontium, to supplement current surgical periodontics knowledge, and to reiterate important concepts regarding the epidemiology, etiology, and pathogenesis of periodontal disease.

Requirement: Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 8412 - Community-Based Clinical Dentistry ISP (0.1-10 Credits)

Elective for advanced standing international students to participate in the ACTS Program in a non-metropolitan community-based educational site. Objectives of clinical experiences vary according to site assignment and include rural community health centers, psychiatric hospitals, migrant health care or private practice locations.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DISP 8612 - Orofacial Pain (0.1-5 Credits)

This course is designed to acquaint the student with evaluation, diagnosis, arrangement and pathology of the temporomandibular joint. Emphasis is on the multidisciplinary nature of treating disorders of TMJ.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 9111 - Graduate Periodontics Dental Student Assisting Elective (0.1-10 Credits)

Provides dental students exposure to the periodontal specialty of dentistry. Provides dental students exposure to medically complex patients and how these patients are treated. It allows observation in complex treatment planning, surgical & non-surgical periodontal procedures, simple & complex extractions, & intravenous moderate sedation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DISP 9112 - Blending the Art of Observation and Listening (0.5-10 Credits)

Observation, active listening, accurate description and interpretation are essential clinical skills. To develop these skills, visual and performance art provide a creative, safe and culturally diverse environment for refining these abilities. Participation in experiential and expert guided activities in galleries frame the experience.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

DISP 9113 - Dental Community Engagement & Service (0.1-10 Credits)

This course expands knowledge and skills in community-based dental care and strengthens understanding of public health issues and service. Topics to be reinforced include the importance of community engagement, service, and equity as they relate to oral health.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring, Summer.

DISP 9114 - Global Health, Policy and Humanitarianism (0.1-10 Credits)

This course will cover many aspects of global health and oral health of low-resource populations. Topics covered are global burden of disease, global health policy, oral health for refugee and immigrant populations and ethics and sustainability related to humanitarian work.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

DISP 9115 - Advanced Studies in Community Dentistry (0.1-10 Credits)

This course expands knowledge in the principles and practice of dental public health. Topics covered include epidemiology, health sciences research, data science, population health informatics, and a deeper exploration of vulnerable/underserved populations.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring.

DISP 9116 - Rural Oral Health Practice 1 (0.5-10 Credits)

This course provides introductory and foundational information on the provision of health care and related issues in rural settings through a community dentistry lens. This course is the first of a four-part series that is designed to prepare dental students to become rural practice-ready upon graduation.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DISP 9120 - ISL-Honduras (Roatan) (0.1-5 Credits)

This elective provides students the opportunity for a faculty-led international learning opportunity to Roatan, Honduras. Students will learn about the oral health care delivery system in a low-income country.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

DISP 9121 - ISL-Brazil (UFES) (0.1-5 Credits)

This elective provides students the opportunity for a faculty-led international learning opportunity in Vitoria, Brazil. Students will learn about the Brazilian dental education system, delivery of dental care in Brazil, and traveling to various community sites observing how dental care is provided in different settings. Additionally, students will engage in interprofessional learning activities

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring, Summer.

DISP 9122 - Introduction to One Health and Oral Health (0.1-5 Credits)

This course is designed to expand student understanding of current concepts in Planetary Health, One Health, and Sustainability as it applies to Oral Health. This course is designed as a collaborative online international learning course (COIL) and will be conducted in partnership with the Federal University of Espírito Santo (UFES), Vitória in Brazil.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Dental School (Prior) (DSDS)

DSDS 6655 - Cln Soph Clerkship (5 Credits)

Grading Basis: Letter Grade

DSDS 7759 - Cln Junior Clerkship (0.1-10 Credits)

Grading Basis: Letter Grade

DSDS 8855 - Cln Senior Clerkship Fall (3.3 Credits)

Grading Basis: Letter Grade

DSDS 8857 - Cln Senior Clerkship (0.1-7 Credits)

Grading Basis: Letter Grade

DSDS 8859 - Cln Senior Clerkship: Spg (2.8 Credits)

Grading Basis: Letter Grade

Dermatology (DERM)

DERM 5001 - Łóód Navajo IHS Spring Break Derm Elective (4 Credits)

This course gives the first year medical student a weeklong immersive experience with the dermatology specialty and allows a unique opportunity for the student to learn about the barriers and facilitators to providing specialty care in a rural healthcare system on an American Indian reservation. It will teach social determinants of health, resource management, distance specialty care, and collaboration with other specialties.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DERM 8000 - Dermatology Clinical Elective (4 Credits)

This course is designed to provide a broad overview of medical, surgical and pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of common skin disease, and procedural dermatology including skin biopsies and cryosurgery.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

DERM 8001 - Advanced Dermatology (8 Credits)

This course is designed to provide a broad overview of medical, surgical and pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of common skin disease, and procedural dermatology including skin biopsies and cryosurgery.

Requirements: Instructor Consent

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

DERM 8005 - Dermatology Elective Fort Collins Branch (4 Credits)
This course aims to expose students to a breadth of dermatology in various settings (pediatrics, adult medical, surgical, and dermatopathology).

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

DERM 8033 - Clinical Pediatric Dermatology (4 Credits)
This course is designed to provide a broad overview of pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of pediatric skin disease, and pediatric procedural dermatology including skin biopsies, laser and cryosurgery.

Grading Basis: Pass Fail with IP
Typically Offered: Fall, Spring.

DERM 8300 - DERM Elective Away (4-8 Credits)
This elective will be held at a site in Colorado or another state. International electives not allowed.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 8.
Typically Offered: Fall, Spring, Summer.

DERM 8600 - Research in Dermatology (4-16 Credits)
4,6, 8 wks. Max: 5. Research elective allows the student to design and implement a basic science, clinical or epidemiologic research project relevant to dermatology or cutaneous biology. Students are expected in research seminars and to present their results. Prereq: Course Director approval required to register.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 24.
Typically Offered: Fall, Spring, Summer.

DERM 8630 - DERM Research Away (4-16 Credits)
This research elective will be held at a site in Colorado or another state. International electives not allowed.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 16.
Typically Offered: Fall, Spring, Summer.

Emergency Medicine (EMED)

EMED 6630 - Emergency Medicine in South Africa (8 Credits)

This is a 6 week clinical experience, students work in the Emergency Department of a public hospital in Cape Town, South Africa and contribute to ongoing research projects done in conjunction with Stellenbosch University. Prerequisite: Successful completion of EMED 6629. Course Restrictions: Course Director Approval.

Grading Basis: Pass Fail with IP
Typically Offered: Summer.

EMED 8004 - Emergency Med Univ Hosp (4-8 Credits)

2-4 wks. Max:4. Students are primary caregivers in a level II trauma center with a variety of patients and individual teaching time with attendings and senior residents. An excellent experience for students seeking instruction in the assessment and management of the undifferentiated patient.

Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

EMED 8005 - Emergency Medicine DHMC (8 Credits)

This rotation is designed for the senior medical student who may be applying to primary care or other specialties who wants to gain exposure to emergency medicine.

Grading Basis: Medical School HP
Typically Offered: Spring.

Diagnostic & Developmental (DSDD)

DSDD 5500 - Infection Control (0.1-5 Credits)

This course reviews the fundamental principles of infection control including a focus on universal precautions, aseptic technique, methods of sterilization, and regulatory issues.

Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Spring.

DSDD 7703 - Medically Complex Dental Care (0.1-10 Credits)

Course provides clinical basis for assessment of patient's medical history, including systemic disease/physical findings. Directs student from normal interpretation to systemic pathophysiology with varying degrees of severity, allowing for competent treatment in the hospital and clinic settings.

Grading Basis: Letter Grade with IP
Typically Offered: Fall, Summer.

Education Research Methods-CSU (EDRM)

EDRM 7010 - Applied Linear Models (3 Credits)

General Linear model applications in educational research emphasizing conceptual understanding and characteristics of non-experimental designs. Prereq: EDRM 606.

Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Colorado State University.
Typically Offered: Fall, Spring.

EDRM 7030 - Appl Longitudinal Data Analysis (3 Credits)

Methods and empirical applications of individual growth modeling and discrete-time event history analysis in educational research. Prereq:

EDRM 701
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Colorado State University.
Typically Offered: Fall.

EMED 8006 - Emergency Medicine Career (8 Credits)

4 wks. Max:4. Student is primary caregiver for acutely ill/injured patients at DHMC Emergency Department, supervised by Emergency Medicine Staff. Daily lectures in traumatic/medical emergencies, conferences, "board rounds". Orientation, first day, 7:30 a.m. Admin Conf room.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Summer.

EMED 8007 - Emergency Medicine Career Elective – Anschutz Campus (8 Credits)

Students will rotate through Emergency Departments at University Hospital and Children's Hospital Colorado to gain education through a broad range of Emergency Medicine experiences. This course complements and does not replace 8006 and is offered during the summer of 2020. Emergency Medicine-Bound Senior Medical Students, Course Director Approval.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Summer.

EMED 8011 - EMED URM Career Elective (8 Credits)

Purpose: Guide and support medical students from URM groups who have an interest in pursuing EM as a career. This is an advanced clinical rotation at DHMC and

Grading Basis: Medical School HP

Typically Offered: Fall, Summer.

EMED 8017 - Peds Emergency DHMC (4-8 Credits)

2 or 4 wks. Max: 2. Students will serve as the primary caregivers in the Denver Emergency Center for Children at Denver Health, a pediatric emergency department treating 30,000 children annually. Students will be fully integrated into the team, treating children with acute and urgent illnesses.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

EMED 8024 - Clinical Toxicology (4-8 Credits)

4 wks. Max:2. Provides an introduction to medical toxicology at the RMPD. Student will participate in clinical service including telephone consultation, fundamentals of environmental toxicology, public health concerns, and occupational toxicology. Each student will make one presentation toward the end of their rotation.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

EMED 8030 - Rural Emergency Medicine (4-8 Credits)

A continuation of the Emergency Care Clerkship, currently a two-week required component of Phase III study. This course is for students who seek more in-depth knowledge and additional clinical skills, relating to Emergency Care in the rural setting.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 84.

Typically Offered: Fall, Spring, Summer.

EMED 8032 - Emergency Medical Services (4 Credits)

The Emergency Medical Services (EMS) elective will expose students to the clinical care provided by ambulance services in the Northern Colorado region. Students will also have participation in the role of an EMS physician and the complex framework that support the EMS system. Learners will participate in clinical rides with paramedics in the 911 response system, interfacility transport and secure vehicle transport systems. They will also participate in the meeting calendar of the medical directors. This will build understanding of EMS, care limitations, operational realities and implementation of quality improvement projects using evidence-based medicine.

Grading Basis: Pass Fail with IP

EMED 8100 - EMED Elective Away (4-8 Credits)

This Emergency Medicine elective will be held at a site in Colorado, another state or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

EMED 8600 - Research EMED (4-24 Credits)

Designed for students interested in Emergency Medicine research. Tailored research experiences in the Denver area can be established in a variety of settings. Speak with course director to design this elective. Offered 4, 8, or 12 weeks. Max enroll: 4.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

EMED 8630 - EMED Research Away (4-8 Credits)

This Emergency Medicine research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

Endodontics (DSEN)

DSEN 6610 - Endodontics 1 Lecture (0.1-5 Credits)

Course is an introduction to basic endodontics therapy. The philosophy of endodontics treatment and therapeutic techniques is discussed.

Mechanisms of inflammation and repair are related to decisions in clinical practice.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEN 6611 - Endodontics 1 Laboratory (0.1-5 Credits)

This is a laboratory course in basic endodontic techniques that utilizes simulated human teeth as models for providing clinical treatment.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEN 6612 - Endodontics 2 Lecture (0.1-5 Credits)

Course is an introduction to basic endodontics therapy. The philosophy of endodontics treatment and therapeutic techniques is discussed.

Mechanisms of inflammation and repair are related to decisions in clinical practice.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSEN 6613 - Endodontics 2 Laboratory (0.1-5 Credits)

This is a laboratory course in basic endodontic techniques that utilizes simulated human teeth as models for providing clinical treatment.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSEN 7011 - Clinical Endodontics 1 (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSEN 7022 - Clinical Endodontics 2 (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEN 7033 - Clinical Endodontics 3 (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSEN 7712 - Endodontics III (0.1-5 Credits)

Course addresses topics of diagnosis and management of a variety of endodontic treatment problems such as periapical pathosis, traumatic injuries, surgical intervention, and bleeding.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSEN 8011 - Clinical Endodontics 4 (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSEN 8022 - Clinical Endodontics 5 (0.1-5 Credits)

Clinical rotation in endodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSEN 8810 - Endodontics 4 (0.1-5 Credits)

This is an advanced course in endodontics clinical practice. Endodontic implants, autogenous transplants, advanced surgical concepts and controversies will be included.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Env and Radiog Health Sci-CSU (ERHS)

ERHS 5010 - Understanding Disease for Public Health Action (2 Credits)

Biological basis of underlying major public health problems, focusing on risk factors, pathogenesis, and pathophysiology, plus a review of the anatomy and physiology of selected major organ systems and associated diseases, clinical terminology, the underlying biological mechanisms and biological impact of disease in public health.

Grading Basis: Letter Grade

Typically Offered: Fall.

ERHS 5350 - R Programming for Research (3 Credits)

In-depth instruction on data collection, data management, programming and visualization using data examples relevant to academic research.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

ERHS 5600 - Advancing Public Health Through Impact Assessment (3 Credits)

Application of a Health Impact Assessment approach to systematically judge the potential health effects of a policy or project and the distribution of those effects within the population.

Grading Basis: Letter Grade

Typically Offered: Fall.

ERHS 5730 - Design and Conduct of Epidemiologic Research (2 Credits)

This course prepares students to design and implement an epidemiologic study from the development of a research question and study design through data analysis and dissemination. Prerequisites: Introductory Epidemiology course or equivalent.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Spring.

ERHS 5810 - Experimental Course - ERHS (1-5 Credits)

Experimental course in environmental and radiological health sciences.

Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

ERHS 6380 - Geospatial Analysis for Environmental Health (3 Credits)

Introduction to acquisition, organization and analysis of geospatial data relevant to public health. Data sources covered include ground-based air quality and weather sensors, remote sensing (satellite) products, climate and weather model output and data on water quality, traffic and mobility, and housing and socio-demographics.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Fall.

ERHS 6400 - CSU Advanced Epidemiology (3 Credits)

In-depth exploration of advanced epidemiologic methods. Prereq: ERHS 5320.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

ERHS 6580 - Environmental/Occupational Epidemiology (2 Credits)

Epidemiologic analyses of effects of exposure to environmental and occupational health hazards. Prereq: ERHS 5320.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

ERHS 6930 - Research Seminar-Epidemiology (1 Credit)

Presentation of student research and discussion of publications from scientific literature.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

ERHS 6950 - Independent Study - Epidemiology (1-5 Credits)

Specialized study in epidemiology under supervision of faculty.

Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

ERHS 7320 - Advanced Epidemiological Analysis (2 Credits)

Course will complement the student's training in epidemiological methods and statistical regression methods, providing the opportunity to implement their theoretical expertise through designing and conducting advanced epidemiologic research analysis, implemented through a statistical programming language. Prerequisite: Epidemiologic Methods, Advanced Epidemiology, R Programming or SAS and Epidemiologic Data Management, Design and Data Analysis or equivalent courses or experience.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Fall.

ERHS 7400 - Advanced Epidemiology Methods (3 Credits)

Understanding the theoretical basis of currently used epidemiologic methods and also to help acquire an understanding of the process of developing novel approaches. Topics include methods for analysis of the causal effects of time-varying exposures, mediation, instrumental variable analysis, natural experiments and other methods. Prerequisite: Epidemiologic Methods, Advanced Epidemiology, Design and Data Analysis for Researchers I and II or equivalent courses or experience.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Fall.

Environ Health and Occupational Health (EHOH)

EHOH 6601 - Public Health Concepts for Non-MPH (1 Credit)

This course fulfills the basic public health knowledge requirement for students in MS, PhD and DrPH programs. When taken in conjunction with PUBH 6600 and EPID 6630, all knowledge objectives required by the Council on Education for Public Health for public health students are fulfilled. This course cannot be applied toward the MPH degree.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EHOH 6614 - Occupational and Environmental Health (3 Credits)

Students will learn about the relationship between the environment, workplace and health. Topics include facets of industrial hygiene, air and water pollution, radiation monitoring, toxicology, occupational medicine, policy, environmental justice and sustainability. Methods include risk assessment, GIS and epidemiology.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

EHOH 6616 - Toxic Effects of Environmental and Workplace Agents (3 Credits)

Presents an overview of information needed to assess the relationship between the environment, workplace and health. Topics include facets of industrial hygiene, air and water pollution, radiation monitoring, toxicology studies, clinical occupational medicine and biologic monitoring.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6617 - Environmental & Occupational Epidemiology (3 Credits)

Overall goal of course is to provide a background in epidemiology of diseases related to environmental and/or occupational exposures. Application of epidemiologic research methods to determine and prevent such diseases will be discussed. Prerequisite: EHOH 6614

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6618 - Environmental Health Policy and Practice (3 Credits)

Examine the environmental policy-making and planning and regulatory and non-regulatory approaches to controlling environmental hazards. A wide variety of topics will be introduced with cross-disciplinary perspectives ranging from water and air to the built environment and climate change. Prereq: EHOH 6614.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6619 - Environmental Exposures and Health Effects (3 Credits)

This course integrates earth sciences, exposure sciences and biological sciences to understand conditions and circumstances of recent env/occ exposure events, the methods to assess exposures; and related health impacts. Case studies and laboratory exercises are used to guide instruction. Prereq: EHOH 6614. Coreq: EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EHOH 6620 - Risk Analysis & Decision Making (3 Credits)

A general survey of risk analysis and risk-based decision making covering the basic components of risk assessment, communication, and management and how they are applied in various fields. Prerequisite: EHOH 6614

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EHOH 6621 - GIS for Public Health Research/Practice (3 Credits)

This course will expose students to the fundamentals of Health Geographic Information Systems (GIS), including hands-on software experience, across a variety of application areas in the health sciences, particularly focusing on integrating GIS technologies appropriately into research design and practice.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Summer.

EHOH 6622 - Intro to Public Health in Disasters (3 Credits)

This introductory course focuses on the public health role in community disaster preparedness. It explores the relationship between 10 essential public health services and how these services support the ability to prevent, respond, and rapidly recover from public health emergencies.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Summer.

EHOH 6623 - Geographic Perspective on Global Health (2 Credits)

This course will review geographic concepts and tools taking a regional, holistic approach to understanding the world's peoples, places, and processes in order to lay a foundation for an improved knowledge of global health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Summer.

EHOH 6624 - Infectious Diseases, Environmental Contexts (3 Credits)

Students will study the impact of environmental factors, from sanitation to climate, on infectious diseases. Topics include infectious disease emergence, water- and vector-borne diseases, zoonoses and analytic approaches for evaluating environmental determinants of infectious disease. Prerequisite: Students must have completed EPID 6630 and EHOH 6614.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EHOH 6625 - Global Response to Disasters and Climate Crises (3 Credits)

This course will focus on broad foundational and public health-specific perspectives within international disasters and humanitarian crises including earthquakes, floods, pandemics, civil conflict and more. This includes examination of climate change driven disaster events and climate adaptation and mitigation strategies.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EHOH 6626 - Disasters and Climate Crises: Practical Applications (3 Credits)

This course advances the skill set for emergency public health professionals who may participate in planning and implementing response activities in climate related and other types of disasters and the challenges of collaborating, coordinating and interfacing with internal and external emergency management response partners.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EHOH 6627 - Water Quality and Public Health (3 Credits)

This course covers public health concerns involving water quality issues ranging from contamination of drinking water to socio-political issues that impact accessibility to clean water. The fundamental concept is that access to clean water is a basic human right.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EHOH 6628 - Health Protection/Promotion in the Workplace. (3 Credits)

Course introduces the principles of Total Worker Health (TWH), an approach to address improving the health, safety, and well-being of workers. TWH is a transdisciplinary field in public health practice and research. Students have the opportunity to critically consider the research basis for TWH and develop applied skills.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall, Spring.

EHOH 6629 - Introduction to Occupational Safety and Ergonomics (2 Credits)

This course will form a foundation for understanding of workplace factors important in the prevention of injuries. Students will recognize safety and ergonomic hazards that may lead to injury as well as learn strategies to abate these hazards.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EHOH 6630 - EOH Interdisciplinary Symposium (2 Credits)

Interdisciplinary field and consultation experience for students interested in understanding workplace health protection and promotion. Students apply principles and knowledge to effectively protect and promote occupational health and safety by providing consultative services to front range businesses in complex occupational settings. Course is collaborative with industrial hygiene, occupational psychology, health physics, occupational medicine, ergonomics and safety students from CSU and CU campuses. Travel to field sites is required. Prereq: EHOH 6614. Restriction: Restricted to Occupational Medicine residents and MPH students with instructor permission.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EHOH 6631 - Public Health and Occupational Medicine Seminar (1 Credit)

This course is designed to capture the activities of Occupational and Environmental Medicine residents as advanced, integrated practice of medical and public health in a structured manner, providing a mechanism for resident and programmatic evaluation and academic credit toward the resident MPH degree. Prerequisite: Occupational and Environmental Medicine resident or permission of course director. Instructor consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EHOH 6632 - Occupational Health Policy and Practice (3 Credits)

OEM residents need to develop knowledge and skills in policy development and implementation in the field of Occupational Health. This course will develop deep comprehension of the Colorado Workers' Compensation system and the Division's efforts to comply with the legislative charge to assure appropriate medical care at a reasonable cost. Requisite: Occupational and Environmental Medicine resident or permission of course director; completion of the Division of Workers Compensation Level II Accreditation course. Instructor consent required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

EHOH 6633 - International Travel and Health (1 Credit)

This course is designed to help students understand and respond to health and safety risks that accompany international travel. It emphasizes using available resources to create recommendations based on both travel itinerary and specific activities. Some medical subjects are included but medical jargon will be avoided. Prerequisites: This course is required for all CSPH students planning international travel for any independent coursework, Practicum and/or Capstone.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

EHOH 6634 - Spec Professions Protecting/Promoting Worker Health (1 Credit)

Introduction to multiple occupational health professions including industrial hygiene, ergonomics, occupational health psychology, occupational safety, health physics, occupational medicine, epidemiology, health promotion and wellness, program evaluation and risk management. Practice issues, current research and methods are covered.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EHOH 6635 - Climate Change and Health (3 Credits)

This course will study the potential health impacts of climate change with an emphasis on understanding the state of the science, and developing skills to identify vulnerable populations, evaluate climate adaptation and mitigation measures and communicate with stakeholders.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EHOH 6636 - Occupational Safety and Ergonomics with Journal Clubs (3 Credits)

This course will form a foundation for understanding of workplace factors important in the prevention of injuries. Students will recognize safety and ergonomic hazards that may lead to injury as well as learn strategies to abate these hazards. Students will apply knowledge gained during the course during student-led journal clubs.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6637 - Occup & Environ Health Working the West Industry Tours (1 Credit)

Interdisciplinary field experience meant to engage students in a variety of high-risk Colorado industries. Students will spend one week traveling around Colorado touring 5 uniquely hazardous work environments to receive first-hand experience of occupational hazards and get exposure to occupational safety and health promotion disciplines.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Summer.

EHOH 6638 - Communication Skills for Public Health Impact (3 Credits)

Experiential approach to training public health students to become better communicators using examples from environmental and occupational health. Grounded in theory, but focusing on practical skill development, this course will prepare students for common scenarios in which they will be called upon to state the case for public health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6639 - Occupational Health Psychology (3 Credits)

This course seeks to advance understanding of both organizational and individual factors that influence total worker health. The course includes an introduction to organizational psychology, seminal and current research and best practices regarding key topics and issues in occupational health psychology.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EHOH 6640 - The Built Environment and Public Health (3 Credits)

This course provides an introduction to the built environment and its impact on public health examining how specific features within the built environment and related policies (global, national and local) affect human health outcomes. The course will have a specific focus on regional and local built environment issues.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EHOH 6641 - Critical Policies in Global Health Engagement (3 Credits)

This course will provide a foundation of knowledge in the critical policies which govern global health engagement. Providing insights from experienced professionals, and using key case studies to highlight each policy, students will emerge with a pragmatic understanding of how these policies function during times of acute crisis. Suggested Prerequisite:

EHOH 6625

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6642 - Climate and Disaster Mental Health (3 Credits)

Contemporary issues in climate and disaster mental health with an emphasis on natural hazards, mass violence, disease outbreaks, civil conflict and forced displacement within a broader understanding of the pathways between mental health and climate change.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6643 - Air Quality and Public Health (3 Credits)

This course will provide a broad perspective on public health concerns related to air pollution and air quality. Topics include: air pollution sources; effects on human health and the environment; how climate change impacts air; air quality standards, sampling, monitoring and health assessments; bioterrorism; accessibility to clean air.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6650 - MPH Research Paper (1-2 Credits)

Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data. Permission of Department required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EHOH 6670 - Special Topics: Environmental & Occupational Health (1-3 Credits)

Special interest areas of current environmental and occupational research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 999.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EHOH 6710 - Disasters, Climate Change and Health (3 Credits)

This course provides a review of the impacts of all types of disasters and climate change on human health, using a broad framework of preparedness, mitigation, response, recovery, with an emphasis on vulnerability and adaptation. Crosslisted GEOG 5710.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EHOH 6840 - Independent Study: Environmental and Occupational Health (1-3 Credits)

Faculty directed independent study in topics related to environmental and occupational health. Department permission required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EHOH 6990 - MPH Capstone Preparation - EHOH (1 Credit)

MPH Capstone Preparation will focus on developing the basis for a strong capstone project, culminating in the finalization of the capstone proposal that meets the expectations of the concentration. Because identification of a preceptor, location and topic for a capstone project should be completed within the first two weeks of the semester, students are highly encouraged to begin this process prior to enrollment, with guidance from their advisor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

This course is restricted to students with a MPhD-MPH plan of study only.

Typically Offered: Fall, Spring.

EHOH 7030 - DrPH Directed Reading (1-2 Credits)

DrPH students prepare for comprehensive exams and dissertation research by becoming an expert in specific areas of research, including understanding of the historical development of specific areas, current research findings in specific areas, and current practice.

Requires permission of DrPH Program Director and instructor consent.

Prerequisite: Requires permission of DrPH Program Director and

Instructor consent.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EHOH 7401 - Climate Change and Worker Health (3 Credits)

This course builds on the student's understanding of climate-related health effects by examining how work design and organization, occupational exposures, and unique worker vulnerability contribute to the risk of injury or illness. Students will also examine specific mitigation and adaptation strategies and implementing these strategies.

Grading Basis: Letter Grade

Typically Offered: Spring.

EHOH 7402 - Advanced GIS for Public Health Research and Practice (3 Credits)

This course expands on the fundamentals of data management and basic analysis of spatial data so that the student can analyze space/time data that is commonly collected for environmental health, epidemiology and other public health disciplines. Spatial analysis using ESRI's ArcGIS Pro software, concepts of geostatistics, and using MATLAB functions and programming to model space/time random variables are covered. Students will gain the skills to model variables that change over space and time such as air pollutants, water pollutants, infections, etc.

Grading Basis: Letter Grade

Typically Offered: Fall.

EHOH 7403 - Research Methods: Climate, Disaster and Humanitarian Perspectives (3 Credits)

This is a doctoral level practical research proposal building course, focused on mixed methods approaches for testing health/public health interventions in climate change-affected, disaster and humanitarian settings.

Grading Basis: Letter Grade

Typically Offered: Summer.

EHOH 7405 - Advanced Communication Skills for Public Health Impact (3 Credits)

This doctoral level course offers an experiential approach to becoming more effective communicators and leaders in public health. Grounded in theory it will focus on advanced verbal and written skill development to prepare students to tackle tough scenarios in which they will be called upon to state the case for public health, especially focusing on non-public health/non-scientific audiences. The course will emphasize advanced communication skills needed to produce clear and effective messages through the lens of public health leadership. Offered in odd years.

Grading Basis: Letter Grade

Typically Offered: Spring.

EHOH 7631 - Advanced Methods in Environmental & Occupational Health (3 Credits)

This course will focus on five areas of advanced methodology for EOH: exposure assessment, toxicology, epidemiology, built environment, and worker health. Methods covered include survey design, environmental sampling, risk assessment, biomarkers, and on issues associated with analysis of secondary datasets. First of two course series. Prereq or Coreq: EHOH 6614

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EHOH 7632 - Advanced Field Methods in EOH (1 Credit)

This course follows and will build on the Advanced Methods in EOH course (EHOH 7631) where the EOH DrPH students prepare an NIH R21-style grant proposal. This course will then provide practical field and laboratory applications on the project from the Fall course that is based on the students' interests. Prerequisite: EHOH 7631 Instructor consent required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EHOH 7656 - Environmental Data Science for Public Health (3 Credits)

Cross listed with EPID 7656. Offered in odd years. Introduction to acquisitions, organization and analysis of geospatial data relevant to public health. Data sources covered will include ground-based air quality and weather sensors, remote sensing (satellite) products, climate and weather model output and data on water quality, traffic and mobility, and housing and sociodemographics. Prereq: BIOS 6601/BIOS 6602 or BIOS 6611/BIOS 6612 or a year of equivalent graduate-level statistics or permission of Instructor.

Grading Basis: Letter Grade

Typically Offered: Spring.

EHOH 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Environmental and Occupational Health.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

Typically Offered: Fall, Spring, Summer.

EHOH 8991 - DrPH Dissertation-Environmental & Occupational Health (1-10 Credits)

DrPH Dissertation work in Environmental and Occupational Health

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Epidemiology (EPID)

EPID 6605 - Introduction to R for Health Sciences (1 Credit)

This class will introduce students to the basics of using R for public health and other health sciences. R syntax, data wrangling (manipulation, summaries, tables, functions, and loops) and data visualization will be covered. No previous coding experience required. The course will be taught in one two-hour session per week for the first 8 weeks of the Fall semester.

Grading Basis: Letter Grade

Typically Offered: Fall.

EPID 6606 - Obesity and Cardiovascular Disease (1 Credit)

The epidemiology of obesity and cardiovascular disease and basic and clinical mechanisms on the pathophysiology of vascular biology, insulin resistance, and other risk factors for cardiovascular disease as well as behavioral, pharmacological and surgical therapeutic interventions to modify cardiovascular disease risk by weight reduction. Requisite: Cross-listed with IDPT 6006 Obesity and Cardiovascular Disease

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

EPID 6607 - Data Management with R (2 Credits)

This class will introduce students to data management skills necessary for a career in the public health workforce. Data collection, dataset cleaning, merging and manipulation, data security, and basic data summarization, analysis and display will be demonstrated and practiced in this skill-building course.

Grading Basis: Letter Grade

Typically Offered: Fall.

EPID 6624 - Public Health Surveillance (2 Credits)

This course focuses on characteristics, development, uses, and evaluation of major public health surveillance systems. History, goals, public health authority, analysis, interpretation, dissemination and privacy issues are covered. Key surveillance systems (communicable diseases, vital statistics, injury, cancer) are explored. Prerequisites: EPID 6630 Restriction: Offered odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6626 - Research Methods in Epidemiology (3 Credits)

Principles, concepts and methods for conducting ethical, valid and scientifically correct observational studies in epidemiological research are the focus of this class. Lectures and practical experience reinforce hypothesis formulation, study design, data collection and management, analysis and publication strategies. Prereq: BIOS 6601, BIOS 6680, EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6627 - Stigma, Health Inequities, and Global Health (1 Credit)

This course is designed to equip learners with a foundational understanding of structural stigma, how it manifests across a variety of global health contexts, and the social contexts that help explain its relative commonality. Learners who complete the course will also be able to identify descriptive epidemiologic approaches for measuring structural stigma as well as tools used for assessment of anti-stigma interventions.

Grading Basis: Letter Grade

Typically Offered: Summer.

EPID 6628 - Global Health and Disasters (2 Credits)

Preparation for international experiences and future global health work. The interactive training incorporates readings, lectures, small group problem based learning exercises, journal club discussions, technical skill sessions and a disaster simulation exercise. 2 week M-F training followed by 4 journal club sessions.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EPID 6629 - Clinical Epidemiology (2 Credits)

This course provides an overview of the design, conduct and appraisal of clinical research. Topics include study design, issues in randomized trials, measurement error, assessment of diagnostic and screening tests, measurement of health-outcomes, meta-analysis and use of questionnaires. Prerequisites: EPID 6630. Restriction: Offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Summer.

EPID 6630 - Epidemiology (3 Credits)

This course provides an introduction to descriptive and analytic methods in epidemiology and their application to research, preventive medicine and public health practice.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall, Spring.

EPID 6631 - Analytical Epidemiology (3 Credits)

This course will provide the fundamental analytical skills for assessing and reporting disease status, determinants of disease and their impact on public health. Students will learn methods of determining rates of disease occurrence, measures of associations between exposures and disease, and techniques for identifying and correcting for misclassification, effect modifiers and confounders. This is a skill-building course. BIOS 6680 OR both EPID 6605 and EPID 6607 are not prerequisite but are strongly encouraged. Prereq: EPID 6630 and BIOS 6601 or BIOS 6611.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring, Summer.

EPID 6633 - Clinical Preventive Services: Evidence-Based Practice (1 Credit)

This course introduces students to evidence-based recommendations for (and against) key clinical preventive services; methods for developing evidence-based practice guidelines and implementation of clinical preventive services in diverse practice settings; and effective implementation at the individual, provider, and system levels. Prerequisite: EPID 6630 or equivalent or permission of instructor. Prior or in-progress clinical degree (MD, DVM, DDS, RN, NP, PA, LPN, PharmD or similar) required. Offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6634 - Applied Global Health Epidemiology (2 Credits)

This course provides the opportunity to apply epidemiologic analysis skills and practice communication of findings using "real world" examples of global public health investigations, research projects, and programs; and explores the ethical, legal, political, and cultural aspects of working in global public health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EPID 6635 - Infectious Disease Epidemiology (2 Credits)

This course considers the epidemiology of selected communicable diseases. Methods for their prevention and control, and assessment of these methods will be treated primarily through case studies. Prereq: EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6636 - Chronic Disease Epidemiology (3 Credits)

The major chronic diseases of Western countries will be reviewed including heart disease, cancer, stroke, diabetes, neurological diseases, and selected other conditions. Factual information about epidemiology of these diseases will be provided with the discussion of methodological issues which arise. Offered in odd years. Prerequisites: EPID 6630.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EPID 6637 - Injury and Violence Epidemiology and Prevention (2 Credits)

Students will learn the major causes of and risk factors for injuries and violence, identify and use key data sources to characterize injury problems, develop and evaluate injury control and prevention strategies, critically analyze literature and explore injury related research questions. Offered in odd years. Prerequisites: EPID 6630 or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Spring.

EPID 6638 - Global Cardiovascular Epidemiology (2 Credits)

A review of the major issues in global cardiovascular disease epidemiology, including trends, the extent of the disease nationally and internationally, implications of major epidemiologic studies, and strategies for prevention. Emphasis of the course will be on review and interpretation of the cardiovascular epidemiology literature. Prereq: EPID 6630. Restriction: Offered even years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

EPID 6640 - Investigation of Disease Outbreaks (2 Credits)

This course will cover the epidemiologic steps in a disease outbreak investigation and the methods used in detection, investigation and control of disease outbreaks. Outbreak case studies will be used to illustrate concepts and approaches. Students will describe, analyze and interpret outbreak data. Prerequisite: EPID 6630

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Summer.

EPID 6641 - Epidemiology of Foodborne and Diarrheal Diseases (2 Credits)

Agents causing foodborne and diarrheal diseases have different clinical presentations, environmental niches, and modes of transmission. Students will learn about important foodborne agents, surveillance and epidemiological methods used to investigate risk factors for disease, and prevention and control strategies. Prerequisite: EPID 6630

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EPID 6642 - Genetics in Public Health (2 Credits)

Course introduces public health and research applications in genetics. Topics will include population genetics, genetic epidemiologic principles, screening, ethics, and the effect of genetics on population health. Interactive discussions and lectures will be based on current topics from literature. Prerequisite: EPID 6630. Course is offered in odd years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EPID 6643 - Epidemiology and Prevention of TB/HIV/STDs (2 Credits)

Surveillance and control of tuberculosis, HIV/AIDS, and sexually transmitted diseases require a range of public health and epidemiologic approaches. Students will apply descriptive and analytical epidemiologic methods to the study of these infectious diseases. Prerequisites:

EPID 6630

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EPID 6644 - Maternal Child Health Epidemiology (3 Credits)

The purpose of this course is to train public health students to use epidemiologic tools for the appropriate interpretation of data and information to drive MCH program assessment, planning, evaluation and policy development.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

EPID 6645 - One Health - EcoHealth - Planetary Health (1 Credit)

This course provides students with a fundamental understanding of the integrated health concepts 'One Health', 'EcoHealth' and 'Planetary Health'. The students will learn to navigate the landscape of these concepts including synergies, overlaps and differences. The course is aimed at all students who wish to better understand integrated health concepts beyond human health. Students will also be able to further develop their skills in the moderation of discussions and will have opportunities to network with international experts joining the course. After being initiated to the core concepts, student will apply their knowledge by discussing the inclusion of these concepts in exemplary research projects presented by external lecturers and experts.

Grading Basis: Letter Grade

Typically Offered: Spring.

EPID 6646 - Methods for Conducting Systemic Review and Meta-Analysis (2 Credits)

This course provides a broad understanding of the application of systemic reviews to public health, medicine and health policy introducing key steps for performing systemic reviews and meta-analyses through hands-on exercises, including formulating a research questions and hypothesis, developing a search strategy, identifying eligible studies, extracting data, assessing the risk of bias of included studies and synthesizing the evidence qualitatively and quantitatively. Focuses on analytical skills in performing pairwise meta-analysis. Prerequisite: EPID 6630

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EPID 6647 - CU Denver in India: Global Health in the Heart of India (3 Credits)

This course is a two-week field-based course in which students will engage directly in a community needs assessment of 60 communities and will observe and participate in outreach activities related to breast and cancer screening of Indian women. Students will acquire knowledge and specific skills on methods and practice.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

EPID 6648 - Theory/Practice Foodborne Disease Outbreak Detection (1 Credit)

This course focuses on the practical basis for developing and implementing methods for foodborne disease outbreak detection, investigation and control; using recent outbreaks to highlight underlying principles.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EPID 6649 - Vaccine Science, Application and Policy (2 Credits)

Processes leading to vaccine development and implementation and the use of immunizations for disease prevention. Emphasis on an in-depth understanding of the vaccines successfully introduced into routine immunization programs and the epidemiologic tools necessary to develop and evaluate vaccines, policy making, safety and effectiveness. Offered in odd years. Prerequisite: EPID 6630 or Permission of Instructor

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

EPID 6650 - MPH Research Paper (1-2 Credits)

Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data. Permission of Department required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EPID 6651 - EPID MS Research Paper (1-6 Credits)

Masters research paper in epidemiology is completed under this course.

Grading Basis: Letter Grade with IP

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

EPID 6652 - Fundamentals of Clinical and Epidemiological Research (1 Credit)

Designed for clinicians who are interested in rapidly learning fundamental research principles appropriate to developing new research on child abuse. Non-clinicians by permission. Creating a study question, formulating hypotheses, study designs and basics of statistical inference.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Summer.

EPID 6653 - Challenges/Opportunities Child Maltreatment Research (1 Credit)

Course is designed for trained researchers interested in examining topics related to child abuse. It will provide basic background on the child abuse problem from multiple perspectives and facilitate cross-disciplinary exploration of controversies and related unanswered research questions.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Summer.

EPID 6654 - Child Abuse/Neglect Prev Rsrch/Eval Public Health Lens (1 Credit)

This course will provide an overview of key concepts underlying prevention of child abuse and neglect from a public health perspective with an emphasis on eliminating disparities, principles of public health research and practice applied to child abuse and neglect prevention and different aspects of prevention research and evaluation.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Summer.

EPID 6655 - Infectious Diseases Causing Chronic Diseases (1 Credit)

The burden of chronic disease that is currently thought to be associated with infectious diseases is large. This includes infectious disease exposures by both accepted causal relationships as well as by diseases where infectious diseases are discussed as a contributing factor or assumed to play a role without formal proof at this point. Current methodological challenges include long latency, partial causality, and the fact that the sequence of infectious disease exposures during the life course might play a role. Students will be introduced to examples of infectious diseases implicated in chronic diseases that include autoimmunity and cancer. Students will also be able to further develop their skills in the moderation of discussions and will have opportunities to network with international experts joining the course. This course aims to prepare students for future research areas that are beyond the current understanding of pathogenesis of chronic diseases. Offered in odd years. Prereq: EPID 6635 or EPID 6640 and EPID 6630 and BIOS 6601 or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Spring.

EPID 6657 - Concepts and Methods of Infectious Disease Epidemiology (2 Credits)

Deeper understanding of concepts and methods specific to infectious disease epidemiology, building upon principles of general epidemiology, and knowledge of specific infectious diseases. The course builds on the central principle of dependent happenings. Prerequisite: EPID 6630

Grading Basis: Letter Grade

Typically Offered: Spring.

EPID 6658 - Fundamentals of Social Epidemiology (2 Credits)

This course provides an overview of theories and empirical evidence that shows support for the relationships between social environments and health including an overview of the historical development of social epidemiology and the major theories in social epidemiology. How constructs of social class, race/ethnicity and gender are all used in social epidemiology within observational, quasi-experimental, and experimental approaches, as well as interventions and policy analyses are discussed.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

EPID 6670 - Special Topics: Epidemiology (1-3 Credits)

Special interest areas of current epidemiology research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 999.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EPID 6840 - Independent Study: Epidemiology (1-3 Credits)

Faculty directed independent study in topics related to epidemiology.

Restriction: Department permission required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 999.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EPID 6950 - Masters Thesis (1-6 Credits)

Epidemiology thesis work is completed under this course.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

EPID 6990 - MPH Capstone Preparation - EPID (1 Credit)

MPH Capstone Preparation will focus on developing the basis for a strong capstone project, culminating in the finalization of the capstone proposal that meets the expectations of the concentration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

This course is restricted to students with a MPHD-MPH plan of study only.

Typically Offered: Fall, Spring, Summer.

EPID 7030 - DrPH Directed Reading (1-2 Credits)

This course will prepare DrPH students for comprehensive exams and dissertation research by becoming an expert in specific areas of research, including understanding of the historical development of specific areas, current research findings in specific areas, and current practice. Requires permission of course director and Instructor consent. Cross-listed with CBHS 7030.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

EPID 7605 - Research Methods with Secondary Data Sources (3 Credits)

Principles and methods for research design and analysis of secondary data sources including those designed for surveillance and those derived from practice. Students evaluate whether specific research questions can be answered with secondary data. Offered Spring of even years.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

EPID 7615 - Pharmacoepidemiology (2-4 Credits)

This course builds upon fundamental concepts and methods of epidemiology, applied to the study of pharmaceuticals. Topics include: The FDA approval process, mechanisms of adverse drug effects, methods and data systems for studying drug-effect relationships, and evaluating published pharmacoepidemiology studies. Offered in variable years.

Prereq: EPID 6630, 2 course biostatistics series (BIOS 6601-6602 or BIOS 6611-6612). Restriction: Offered odd years, NA for 2 credit section.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

EPID 7631 - Advanced Epidemiology 1 (3 Credits)

This course takes a deeper dive into epidemiologic concepts with a focus on epidemiologic theory, causality and key assumptions underlying common tools and methods. The course emphasizes strategies to identify and reduce common sources of bias and threats to validity as well as concepts of reproducible research. Practical skills will be developed in applied exercises using statistical software and demonstration datasets. Requisite: EPID 6630 or equivalent and BIOS 6611 (may be taken concurrently) or BIOS 6602 with consent of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall.

EPID 7632 - Advanced Epidemiology 2 (3 Credits)

This is an advanced course on epidemiologic methods designed to improve the student's ability to conduct and interpret observational epidemiologic studies. Prereq: EPID 6630, EPID 6631, BIOS 6601

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

EPID 7656 - Environmental Data Science for Public Health (3 Credits)

Cross listed with EHOH 7656. Offered in odd years. Introduction to acquisition, organization and analysis of geospatial data relevant to public health. Data sources covered include ground-based air quality and weather sensors, remote sensing (satellite) products, climate and weather model output and data on water quality, traffic and mobility, and housing and sociodemographics. Prereq: EPID 6605, BIOS 6601/BIOS 6602 or BIOS 6611/BIOS 6612 or a year of equivalent graduate-level statistics or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Spring.

EPID 7911 - Epidemiologic Field Methods (1-4 Credits)

PhD students have the opportunity to work with faculty on current epidemiologic projects to develop skills in field research, proposal writing, budget development, staff hiring and training, protocol and instrument development and implementation, and specific methods topics. Prereq: EPID 6626, EPID 6630, EPID 6631, EPID 6632, BIOS 6611, BIOS 6612.

Restriction: Enrollment in Epidemiology PhD program or permission of instructor is required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring, Summer.

EPID 7912 - Developing a Research Grant (3 Credits)

PhD/DrPH students prepare high quality, successful, research grant applications through development of cogent research questions & appropriate study designs. Students familiarize themselves with grant writing and review process and improve critical thinking skills and quality of scientific writing. Prerequisites: Enrollment in a doctoral program and permission of Instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall.

EPID 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work Epidemiology. Prereq: Permission of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

EPID 8991 - DrPH Dissertation work in Epidemiology (1-10 Credits)

DrPH Dissertation work in Epidemiology

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Ethnic Studies-CSU (ETHS)

ETHS 5020 - Research Methods (3 Credits)

This course focuses on gaining a basic understanding of qualitative inquiry with a particular emphasis on narrative research, phenomenology, grounded theory, ethnography and case study. Interpretive frameworks such as feminist theories, critical theory and critical race theory, queer theory and disability theories will be addressed.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Colorado State University.

Typically Offered: Fall.

ETHS 6950 - Independent Study (1-18 Credits)

Independent study in ethnic studies.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Family Practice (FMMD)

FMMD 5010 - Rural Program Seminars and Workshops (1 Credit)

Course is open to & required for all students in the Rural Program. Sessions are focused on knowledge & skills that prepare Rural Program students for the rural longitudinal integrated clerkship & span these general domains: Clinical knowledge, clinical skills, community engagement & public health, professional ethics & healthcare business and finance.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 5040 - Family Medicine Survey (1 Credit)

Students will attend 12 weekly 1 hour sessions on a variety of foundational topics in primary care including family planning and contraceptive options with an accompanying skills workshop in contraceptive procedures, sports medicine in primary care with skills workshop in joint injections, addiction medicine and behavioral health in primary care, family centered maternity care with accompanying skills workshop in OB ultrasound, common dermatologic conditions in primary care with skills workshop in biopsy techniques, health equity and delivery of care to underserved populations. Students will have the opportunity to explore various models of primary care delivery and fellowship opportunities in family medicine.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

FMMD 8002 - UC Health Fam Med AI (8 Credits)

Offered all sections. 4 wks. Max:1. Experience CU Family Medicine! Students will be members of the inpatient service team at the Anschutz Inpatient Pavilion, take call, and will spend 2 half days per week at the A.F. Williams Family Medicine Center (outpatient clinic).

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8007 - Out-Patient Family Med (8 Credits)

Offered all sections. 4 wks. Max: 1. Course is an outpatient family medicine at A.F. Williams Family Medicine Center and Denver Health's Lowry Family Medicine Clinic. Multidisciplinary faculty including pharmacologists, behavioral scientist, and experienced family physicians and residents caring for a diverse group of patients.

Grading Basis: Medical School HP

FMMD 8012 - Oral Health: Acute Dental (4 Credits)

2 wks. Max:4. The focus of this elective is on recognition, assessment, triage and treatment of acute dental problems such as pain, infection and trauma. Students interested in rural or underserved primary care practice should take this elective. Prereq: 4th year medical student. Restrictions: This elective is offered only at selected times, students must communicate with Course Director about what times are available. It will not be offered in June, July, August, or December.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 8017 - Northern CO Fam Med/OB AI (8 Credits)

Students work with family medicine faculty & residents while acting as the primary provider for several patients daily. Students see patients & assist team with daily tasks, while participating in the care of hospitalized adults, patients in OB triage, labor & delivery, postpartum, & normal newborn. 2wks inpt medicine, 2wks OB/Newborn.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8018 - St. Joseph-Bruner FMC AI (8 Credits)

At the SJH FM Residency, the sub-intern will engage in both inpatient and outpatient clinical care. They will be an integral part of the Family Medicine Service during their inpatient weeks. The outpatient time will occur in the residency clinic, serving an urban, under-served patient population in Denver and surrounding areas.

Grading Basis: Medical School HP

Typically Offered: Spring, Summer.

FMMD 8019 - St Anthony Nth Fam Med AI (8 Credits)

Students will engage in outpatient and inpatient care during this sub-internship at a Colorado family medicine residency. You will be supervised by the senior resident or faculty attending while on this rotation. This rotation is split into Inpatient, OB if desired, and outpatient clinics.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8020 - St. Mary's Family Med AI (8 Credits)

Students will practice as a PGY-1 on this Sub-I. The schedule includes 2 wks admitting and rounding on the teaching service, 1 wk of night float with a focus on independence, cross-cover, and evening ICU & Peds rounds, and 1 wk of the family med clinic, a fully-integrated PCMH. Faculty attendings give individual attention to learning.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8021 - Southern CO Family Med AI (8 Credits)

During the Sub-I at the Southern CO Family Medicine residency, students will work with 2 interns and 2 upper level residents on the inpatient medicine service, with some opportunities to cross-cover on pediatrics & obstetrics. Several half-days per week, the student will be able to attend High-Risk OB and specialty outpatient clinics.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8022 - Swedish Family Medicine AI (8 Credits)

Students will engage in outpatient and inpatient care during this sub-internship at the Swedish family medicine residency. Students will work with residents and faculty in the out-patient clinic, on the Inpatient Service, in the nursing home and at the school-based clinic.

Grading Basis: Medical School HP

Typically Offered: Fall, Summer.

FMMD 8023 - Fort Collins Family Med AI (8 Credits)

We provide students with exposure to full scope family medicine. Our Sub-I includes 3 weeks of inpatient medicine, seeing patients on the medicine, peds and Ob services. There is 1 week of outpatient, where Sub-Is will see adults, children, and prenatal patients; and do nursing home visits, procedures, and other specialty care clinics.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8024 - NCFM – Wray Med/Ob AI (8 Credits)

Students work with family medicine faculty & residents while acting as the primary provider for several patients daily. Students see patients & assist team, while longitudinally participating in the care of patients between the ED, hospital, labor & delivery, and clinic. Requires commitment to participating in care over multiple settings. Pre-requisite: Open to students interested in pursuing a career in family medicine with specific interest in full-spectrum and rural family medicine.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8025 - NCFM – Sterling Med/OB AI (8 Credits)

Students work with family medicine faculty & residents while acting as the primary provider for several patients daily. Students see patients & assist team, while longitudinally participating in the care of patients between the ED, hospital, labor & delivery, and clinic. Requires commitment to participating in care over multiple settings. Requisite: Open to students interested in pursuing a career in family medicine with specific interest in full-spectrum and rural family medicine.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

FMMD 8030 - Outpatient Family Medicine, Denver Health Lowry (8 Credits)

Full spectrum outpatient family medicine. Emphasis in immigrant/refugee health and care for marginalized communities. FQHC with wrap-around services: integrated BH, clinical pharmacy, WIC, dental, family planning, etc. Special opportunities include refugee clinic, MAT, transgender care, procedures/vasectomy, sports medicine.

Grading Basis: Medical School HP

Typically Offered: Spring.

FMMD 8031 - Rural Health Policy and Advocacy Elective (4-8 Credits)

Students who have done their core clinical clerkships in a rural area will identify a need or group of needs in a rural community, and complete a policy advocacy project to address this need. Prerequisite: Only students who have successfully completed the rural LIC are eligible for this elective.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

FMMD 8032 - Rural Clinical Elective (4-8 Credits)

In this course, the student will participate in the care of patients in a rural setting. Students will work together with the course directors to identify preceptor(s) for this course. Preceptors will be from a variety of specialties that are available in rural areas. Prerequisite: Open to all students who have successfully completed core clinical clerkships.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

FMMD 8033 - Inpatient Family Medicine Elective (8 Credits)

Students will complete a 4 week elective and function as a team member on the Family Medicine Inpatient service at Denver Health Hospital. During this elective, students will have the opportunity to function at the level of an acting intern to provide inpatient care to Family Medicine patients. Depending on student interest, there may be opportunities to spend time on the FM OB service at Denver Health, participating in the care of patients on labor and delivery, as well as rounding on newborn infants and providing postpartum care. Students will work directly with University of Colorado Family Medicine residents and Attendings.

Grading Basis: Medical School HP

Typically Offered: Spring, Summer.

FMMD 8034 - Rural Program Teaching Elective (2 Credits)

In this course, upper class Rural Program students will serve as Teaching Assistants (TAs) for the RP Foothills elective which occurs on Wednesdays from 10am-noon. TAs will assist with building the Foothills schedule, assist with hands-on workshops, and lead/facilitate at least one session for the 1st year students. Prerequisite: only open to students in CU School of Medicine's Rural Program

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 8035 - Intro Primary Care Sports Med (1-12 Credits)

The primary goal of this elective is to increase student exposure to and knowledge of the field of Primary Care Sports Medicine as well as various ways that Family Medicine physicians practice in the community and engage with their community with regards to fitness and athletics. A secondary goal of this elective is to start to build a foundation of knowledge regarding musculoskeletal medicine and medical care of active individuals. There will also be a focus on learning about injury prevention. This experience provides students with longitudinal mentorship in the case that they may be interested in a career in Sports Medicine and/or Primary Care. In order to increase exposure to the field of Primary Care Sports Medicine, there may be an opportunity for community based athletic coverage with faculty in the Division of Primary Care Sports Medicine.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

FMMD 8036 - Activism, Reflective Transformation, Integrative Medicine, and Reproductive Justice (4 Credits)

This is a course through AMSA, that is in need of a medical school host sponsor institution. For many years, HEART-IM has taken place at the Quaker Center in Ben Lomond, California, where students spend the month in a cooperative living and learning environment, cooking and cleaning together, teaching and learning from each other. The Humanistic Elective in Activism, Reflective Transformation, and Integrative Medicine (HEART-IM) provides up to twenty-five fourth-year medical students with a unique and rewarding way to enrich their medical school careers and prepare for their future work as healer-physicians. Specific sessions will be focused on integrative medicine, reproductive healthcare (including abortion care and family planning) and the Reproductive Justice movement, cultural somatics, intentional community building, reflective transformation including meditative practices, and personal growth skills such as communication and intention. The experience is designed to cultivate each participant's vision of what it means to be a healer and support a plan for maintaining that vision throughout residency and beyond. For full description: <https://www.amsa.org/learn/heart-im>

Grading Basis: Pass/Fail

FMMD 8100 - FMMD Elective Away (4-8 Credits)

This Family Medicine elective will be held at a site in Colorado or another state. Students must obtain departmental approval one month prior to the start. 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

FMMD 8600 - Research in FMMD (4-24 Credits)

Students may participate in scholarly work directed by specific Family Medicine faculty members including practice-based research, curriculum development, patient education projects, and other scholarly activities. A DFM, MSA or research mentor must supervise and are responsible for evaluations.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Fish, Wildlife & Conservation Bio-CSU (FWLD)

FWLD 5440 - Ecotoxicology (3 Credits)

The purpose of this course is to provide students with an overview of ecological and environmental aspects of toxicology and pollution ecology. The course will emphasize population, community, and ecosystem responses to contaminants and other anthropogenic stressors. Prerequisite: Statistics and introductory biology required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Fixed Prosthodontics (DSFD)

DSFD 6031 - Clinical Fixed Prosthodontics 1 (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSFD 6610 - Fixed Prosthodontics (0.1-5 Credits)

Advanced pre-clinical lecture course. Ceramic restorations are included with discussion of pontic design and manipulation of gold solder. Dowel-core fabrication for endodontically treated teeth is covered. Clinical application is stressed and study of diagnosis and treatment planning is expanded.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSFD 6611 - Fixed Prosthodontics Laboratory (0.1-5 Credits)

Continuation of Fixed Prosthodontics with emphasis on ceramic restorations and the procedures involved in fabricating fixed bridges in the anterior of appearance zone. Restorations include direct pattern fabrication of dowel-cores to build up badly broken-down or fractured teeth.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSFD 7011 - Clinical Fixed Prosthodontics 2 (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSFD 7022 - Clinical Fixed Prosthodontics 3 (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSFD 7033 - Clinical Fixed Prosthodontics 4 (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSFD 8011 - Clinical Fixed Prosthodontics 5 (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSFD 8022 - Clinical Fixed Prosthodontics 6 (0.1-5 Credits)

Clinical rotation in fixed prosthodontics.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSFD 8861 - Advanced Implant Prosthodontic Seminar (0.1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

Food Sci and Hum Nutrition-CSU (FSHN)

FSHN 5000 - Food Systems, Nutrition and Food Security (2 Credits)

Global and local food systems and their potential influence on nutrition and food security. Prereq: FSHN 350.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 5200 - Advance Medical Nutrition Therapy (3 Credits)

Role of nutrition in etiology and treatment of selected disorders. Prereq:

FSHN 5500 or FSHN 5510.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Summer.

FSHN 5250 - Nutrition Education, Theory and Practice (2 Credits)

Examination of current theories, skills, and models used in nutrition education programs as preparation for research and practice. Instructor permission if not in Public Health Nutrition focus area. Prereq: 350.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 5300 - Principles of Nutrition Science and Metabolism (3 Credits)

This course provides an understanding of the fundamental scientific concepts of human nutrition including digestion, absorption, metabolism, and function of macro- and micronutrients as they relate to maintenance of cellular homeostasis, human health and disease.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 5500 - Advanced Nutritional Science I (3 Credits)

Protein, vitamin, mineral metabolism: human studies, animal models.

Prereq: BC 351 or BC 403; FSHN 350

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

FSHN 5510 - Advanced Nutrition Science II (3 Credits)

Carbohydrate, lipid, energy metabolism; human studies, animal models.

Instructor permission if not in Public Health Nutrition focus area. Prereq: BC 351 or BC 403; FSHN 350.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 5610 - Global Nutrition (2 Credits)

This course will analyze global nutrition problems related to hunger, malnutrition, and food security. Students will learn about current policies, approaches and research trying to address these issues in different global contexts.

Grading Basis: Letter Grade

Typically Offered: Fall.

FSHN 6200 - Community Nutrition Plan and Evaluation (3 Credits)

Community nutrition assessment; nutrition program planning and evaluation; nutrition policy analysis. Prereq: FSHN 350.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

FSHN 6280 - Advanced Nutrition Counseling Techniques (2 Credits)

Principles, strategies, and techniques for interviewing, assessing, and providing nutrition counseling in community settings.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 6400 - Select Topics in Nutritional Epidemiology (2 Credits)

Overview of topics in nutritional epidemiology, study design, interpretation of findings, linkage of data to action. Prereq: FSHN 350; STAT 301 or STAT 307/ERHS 307

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 6500 - Recent Dev in Human Nutrition - Proteins (2 Credits)

The purpose of this course is to read and discuss the recent literature on nutrition topics that are of emerging importance and relevance to major health promotion/disease prevention issues. This course covers protein, vitamins, and minerals. Prerequisite: FSHN 5500 required

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

FSHN 6501 - Human Nutrition: Carbohydrates, Lipids and Energy (2 Credits)

Appraisal of literature on human nutritional status. Instructor permission if not in Public Health Nutrition focus area. Prereq: FSHN 350.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

FSHN 6502 - Recent Developments in Human Nutrition - Genomics (2 Credits)

Students will learn about recent human nutrition developments pertaining to genomics, proteomics, and metabolomics. Prerequisite: Organic chemistry; Biochemistry; 300-level human nutrition course; FSHN 5510.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

FSHN 6600 - Women's Issues in Lifecycle: Nutrition (2 Credits)

Current nutritional issues related to selected stages of the lifecycle compared to normal adult nutritional needs. Prereq: FSHN 459.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

FSHN 6950 - Independent Study: Food Science (1-18 Credits)

Specialized study in food science under supervision of faculty. Instructor permission if not in Public Health Nutrition focus area.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

FSHN 6951 - Independent Study: Nutrition (1-18 Credits)

Specialized study in nutrition under supervision of faculty. Instructor permission if not in Public Health Nutrition focus area.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Food Technology-CSU (FTEC)

FTEC 5720 - Food Biotechnology (2 Credits)

Interrelationships among microorganisms, food processing methods, advances in biotechnology and food quality, spoilage, shelf-life and safety.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

FTEC 5740 - Current Issues in Food Safety (2 Credits)

Current food safety issues from field to table; microbiological, consumer, processing and agricultural issues.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Genetic Counseling (GENC)

GENC 6101 - Psychosocial Aspects of Genetic Counseling 1 (2 Credits)

This is the first course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal, pediatric and adult clinical settings. Coreq: GENC 6105, GENC 6110. Restrictions: Matriculated students in Genetic Counseling MS Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6102 - Psychosocial Aspects of Genetic Counseling II (2 Credits)

This is the second course in a two-semester sequence addressing basic psychosocial and counseling theories, approaches, and resources necessary for the provision of genetic counseling to clients and their families in prenatal pediatric and adult clinical settings. Prereq: GENC 6101. Co-Req: GENC 6105, GENC 6110. Restrictions: matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6105 - Basic Interviewing Skills (1 Credit)

This course covers fundamental theories and principles of effective patient/client interviewing in genetic counseling practice. Lectures are combined with hands-on role plays and interviews so that students may gain applied experience and receive feedback to foster skills development throughout course. Coreq: GENC 6101, GENC 6110.

Restriction: Matriculated student in Genetic Counseling M.S. Program

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6110 - Topics in Medical Genetics I (3 Credits)

First course in a two-part course sequence regarding principles of clinical genetics and genetic counseling and development of clinical skills used in various medical genetics settings. Fall semester focuses on principles important in pediatric and general genetics settings.

Restriction: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6111 - Topics in Medical Genetics II (2 Credits)

Second course in two-course sequence regarding principles of clinical genetics and genetic counseling used in various medical genetics settings, and development of critical skills. Spring semester focuses on prenatal and adult genetics clinic settings. Prereq: GENC 6110.

Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6120 - Clinical Cytogenetics and Molecular Genetics (3 Credits)

This course provides integrated instruction regarding human cytogenetic and molecular genetic principles, techniques, and diagnostic testing approaches used in clinical evaluation and risk assessment for genetic disorders/predispositions in prenatal and postnatal patient populations.

Coreq: GENC 6121. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6121 - Laboratory in Clinical Cytogenetics and Molecular Genetics (2 Credits)

Course provides introduction to specific methodologies and interpretation of studies used in diagnostic cytogenetics and molecular genetics laboratories. Principles discussed in the co-requisite clinical cytogenetics and molecular genetics course will be applied through demonstrations, hands-on experiments, discussion of illustrative cases. Coreq: GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6123 - Applied Laboratory Genetic Counseling (1 Credit)

A required rotation in genetic testing laboratories. Genetic counseling students learn about the professional practice of laboratory-based genetic counselors and specific skills such as test ordering, variant interpretation, results report writing, communication with clients, and collaboration with other members of laboratory teams. Prereq: GENC 6120, GENC 6121. Restriction: Matriculated student in M.S. Genetic Counseling Program.

Grading Basis: Letter Grade

Typically Offered: Spring.

GENC 6130 - Cancer Genetics and Genetic Counseling (2 Credits)

Course in providing genetic counseling services to clients with or at risk for hereditary cancer predisposition. Topics include clinical oncology, epidemiology, molecular biology of cancer, risk assessment, genetic testing, ethical/legal issues, clinical research considerations, psychosocial impact/support, specific genetic counseling approaches.

Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6140 - Human Inborn Errors of Metabolism (2 Credits)

Course provides systematic review of major metabolic disorders, including their clinical phenotypes, diagnosis, and management. Physiological and laboratory testing principles important to understanding these disorders will be reviewed. Psychosocial impact of metabolic disorders and genetic counseling approaches will be discussed. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6150 - Congenital Malformations and Disorders of the Newborn (1 Credit)

This survey course covers common major malformations and non-metabolic genetic disorders identified by newborn screening programs. Clinical phenotypes, diagnosis, management and etiology are addressed. Psychosocial impact of these conditions and genetic counseling approaches will be discussed. Prereq: GENC 6110. Co-Req: GENC 6111.

Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6170 - Introduction to Clinical Research for Genetic Counseling Students (1 Credit)

An introduction to clinical research including an overview of ethical principles, study methods and designs, practical execution, data analysis and presentation of results. Possible roles of a genetic counselor in the conduct of clinical research will be a course focus. Restrictions: Matriculated student in MS Genetic Counseling Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6201 - Advanced Psychosocial Genetic Counseling (2 Credits)

This course examines advanced genetic counseling techniques as they relate to psychosocial theories, specific client characteristics and the client/counselor dynamic. Critical discussion of core topics and readings and case analysis will be used for instruction. Prereq: GENC 6101 and GENC 6102. Restrictions: Matriculated second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6210 - Professional Issues in Genetic Counseling I (2 Credits)

First course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Fall semester course focuses on professional standards, professional ethics, legal principles and health systems and policy issues relevant to genetic counselors. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6211 - Professional Issues in Genetic Counseling II (2 Credits)

Second course in a two course sequence regarding professional practice issues of master's level genetic counselors. The Spring semester course focuses on disability issues, cultural competency, public health genetics, research methods in genetic counseling, and professional roles. Prereq: GENC 6210. Restrictions: Second year student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

GENC 6250 - Risk Calculation in Genetic Counseling (1 Credit)

This course covers pedigree analysis and risk calculation principles used by genetic counselors in clinical practice. Prereq: GENC 6110, GENC 6120. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

GENC 6910 - Applied General Genetics Clinic (3 Credits)

This is a clinical rotation for Genetic Counseling M.S. students through a general genetics clinic serving a variety of referral indications. Students will learn and practice case management, history taking, risk assessment, counseling and client advocacy skills. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6911 - Applied Prenatal Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a prenatal diagnosis and genetics clinic. Students will learn/practice history taking, risk assessment, patient education and genetic counseling, case management, as well as observe prenatal diagnosis procedures. Prerequisites: GENC 6101, GENC 6105, GENC 6110.

Restriction: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6912 - Applied Metabolic Genetics Clinic (3 Credits)

This is a clinical rotation for genetic counseling students through a genetics clinic for inborn errors of metabolism. Students will work with patients referred for diagnostic evaluation, medical/nutritional management of specific conditions, and follow-up of positive newborn metabolic screening results. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6913 - Applied Regional & Specialties Genetics Clinics (1-2 Credits)

This is a clinical rotation for genetic counseling students through regional outreach (telehealth) genetics clinics and specialty/multidisciplinary clinics serving patients with various genetic conditions. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6914 - Applied Hereditary Cancer Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through adult and pediatric hereditary cancer clinics for individuals seeking genetic counseling and testing for genetic cancer predisposition syndromes. Section 01 - Adult I, Section 02 - Adult II, Section 05 - Pediatric. Program. Prereq: GENC 6105, GENC 6110, GENC 6120, GENC 6130

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6915 - Applied Adult Medical Genetics Clinic (1 Credit)

This is a clinical rotation for genetic counseling students through a medical genetics clinic and clinical research settings providing diagnosis, management, risk assessment and genetic counseling for adults. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6919 - Applied Medical Genetics Clinic - Clinical Elective (1-3 Credits)

This is an elective clinical rotation for genetic counseling students desiring to arrange training in outside of core required clinical rotations or an additional, advanced rotation. Prereq: GENC 6101, GENC 6105, GENC 6110. Restrictions: Matriculated student in Genetic Counseling M.S. Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6920 - Applied Medical Genetics-Laboratory Genetic Counseling Elective (1 Credit)

An elective rotation for students desiring an advanced, applied training experience with genetic counselors based in a genetics diagnostic laboratory. Restrictions: Matriculated student in GENC program who has completed required prerequisite courses listed; Permission of instructor.

Prereq: GENC 6120; GENC 6121; GENC 6122

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

GENC 6940 - Capstone in Genetic Counseling (1 Credit)

Students will develop a proposal and complete an individualized scholarly project that contributes to the knowledge and/or practice of genetic counseling. GENC matriculated student with 2 semesters required coursework completed. Permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

Geriatric Dental Medicine (DGER)

DGER 8001 - Advanced Clinical Geriatric Dentistry 1 (0.5-5 Credits)

This course provides introductory clinical experience in providing advanced geriatric dental care to older, medically-complex, frail adults under the guidance of an expert clinician.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DGER 8002 - Advanced Clinical Geriatric Dentistry 2 (0.5-5 Credits)

This course builds clinical experience in providing advanced geriatric dental care to older, medically-complex, frail adults under the guidance of an expert clinician.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DGER 8003 - Advanced Clinical Geriatric Dentistry 3 (0.5-5 Credits)

This course builds clinical experience in providing advanced geriatric dental care to older, medically-complex, frail adults under the guidance of an expert clinician.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DGER 8004 - Advanced Clinical Geriatric Dentistry 4 (0.5-5 Credits)

This course continues to build clinical experience in providing advanced geriatric dental care to older, medically-complex, frail adults under the guidance of an expert clinician.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DGER 8011 - Critical Topics & Case Study in Gerontology and Geriatric Dentistry 1 (0.5-5 Credits)

This course reviews contemporary issues in gerontology and geriatric dental care with a focus on foundational concepts, best practices in managing complex cases, and supporting oral health needs of older adults.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DGER 8012 - Critical Topics & Case Study in Gerontology and Geriatric Dentistry 2 (0.5-5 Credits)

This course continues to explore important issues in gerontology, geriatric dentistry and best practices in managing complex cases and supporting oral health needs of older adults.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DGER 8013 - Critical Topics & Case Study in Gerontology and Geriatric Dentistry 3 (0.5-5 Credits)

This course continues to explore important issues in gerontology, geriatric dentistry and best practices in managing complex cases and supporting oral health needs of older adults.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DGER 8021 - Interprofessional Collaboration and Care Coordination in Geriatrics 1 (0.5-5 Credits)

This course covers issues affecting healthcare for older adults including geriatric medicine, medical-dental integration, and care coordination to improve health outcomes and quality of life.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DGER 8022 - Interprofessional Collaboration and Care Coordination in Geriatrics 2 (0.5-5 Credits)

This course continues to explore issues affecting healthcare for older adults including geriatric medicine, medical-dental integration, and care coordination to improve health outcomes and quality of life.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DGER 8031 - Geriatrics & Community Dentistry 1 (0.5-5 Credits)

This course covers issues affecting oral health in older adults from a dental public health perspective, including experiential learning in the provision of dental care in community settings.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DGER 8032 - Geriatrics & Community Dentistry 2 (0.5-5 Credits)

This course strengthens public health skills and clinical experience with the application of providing dental care to older adults in community settings including nursing homes and residential care facilities.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DGER 8911 - Fundamentals of Teaching and Learning (0.5-5 Credits)

This practicum exposes learners to the basic tenets of teaching, learning and assessment to build skills to effectively educate students, patients, and peers.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DGER 8912 - Clinical Teaching and Learning (0.5-5 Credits)

This course exposes students to the practice and methods of clinical-focused teaching to improve knowledge and skills of learners.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DGER 8913 - Geriatric Dental Medicine Capstone (0.5-5 Credits)

This course is designed to allow students to apply knowledge and skills gained during their Geriatric Dental Medicine Fellowship through the preparation, implementation, and presentation of a relevant project. Capstone projects may reflect different structures and formats, but must constitute a written deliverable.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

Global Environmental Sustainability-CSU (GESC)

GESC 5200 - Issues in Global Environmental Sustainability (3 Credits)

This course introduces the concept of sustainability, its various definitions, and its current societal influences. Students explore how sustainability affects different disciplines and understand the connections of sustainability within their chosen field. Students achieve a holistic understanding of environmental, social, and economic sustainability through individual research work and interdisciplinary collaboration.

Grading Basis: Letter Grade

Typically Offered: Spring.

Grant Admin-UNC (GERO)

GERO 5550 - Grant Development and Administration (3 Credits)

Overview of proposal planning and grant development process. Application of skills in identifying funding options, program planning, proposal writing, budgeting and establishing controls for grant administration.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

GERO 5600 - Community Resources for the Elderly (3 Credits)

Community-based learning required. Review needs of older persons in the community and evaluate the continuum of long-term care resources available, service gaps, program models, and funding mechanisms.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

GERO 6250 - Psychosocial Aspects of Aging (3 Credits)

Later life issues are explored using an ecological approach that highlights the benefits and consequences of aging for the individual, family, and society.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

GERO 6350 - Social Policies of Aging (3 Credits)

This course covers social policy and policy making at federal, state, and local levels. The history and development of key social policies that affect older Americans are reviewed, as are developments in regard to policies benefiting the elderly population.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

GERO 6400 - Health Aspects of Aging (3 Credits)

This course examines contemporary physical and mental health concerns of older adults. Course activities examine health and aging, and develop skills in presenting information to older adults, caretakers, academic peers and professionals who work with older adults.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

Growth and Development (DSGD)

DSGD 5105 - Research Methodology & Biostatistics 1 (2 Credits)

This graduate course in dentistry is an in-depth study of scientific research methods, study design and organization, data gathering, and the biostatistical tools required to analyze the results of a study and carryout a scientific research project.

Grading Basis: Letter Grade

Typically Offered: Fall.

DSGD 5205 - Research Methodology & Biostatistics 2 (2.5 Credits)

This graduate course in dentistry is an advanced in-depth study of scientific research methods, study design and organization, data gathering, and the biostatistical tools required to analyze the results of a study. In addition this course requires the student to prepare a research proposal.

Grading Basis: Letter Grade

Typically Offered: Spring.

DSGD 6114 - Advanced Oral Biology (2.3 Credits)

This graduate course in dentistry is an advanced study of clinical oral pathology, bone biology, and microbiological aspects of the oral disease processes and conditions.

Grading Basis: Letter Grade

Typically Offered: Fall.

DSGD 6115 - Biomechanics, Bioengineering and Biomaterials (1.1 Credits)

This graduate course in dentistry studies the biological aspects of the biocompatibility of synthetic and biologically altered materials with tissues and cells of the human body. This will include the study of treatment tools and procedures and their effect on the Dentoalveolar structures.

Grading Basis: Letter Grade

Typically Offered: Fall.

Health and Exercise Sci-CSU (HESC)

HESC 6000 - Data Analysis and Research Design (3 Credits)

Methods of research applied to health and exercise science including quantitative techniques of analysis and research design. Instructor permission if not in Health and Exercise Science focus area. Prerequisite of one course in statistics.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

HESC 6001 - Research Design (3 Credits)

This course will discuss research and academic integrity, the responsible conduct of science, research and experimental design, an overview of basic and scientific writing skills, how to read/interpret scientific writing, and inferential statistics.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

HESC 6450 - Epidemiology of Health and Physical Activity (3 Credits)

Foundation in chronic disease epidemiology that will enable students to evaluate the current epidemiologic literature. Prereq: HES 600.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

HESC 6950 - Independent Study: Health (1-18 Credits)

Independent study in health. Instructor permission if not in Health and Exercise Science focus area.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Health Systems, Management, and Policy (HSMP)

HSMP 6601 - Introduction to HSMP (3 Credits)

Provides an introduction to health systems, management and policy.

Topics include the financing and organization of the U.S. healthcare system; introduction to health policy, including stakeholder analysis; and basic managerial skills, including human resources and budgeting.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring, Summer.

HSMP 6602 - Health in Context: Social and Policy Influences (3 Credits)

This course focuses on the advancement of health for everyone and will examine persistent and preventable patterns in health outcomes that affect a wide range of populations. The course critically explores how institutional, interpersonal, and structural mechanisms shape health experiences through differences in access, opportunity, exposure, and health care. It examines the historical systems that have shaped how health and well-being are studied, governed, and distributed across population, while exploring actionable solutions to create the conditions necessary for optimal health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 6604 - Health Care Economics (3 Credits)

Uses economic theory to analyze and understand the U.S. health care system. Topics include: demand and supply of health and health care, health insurance, hospitals, pharmaceuticals, and physicians. Analyzes institutional and legal incentives that affect physician, patient, and insurer decision-making.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 6605 - Health Policy (3 Credits)

Course focuses on important U.S. health policy issues and analysis, implementation, and communication skills for the practice of health policy. Evaluation is based on in-class labs, group projects, and analysis paper of a health policy case example.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

HSMP 6606 - Public Health Administration (2 Credits)

Course provides an introduction to public health management and administration. Components aim to stimulate interactions around important problems and issues including managerial decision-making and increasing practical knowledge, tools, and strategies required by organizational decision-makers. Business plans are produced.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 6608 - Ethical and Legal Issues in Public Health (2 Credits)

Course explores the legal and ethical dimension of public health. It focuses on topics that generate legal and ethical controversies, including governmental duties to protect citizens, nature and extent of the government's ability to regulate conduct, and responses to epidemics.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 6609 - Cost Benefit and Effectiveness in Health (2 Credits)

Introduces students to the basics of economic evaluations of health care interventions or technology. Economic evaluations provide a method to assimilate different cost and health outcomes associated with medical treatments into a common metric.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

HSMP 6610 - Health Care Financial Management (3 Credits)

Students will acquire the tools to incorporate financial, strategic, and mission-based objectives into capital investment decisions. The material also enables students to assess financing options and understand asset valuation techniques, create financial statements and perform pro-forma financial analyses.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 6613 - Addressing Health Equity in Colorado's Safety Net (1 Credit)

Real world health equity challenges as described by today's leaders featuring guest lecturers and case studies from organizations actually doing the work in communities across Colorado. The challenges of providing high quality medical, oral, behavioral and social services to some of Colorado's most diverse populations will be discussed.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 6614 - MCH Program Management & Policy Analysis (3 Credits)
Students will learn and apply program management concepts and policy analysis methods to choose among potential policy and programmatic solutions to improve the health outcomes of pregnant women, infants, children, and children with special health care needs.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall.

HSMP 6615 - Current Global Health Policy Issues (2 Credits)
Students will identify major actors and their roles in global health policy; discuss major policy issues focusing on poverty reduction using case study examples; and write a health policy analysis paper for the assessment in this course.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall.

HSMP 6616 - Intro. to Health Policy Analysis and Communication (1 Credit)

Introduces a framework for systemically and critically evaluating the health policy literature. Reviews effective oral and written communication skills for presenting policy analyses. Evaluation is based on a written analysis of a policy paper of the student's choosing.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall.

HSMP 6617 - Interpreting Health Policy and Management Research (2 Credits)

This course explores the methods used in health policy and management research. Students learn to read and interpret research, with an emphasis on understanding the strengths and weaknesses of different analytical approaches to become an effective consumer of the literature.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

HSMP 6618 - Comparative Health Systems (2 Credits)
This course provides framework for students to analyze the different ways that health care is organized and delivered in settings around the world, including low-, middle- and high-income countries. Exploration of how a country's history, geography, government and economy influence the way that health care is provided.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

HSMP 6623 - Systems Thinking and Analysis (2 Credits)
Exploration of how a systems thinking approach can help frame problems for future research, identify leverage points for interventions, mitigate unintended consequences of these interventions, and inform policy solutions and research to address complex public health problems.

Grading Basis: Letter Grade

Typically Offered: Spring.

HSMP 6630 - Grant Writing for Public Health Professionals (2 Credits)
This course focuses on basic skills required to develop, fund and evaluate data-driven, evidence-based public health programs. The course involves the construction of a 3-step logic model: Need, intervention and outcomes. In addition, organization/individual capacity, partnerships and budget is discussed. Prerequisite: BIOS 6601, EPID 6630, and the core course within the student's MPH concentration.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

HSMP 6633 - Management of Non-Profit Organizations in Public Health (2 Credits)

Course introduces nonprofit theory, focuses on nonprofit leadership and management, and explores nonprofit innovation and change within the context of public health. A highly practical and applied approach for students working in the nonprofit sector or with nonprofit partners.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

HSMP 6634 - Management, Budgeting and Public Health Administration (3 Credits)

This course is designed to prepare public health professionals for management and administration of public health programs and community initiatives. Content addresses program planning, development, budgeting, management and evaluation.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall.

HSMP 6640 - Leadership for Public Health Practice Part 2 (3 Credits)
The focus of this course will be: 1) understanding public health structure, laws, regulations and policies; 2) creating a collaborative environment to deliver essential public health services; 3) create and disseminate work plans and results to communities and stakeholders. Restrictions: Enrollment in LPH concentration required. Pre-requisite: CBHS 6640. Department consent required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Spring.

HSMP 6650 - MPH Research Paper (1-2 Credits)
Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data. Department consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.
Typically Offered: Fall, Spring, Summer.

HSMP 6651 - HSR Masters Research Paper (1-6 Credits)
Masters Research Paper in HSR is completed under this course.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.
Additional Information: Report as Full Time.
Typically Offered: Fall, Spring, Summer.

HSMP 6653 - Applied Dissemination and Implementation Science for Public Health Practitioners (3 Credits)

This course focuses on applied methods for disseminating, implementing and evaluating evidence-based health interventions in various practice settings. Students will learn skills for identifying a need or practice gap, selecting and adapting an evidence-based intervention, and developing an implementation plan that is guided by D&I models, frameworks and theories. Students will also have the opportunity to engage with community stakeholders.

Grading Basis: Letter Grade

Typically Offered: Spring.

HSMP 6670 - Special Topics: Health Systems, Management and Policy (1-3 Credits)

Special interest areas of current health systems, management, and policy research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check with CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 999.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

HSMP 6840 - Independent Study: Health Systems Management and Policy (1-3 Credits)

Faculty directed independent study in topics related to health systems, management and policy. Department consent required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

HSMP 6950 - MS Thesis (1-6 Credits)

HSR Master thesis work is completed under this course.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

HSMP 6990 - MPH Capstone Preparation - HSMP (1 Credit)

MPH Capstone Preparation will focus on developing the basis for a strong capstone project, culminating in the finalization of the capstone proposal that meets the expectations of the concentration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

This course is restricted to students with a MPhD-MPH plan of study only.

Typically Offered: Fall, Spring, Summer.

HSMP 7010 - Foundations in Health Services Research (1 Credit)

Introduces students to the academic health services research literature. This seminar course requires students to participate in small seminars led by faculty on different health services research topics plus attending larger HSMP departmental seminars. Evaluation is based on weekly papers.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring.

HSMP 7601 - Research Design and Proposal Preparation (3 Credits)

Research as a systematic method for examining questions derived from related theory and/or health service practice. Major focus is on the logic of causal inference, including the formulation of testable hypotheses relating to health services organization and management, the design of methods and measures to facilitate study. Requisite: Upper division course in statistics

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 7603 - Advanced Public Health Strategic Planning and Management: Theory and Practice (3 Credits)

This doctoral level course examines the theory and practice of strategic planning and management for governments, public agencies, nonprofit organizations, and community collaborations engaged in the mission of improving the public's health. Offered in even years.

Grading Basis: Letter Grade

Typically Offered: Spring.

HSMP 7605 - Managing a Learning Healthcare System: Theory to Prac (3 Credits)

How to implement and manage a Learning Healthcare System including history, current state and future directions. Systems theories, LHS researchers core competencies, challenges and solutions for creating work environments supportive of learning and evidence-based practices and policies will be explored.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

HSMP 7607 - Methods in Health Services Research I (3 Credits)

The first of a 2-course sequence in empirical methods in health services research. The statistical theory underlying basic empirical methods and the thoughtful implementation/practice of these methods are emphasized. Topics covered include: OLS, Gauss-Markov assumptions, logit/probit. Stata will be used. Prereq: BIOS 6611

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Spring.

HSMP 7609 - Methods in Health Services Research II (3 Credits)

Students will learn how to specify and estimate econometric models to test theory-driven hypotheses. The course builds on HSMP 7607 and covers advanced methods related to panel/longitudinal, multinomial, survival, and count data models. Stata software will be used.

Prerequisites: HSMP 7607, enrolled in PhD or DrPH or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall.

HSMP 8990 - Doctoral Thesis - Health Systems Management and Policy (1-10 Credits)

Doctoral thesis work in Health Systems Management and Policy.

Prerequisite: Permission of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Horticulture-CSU (HORT)

HORT 5210 - Horticulture and Human Health and Well-Being (3 Credits)
Critically examine the impact of principles and practices of horticulture on human health and well-being.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

Human Development & Family Studies-CSU (HDFS)

HDFS 5920 - Grant Writing: Human Services (3 Credits)
Writing grant proposals that support client services or for research.
Prereq: STAT 201.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

HDFS 6070 - Prevention Science Across the Life-span (3 Credits)
Overview of prevention theory, methods, and standards of evidence. Introduction to efficacious and effective interventions across the lifespan. Prerequisite: One of the following: CBHS 6610; CHBH 5090; HESC 5560; PBHC 5500

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

HDFS 6080 - Program Design and Implementation (3 Credits)
This course provides students with a theoretical and practical foundation for selecting and implementing effective prevention strategies across multiple settings such as schools and community-based organizations. Credit will not be given for both HDFS 6080 and CBHS 6613 or CHBH 6100. HDFS 6080 cannot substitute for CBHS 6613 or CHBH 6100.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

HDFS 6090 - Prevention Program Evaluation (3 Credits)
This course provides students with a theoretical and practical foundation for evaluating the impact of prevention strategies across multiple settings such as schools and community-based organizations. Credit will not be given for both HDFS 6090 and CBHS 6612 or CHBH 6100. HDFS 6090 cannot substitute for CBHS 6612 or CHBH 6100.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

HDFS 6100 - Risk and Resilience (3 Credits)
Risk and resilience processes in human development. Prereq: 6 credits in behavioral sciences.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

HDFS 6120 - Adolescent Development (3 Credits)

Course focuses on current theoretical and empirical issues in the field of adolescent development. Students will critically evaluate current research in the field of adolescent development, debate central issues, and gain in-depth knowledge of one topic of their choice. Prerequisite: One course in adolescence; three credits of upper-division behavioral science; or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

HDFS 6500 - Research Methods II (3 Credits)

This course covers a range of quantitative methods with an emphasis on parametric inferential statistics. It will focus on parametric versions of both univariate and multivariate statistics along with important assumptions of each test statistic, when each should and should not be used, and how to compute each test statistic using SPSS.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

HDFS 6950 - Independent Study - Human Development (1-18 Credits)

Independent study in human development and family studies.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Human Medical Genetics (HMGP)

HMGP 7600 - Survey of Human Genetics (3-4 Credits)

Survey of human genetics, including Mendelian and other types of inheritance, chromosomes and cytogenetics, molecular and biochemical basis of genetic disease, quantitative genetics and gene mapping, developmental and cancer genetics, clinical genetics, and genetic screening and prenatal diagnosis.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

HMGP 7610 - Topics in Human Genetics (1 Credit)

Two-semester course based on weekly HMGP seminar series. Students meet with speakers and discuss seminar or related topics and arranged readings. Grade based on class participation and required paper and presentation. Required for 1st, 2nd and 3rd year HMGP students.

Prerequisite: Graduate standing.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

HMGP 7630 - Independent Study in Human Medical Genetics (1-2 Credits)

Independent study is intended to permit students to carry out directed reading and discussion with a specific faculty member other than their thesis advisor. Consent of the faculty member offering the independent study and the program director are required.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

HMGP 7650 - Research in Human Medical Genetics (1-10 Credits)
Research work in human medical genetics. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

HMGP 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in human medical genetics. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Human Rehab Service-UNC (HRSS)

HRSS 6100 - Interpretation and Evaluation of Behavioral Research (3 Credits)

Understanding of applications of appropriate statistical techniques and necessary skills for interpretation and evaluation of research in human services. Emphasizes basic concepts, design and utilization of behavioral research.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Univ of Northern Colorado.

Typically Offered: Spring.

Immunology & Microbiology (MIMS)

MIMS 6062 - Introduction to Science Communication (1 Credit)

This introductory course in science communication is designed to introduce the skills to effectively convey complex scientific concepts to diverse audiences, including the public, policymakers, and fellow scientists from different fields. Through a combination of brief lectures, in-class activities and practical assignments, students will learn key principles of clear and accurate scientific communication, the ethics of public science discourse, and strategies for engaging written, media and digital platforms. Emphasis is placed on adapting messages for different target audiences, crafting compelling narratives, and developing visual aids. By the end of the course, students will be prepared to communicate their research effectively across a range of platforms.

Grading Basis: Letter Grade

Typically Offered: Spring.

MIMS 6063 - Scientific Literature Analysis (1 Credit)

This course for Immunology and Microbiology Masters students will instruct in how to think critically about scientific literature with particular emphasis on how data is presented used to construct scientific arguments. Students will have practice both analyzing existing literature and scientific presentations, as well as presenting their own work.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

MIMS 6070 - Mini-Research Rotations (1-3 Credits)

The course MIMS 6070, Mini-Research Rotations, will allow graduate students to learn in three different laboratories about research in immunology and microbiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MIMS 6071 - Introduction to R Programming for Immunologists and Microbiologists (1 Credit)

Introduction to the R programming language geared towards Immunology and Microbiology students with no prior programming experience. This course will provide instruction in R language syntax, data structures and visualization techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MIMS 6950 - Laboratory Thesis Research (1-6 Credits)

Laboratory Thesis Research with allow Immunology and Microbiology masters students students to engage in mentored laboratory research training ultimately producing a masters thesis based on their work.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

Typically Offered: Fall, Spring, Summer.

Immunology (IMMU)

IMMU 6110 - Introduction to Bioinformatics (3 Credits)

An intensive course aimed to introduce basic theory and concepts of commonly used bioinformatics workflows encountered in immunology and microbiology NGS data sets. This course is also designed as a workshop; all workflows will be directly applied to pre-existing datasets. Pre-requisite: At least one semester of any R programming.

Grading Basis: Letter Grade

Restricted to IMMU, MICB, MICR, BSBT students

Typically Offered: Spring.

IMMU 6210 - Intensive Advanced Immunology (3 Credits)

During this intensive-style class, students will attend daily lectures and laboratories in Week 1, then complete a 2-week project with final presentations in Week 3. In Week 1, Students will be fully immersed from 8 am to 6 pm with reading/prep in the evenings. Pre-requisite: AGRAD

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7000 - Research in Progress (1 Credit)

Research in Progress weekly seminar talks for Immunology and Microbiology Graduate Students.

Grading Basis: Pass/Fail

Repeatable. Max Credits: 10.

Typically Offered: Fall, Spring.

IMMU 7530 - Introduction to Immunology (2 Credits)

This course is an introductory immunology course designed to provide students with an introduction to the field of immunology. This class is intended to introduce students who already have some background in general biology and cell biology to the study of the immune system.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

IMMU 7602 - Special Topics in Cancer Immunology (1 Credit)

This interactive course aims to introduce important concepts, models and approaches in cancer immunology. The focuses are mechanisms relevant to the immune response in the context of cancer development and immunotherapy. Students are assessed via presentations, participation, and a paper.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IMMU 7603 - Special Topics-Immunologic Basis of Human Disease (1 Credit)

Perform translational studies, as they either test hypotheses established in mouse models or lead to new testable hypotheses that will advance understanding of pathogenesis of human disease. Greater understanding of disease pathogenesis will allow for development of new treatment options. Prereq: IMMU 7662.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IMMU 7604 - Special Topics in Signal Transduction in the Immune System (1 Credit)

In-depth course, designed primarily for immunology graduate students in their second year, who have completed IMMU 7602. The course covers selected topics (8 in all) encompassing a wide range of topics in signal transduction through receptors important in the immune system. Prereq: IMMU 7662.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

IMMU 7605 - Workshop in Scientific Writing (1 Credit)

This workshop will consist of one session weekly for students to be critiqued on writing assignments designed to provide basic training in writing grant proposals and manuscripts.

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7607 - Science as a Profession (1 Credit)

This course discusses ethical issues, conflicts of interest, and regulations for working with humans or animals. It also includes instruction on writing papers and grants, giving effective presentations and advice on finding jobs in academia and industry.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

IMMU 7608 - Immunology of Infection (1 Credit)

Students will discuss and present selections from the current literature on topics related to the interaction of the immune system with microbial causes of infectious diseases.

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7609 - Immunology of Autoimmune Diseases (1 Credit)

Following a brief introduction on autoimmune diseases by the instructor, the students will discuss and present assigned papers from the current literature on topics related to immune mechanisms and cell types leading to various autoimmune diseases.

Grading Basis: Letter Grade

Typically Offered: Spring.

IMMU 7611 - Omics Data Analysis (2 Credits)

The objective of this course will equip graduate students from immunology and microbiology program with the skills sets for understanding the basic terminology of data sciences and applying data sciences and computational approaches in their immunological and microbiological studies, utilizing R and FIJI Macro programming skills. Prerequisites: An introductory background in statistics is recommended. One seminar in R programming or equivalent experience is required. The pass on the course Introduction to Bioinformatics is recommended.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

IMMU 7650 - Research in Immunology (1-5 Credits)

Research work in immunology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IMMU 7662 - Immunology (6 Credits)

This course covers the basic principles of the immune system. Included are discussions on (I) the innate and adaptive immune responses, (II) the molecular and cellular basis of immune specificity and (III) aspects of clinical immunology.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IMMU 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in immunology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Integrated Physiology (IPHY)

IPHY 7650 - Research in Integrated Physiology (1-10 Credits)

Research work in Integrated Physiology. Prerequisite: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IPHY 7651 - Reading & Evaluating the Clinical Literature (2 Credits)

Interactive seminar introduces key concepts in clinical study design, basic statistics, & clinical research assessment. Become familiar with clinical study types; rigorously assess the literature; and appreciate how to incorporate clinical data in bench research. Requires presentations, manuscript review, and discussion. Pre-Req: Successful completion of the first year of PhD courses or two years of MSTP training.

Grading Basis: Letter Grade

Typically Offered: Fall.

IPHY 7652 - Special Topics in Integrated Physiology (1-3 Credits)

This course provides instruction in a specialized area of Integrated Physiology. Course content and the extent of the course varies from year to year. Prerequisite: Enrollment in PhD Program in Graduate School.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IPHY 7800 - Comprehensive Physiology (6 Credits)

The course will provide an understanding of the function, regulation and integration of human organ systems. Content will include introductory to cell physiology and all major organ systems and will be taught by experts in each organ system.

Grading Basis: Letter Grade

Typically Offered: Spring.

IPHY 7801 - Molecular Mechanisms of Reproductive Endocrinology and Metabolism (3 Credits)

Endocrine systems will be covered from the molecule to the systems level. Pituitary secretions actions/ regulation, regulation of water, ion, calcium balance, regulation of metabolism including insulin secretion/action will be discussed, the context of normal physiology, the mechanisms of endocrine dysfunction. Prereq: Core courses IDPT 7811, 7812, 7813, 7814, 7815. Restrictions: CU-AMC Graduate students; others by permission of the Course Director.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IPHY 7802 - Grant Proposal Writing (1 Credit)

This course is a practical workshop in grant-writing culminating in a student-led mock review panel including course participants. Students will examine various proposal types/formats, then write their own proposal in the format of an NIH NRSA fellowship application. Pre-Requisite: Students with adequate physiology background.

Grading Basis: Letter Grade

Typically Offered: Spring.

IPHY 7803 - Signaling in Physiological Systems (3 Credits)

1. Develop a thorough understanding of the general principles of cell signaling in mammalian physiology. a. Develop a basic understanding of signaling via GPCRs, nuclear receptor signaling and non-classical mechanisms. b. Understand signaling mechanisms in skeletal and cardiac muscle physiology. c. Understand signaling mechanisms in the central nervous system, pulmonary, cardiac, gastrointestinal, renal systems, immunology and bone physiology. d. Understand signaling mechanisms in basic reproductive and fetal physiology. 2. Critically integrate cell signaling in normal physiological context to diseases in some of the physiological systems (not too much focus on cancers per se). 3. This course assesses development and acquisition of core foundational knowledge in signaling mechanisms that orchestrate and integrate physiological systems. 4. The course is divided into 9 units covering signaling in: Muscle and Cardiovascular Physiology, Pulmonary Physiology, Renal Physiology, GI Physiology, Endocrine and Metabolic, Immune system and Hematological, Bone, Reproductive, and Neural. Grading Basis: Letter Grade with IP

Typically Offered: Spring.

IPHY 7804 - Proteomics: Concepts and Computational Analysis (1 Credit)

Proteomics is a large-scale analytical approach to examine the functional output of the genome. Many cellular and molecular phenotypes including protein post-translational modifications, protein-protein interactions, and protein localization can only be feasibly discerned at the proteome level. This course provides information on the fundamentals of proteomics for students interested in analyzing large scale protein experiments. The course comprises eight lectures on experimental and analytical considerations, and eight hands-on workshop session. A gentle introduction to R and scientific programming is included, followed up hands-on access, analysis, and visualization of proteomics data using R and popular software tools.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

IPHY 7840 - Advanced Topics in Cell Signaling (1 Credit)

Students select topics of interest in the area of cell signaling and receive one-on-one instruction from expert faculty. Each one-credit topic will be taught for 5 weeks. Course work will include reading and discussing papers as well as practical exercises. Prereq: Consent of Instructor

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IPHY 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in physiology.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Interdepartmental School of Medicine (IDPT)

IDPT 5007 - Food Systems & Health (1 Credit)

Students participating in the Food Systems & Health Elective will explore the complex intersection of food systems and whole-person health through an interdisciplinary lens. The course emphasizes clinical and community health principles and provides students interactive opportunities to connect, discuss, and develop communication and advocacy skills.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5010 - First Course (1 Credit)

This immersive course provides students with basic tools needed to begin medical school with confidence and success. It will encourage curious, life-long learning, foster commitment to serve the profession, our patients & society, and begin the development of physician leaders capable of transforming the health of diverse communities.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 5012 - Introduction to Global Health Research (1 Credit)

This seminar series is open to medical students and CHA/PA students in the Global Health Track. Topics include pre-travel health and safety considerations, ethical issues in global health, human rights and health, as well as research and philosophical tools for culturally appropriate care in a sustainable fashion. The class is required of Global Health Track Students. The University of Colorado requires that all Medical Students planning a global health project for their MSA be in the global health track and participate in this course.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5013 - Clinical Medical Spanish I (FCB) (1 Credit)

Course seeks to increase FCB 1st yr Med student comfort level interacting with Spanish-speaking patients. It is intended to be a precursor to clinical or community settings with Spanish-speaking patients. Hope to introduce students to the work done at CSU satellite campus in Todos Santos.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5014 - Narrative Medicine: Digital Stories and Community Engagement (1-2 Credits)

After introduction to digital storytelling basics from experts, learners will create their own stories to practice the skills of making a narrative video & appreciate & honor the vulnerability inherent in sharing a personal story.
Grading Basis: Pass Fail with IP
Typically Offered: Fall, Spring.

IDPT 5016 - Foundational Principles (9 Credits)

Introductory science content is encapsulated into a solid foundation upon which to construct more complex medical sciences knowledge while advancing students' professional competencies. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Fall.

IDPT 5017 - Hematologic & Lymphatic Systems (5 Credits)

This course explores basic science and clinical concepts related to normal physiology and disease states of the hematologic and lymphatic systems. Emphasis is on knowledge application. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Fall.

IDPT 5018 - Gastrointestinal System (7 Credits)

Clinical and basic science topics related to the normal function and diseases of the gastrointestinal tract and accessory organs will be merged with an overview of nutrient metabolism. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Fall.

IDPT 5019 - Pulmonary & Cardiovascular Systems (10 Credits)

Fundamentals of physiology, pharmacology, immunology, and anatomy will dovetail into the pathophysiology of pulmonary and cardiovascular diseases to facilitate diagnosis and treatment. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Fall.

IDPT 5020 - Traverse (1-2.5 Credits)

Traverse is a longitudinal experience including 5 dedicated weeks, during which students will complete comprehensive assessments of their clinical skills and medical knowledge. Longitudinal activities, such as direct patient care with preceptors, will support students' professional growth and development. Students will also be introduced to and prepare for the longitudinal integrated clerkships.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 6.
Typically Offered: Fall, Spring, Summer.

IDPT 5021 - Renal & Urinary Systems (5 Credits)

This course encompasses normal physiology, histology and anatomy as well as the pathophysiological dysfunction and pharmacology of the renal & urinary systems. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

IDPT 5022 - Nervous System (8 Credits)

A foundational, interdisciplinary approach to nervous system structure and function in health and disease will include neuroanatomy, pathophysiology, and pharmacology, among others. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

IDPT 5023 - Musculoskeletal & Integumentary Systems (7 Credits)

This interdisciplinary course incorporates the anatomy, physiology and histology of skin, muscle, bone, peripheral nerves, cartilage, and ligaments with associated clinical conditions. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

IDPT 5024 - Mind & Behavior (5 Credits)

Students will explore the biological, developmental, environmental, and psychological processes underlying human behavior, cognition, and emotions so they can care for persons with mental illness. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

IDPT 5025 - Endocrine & Metabolic Systems (7 Credits)

Biochemistry, pathology, physiology, immunology, and pharmacology are combined with the clinical approach to diagnosis and treatment of disorders of the endocrine system. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Summer.

IDPT 5026 - Reproductive System & Life Cycle (7 Credits)

The development, physiology, pathology, and pharmacology of the male and female reproductive systems are addressed along with changes in health and wellness across the lifespan. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Pass Fail with IP
Typically Offered: Summer.

IDPT 5027 - IHI Open School Basic Certificate (1 Credit)

Earning the IHI Open School Basic Certificate in Quality and Safety boosts your knowledge and skills — and proves to educators and residencies you are serious about changing health care for the better. To receive the Certificate, you must complete the following 13 Open School courses: QI 101–QI105, PS 101–105, TA 101, PFC 101, and L 101.

Grading Basis: Pass Fail with IP
Typically Offered: Fall, Spring.

IDPT 5028 - One Health I (FCB) (1 Credit)

One Health is a transdisciplinary concept that focuses on issues at the intersection of Human, Environmental, and Animal Health. The One Health Practicum will bring together groups of interdisciplinary undergraduate, graduate, and professional students to evaluate real-world One Health challenges in the City of Fort Collins.

Grading Basis: Pass Fail with IP
Typically Offered: Fall, Spring, Summer.

IDPT 5029 - Clinical Medical Spanish (1 Credit)

Students will learn and practice the language skills they need to communicate effectively with their Spanish speaking patients. The course is delivered in a hybrid format that allows students to complete weekly lessons and quizzes at their own pace and then join the live (synchronous) online sessions to practice the Spanish they are learning in the lessons.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5031 - Mentoring & Scholarly Activity (1 Credit)

Mentorship and scholarly activity are essential to maximizing personal and professional potential. Students will engage in the COMPASS program's professional identify formation curriculum and partner with Guides for mentorship, reflection, and goal setting. This course will also launch students' 4-year, longitudinal mentored scholarly activity project.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

IDPT 5033 - Clinical Medical Spanish II @ Fort Collins Branch (1 Credit)

This weekly 1-hour class seeks to build on the work done in the first medical Spanish elective for 1st year medical students. It is intended to be simulation-based and will serve as a practical precursor to clinical or community settings. Prerequisites: Clinical Medical Spanish IDPT 5029.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5034 - One Health II (FCB) (1 Credit)

One Health is a transdisciplinary concept that focuses on issues at the intersection of Human, Environmental, and Animal Health. This elective will give students the opportunity to teach about One Health concepts to the Northern Colorado community at large. It will also give students the opportunity to shadow at the CSU Veterinary Teaching Hospital to understand the similarities and differences between human and veterinary medicine and opportunities for collaboration.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 5090 - Mentored Scholarship I (1 Credit)

A four year requirement for students to pursue and complete a mentored scholarly project and a capstone presentation. Project can be in one of the following thematic areas: basic and clinical research; epidemiology and public health; humanities and social sciences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring.

IDPT 5091 - MSA Summer Elective (12 Credits)

Students work intensively with mentors on their chosen MSA Project. Students critically review background literature, define a question/hypothesis, develop, and implement methods and student design, collect data, analyze, and interpret data, and submit written progress reports for their MSA project. Pre-requisite: IDPT 5090

Grading Basis: Pass/Fail

Typically Offered: Summer.

IDPT 5094 - Research Track Plains Elective (1 Credit)

The goals of the Research Track are: 1) to foster student development of an identity as a physician capable of being deeply involved with and completing research efforts and for graduates to acquire the knowledge and skills to successfully complete the components of a research project. This elective is only for students who have been accepted into the Research Track in the first trimester.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 5095 - Research Track Phase I (12 Credits)

Students complete training in citation manager software and initiate mentor-guided research. Prerequisite: Required if enrolled in Research Track. Instructor consent required. Course Restrictions: Must be a Research Track Student, this course replaces Mentored Scholarship requirement.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 5096 - Summer Research Phase I (1 Credit)

This course is for students desiring to do research at CU or other institutions during the summer in between first and second year.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 5200 - Introduction to Global Health (1 Credit)

This one-credit course is designed to introduce clinicians in training to critical topics in global health. The course consists of lectures and group discussions lead by experts in a variety of global health-related diseases, public health priorities, and health policy issues.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

IDPT 5600 - Topics in Biomedical Science and Research (4 Credits)

Research internship for undergraduate fellows in Graduate Experiences for Multicultural Students (GEMS) Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

IDPT 6006 - Obesity and Cardiovascular Disease (1 Credit)

The course will cover how obesity relates to cardiovascular disease including basic and clinical mechanisms on the pathophysiology of vascular biology, insulin resistance, risk factors, and outcomes, and how therapeutic interventions modify cardiovascular disease risk.

Requirements: Course will span two semesters, Fall and then Spring

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

IDPT 6090 - Mentored Scholarship II (1 Credit)

A four year requirement for students to pursue and complete a mentored scholarly project and a capstone presentation. Project can be in one of the following thematic areas: basic research, clinical research, epidemiology and public health, humanities and social sciences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

IDPT 6095 - Research Track Phase II (1 Credit)

1. Demonstrate progress towards the completion of your research project and publicly communicate understanding of the project to others a.

Present WIP to peers and faculty in an oral presentation b. Effectively

respond to comments and questions from peers about your research

efforts c. Identify scientific questions when others present Prerequisite:

Required if enrolled in Research Track. Instructor consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 6652 - Key Cncpt Ped Dsablty 3 (2 Credits)

Grading Basis: Letter Grade

IDPT 6655 - Asst Tech: Assess Incl I (2 Credits)

Grading Basis: Letter Grade

IDPT 7005 - Foothills Basecamp - Transition to Clerkship (4 Credits)

Students develop knowledge and skills necessary to transition to clerkships with confidence and success. Through multidimensional skills and case-based sessions, students will advance clinical reasoning, psychomotor, communication and efficiency skills as well as dedicate time to reflection and professional identity exploration.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 7012 - Longitudinal Integrated Clerkship (2-6 Credits)

This is a multidisciplinary course required of students participating in the LIC. Students will be required to manage cohorts of longitudinal patients, participate in projects and small group discussions, engage in reflective practice and complete logging of clinical requirements. Department Consent Required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7013 - Longitudinal Internal Medicine (LIC) (2-6 Credits)

This course introduces adult medicine with emphasis on acute illness, chronic disease management, and preventive care. Students will combine inpatient and ambulatory experiences. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7022 - Longitudinal Pediatrics (LIC) (2-6 Credits)

This course introduces pediatric medicine, emphasizing illness and wellness of children and families, growth, development, physical and mental well-being. Students combine inpatient, nursery, and ambulatory experiences. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7032 - Longitudinal Obstetrics/Gynecology (LIC) (2-6 Credits)

This course focuses on care of women in OB/GYN clinics, labor and delivery, OB and GYN wards, and the operating room. Additionally, students will learn a newborn exam and fundamentals of newborn care. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7033 - Longitudinal Emergency Med (LIC) (2-3 Credits)

This course will provide an introduction to the initial evaluation and management of emergently presenting problems in adults and children. Emphasis will be on disease recognition, differential diagnosis, and stabilization of shock and trauma, as well as pre-hospital care and concepts of triage. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

IDPT 7042 - Longitudinal Psychiatry (LIC) (2-6 Credits)

This course will focus on psychiatric care of adults and children, and clinical experiences will include ambulatory settings, inpatient units, psychiatric emergency room, consults, and psychiatric specialties. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7049 - Clerkship Remediation (4-8 Credits)

This remediation course is designed to allow the student to remediate a specialty clerkship or LIC specific requirements.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 7052 - Longitudinal Surgery (LIC) (2-6 Credits)

This course focuses on surgical diseases. Students will participate in operative care and peri-operative care. Assessment and management of common inpatient and ambulatory procedures are emphasized from initial patient referral to discharge. Students will combine ambulatory, inpatient and operating room experiences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7062 - Longitudinal Family Medicine (LIC) (2-6 Credits)

This course focuses on broad spectrum family medicine including acute and chronic ambulatory care, hospital care, and obstetric care of adults and children. Students will participate in the provision of comprehensive patient-centered primary care and will focus on the longitudinal acute and chronic disease management, prevention and health. Department Consent Required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7090 - Mentored Scholarship III (1 Credit)

A four year requirement for students to complete a mentored scholarly project and capstone presentation. Projects can be in one of the following thematic areas: basic research, clinical research, global health, epidemiology and public health, humanities and social sciences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring.

IDPT 7095 - Research Track Phase III (1 Credit)

Students clarify and plan Phase IV process for completing Research Track requirements. Prerequisite: Required if enrolled in Research Track. Instructor consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 7101 - Clinical Practice Exam (CPE) Formative (1 Credit)

To advance to Phase IV, students must complete all required Phase III clerkships with passing grades, must complete the required Longitudinal Curriculum elements, the formative CAPE assessment, and successfully pass or remediate the Clinical Practice Exam (CPE).

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 7102 - Clinical Practice Exam (CPE) Summative (1 Credit)

To advance to Phase IV, students must complete all required Phase III clerkships with passing grades, must complete the required Longitudinal Curriculum elements, the formative CAPE assessment, and successfully pass or remediate the Clinical Practice Exam (CPE).

Grading Basis: Pass/Fail

Typically Offered: Fall, Spring, Summer.

IDPT 7160 - Philosophical Foundations of Research Ethics (2 Credits)

This course will examine the philosophical basis for current research ethics practices, address current ethical issues and controversies in biomedical research, and provide students with knowledge and analytical skills to address the ethical dimensions of biomedical research.

Crosslisted: CLSC 7160

Grading Basis: Letter Grade

Typically Offered: Spring.

IDPT 7200 - Scientific Writing for Doctoral Students (2 Credits)

Scientific writing course for students engaged in research. Focuses on critical thinking, analytical writing, and oral presentation. Taught as a writing workshop, the course emphasizes effective communication with both professional and non-technical audiences. Restrictions: Must have passed preliminary examination; permission of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

IDPT 7301 - Introduction to Life Science Technology Commercialization (1-3 Credits)

Course designed to familiarize graduate level engineering, business, law, science students with fundamentals of life science technology commercialization including drugs, devices, diagnostics, healthcare IT and platform applications. Three consecutive, 5-week classes, each 1 credit. Open to all graduate level students.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring.

IDPT 7610 - Phcl & Anat of Cntral Nerv Sys (1 Credit)

Grading Basis: Letter Grade

IDPT 7628 - Gerontological Pharm (2 Credits)

Grading Basis: Letter Grade

IDPT 7630 - Detertn Prima Struct Biomolecl (4 Credits)

Grading Basis: Letter Grade

IDPT 7640 - Molecular/Cell/Dev/Endo (3 Credits)

Grading Basis: Letter Grade

IDPT 7642 - Introduction to Laboratory Animal Research (1 Credit)

Provides basic knowledge on the use of laboratory animals, animal welfare and animal models. Includes general concepts on animal biology and husbandry for most common laboratory species and incorporates essential principles of anesthesia, analgesia, surgery and peri operative care.

Grading Basis: Letter Grade

Typically Offered: Summer.

IDPT 7656 - MSTP MSIII Clinical Interval (1-3 Credits)

Course restricted to MSTP MSIII students for clinical gap intervals. Prerequisite: MSTP director approval required. Instructor consent required

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

IDPT 7727 - Directed Study Clinical Sci (4-24 Credits)

This course provides an opportunity for medical students to further develop and refine their knowledge of the clinical sciences. Course will include scheduled study time, regularly scheduled practice exams, tutoring in clinic content and test taking strategies. Prereq: Course Director approval required to add.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

IDPT 7777 - Off Time (0 Credits)

Grading Basis: Non-Graded Component

Repeatable. Max Credits: 24.

IDPT 7850 - Independent Study in Bioethics, Medical Humanities or Health Law (1-6 Credits)

Course is designed to meet the needs of students interested in conducting advanced studies of issues and topics in bioethics, medical humanities, or health law. Students will work under the direction of the course director on a specific research topic. Course Restrictions: Permission of the instructor. Repeatable for credit within the degree program, but not within the same term. Max credits - 6.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

IDPT 8000 - Clinical Preceptorship Elective (2-4 Credits)

2.0 cr. Summer, 4.0 Fall and Spring. This course continues the established student-preceptor relationship from the FDC course. Students attend their preceptor office 2-3 times per month. Students will work with a panel of patients or families serving as their physician under the supervision of their preceptor. Prereq: IDPT 7000.

Grading Basis: Medical School HP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

IDPT 8003 - Geriatrics (4-8 Credits)

2-4 wks. Max: 2. Geriatrics elective will provide clinic exposure to caring for older adults in the outpatient primary care and sub-acute rehab settings. Learning objectives focus on the special needs of frail or chronically ill older adults and resources beyond direct physician care utilized for this population.

Grading Basis: Pass Fail with IP

IDPT 8007 - Medicine/Pediatrics (4-8 Credits)

2 or 4 wks. The focus of this elective is to help students discern whether to pursue combined residency training in Internal Medicine and Pediatrics. This course will expose students to possible career paths available for Med-Peds providers within primary and specialty care settings.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

IDPT 8011 - Clinical Nutrition (4-8 Credits)

2 wks. Max:1. Develop your nutrition assessment skills with this elective, tailored to your needs with adult and/or pediatric inpatients and/or outpatients with a variety of conditions and diseases. Active learning with exceptional mentors is emphasized.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8015 - Global Health Intl Project (8 Credits)

This course is the continuation of IDPT 6667 & 6668. Students will undertake a global health project at an international site under the supervision of their designated mentor and local supervisors.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

IDPT 8016 - Physician as Educator (2 Credits)

This elective is intended to develop your skills as an effective teacher in clinical and classroom settings. This will include participation in evening teaching workshops and co-precepting.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

IDPT 8018 - Global Health & Disaster (4 Credits)

This international health course is a two week training offered once a year as part of the University of Colorado School of Medicine Global Health Track. This course prepares its participants for international experiences and future global health work.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8020 - Physician as Advisor (2 Credits)

1 wk: Physician as Advisor teaches fourth year students to advise peer students in an Advisory College Program. It will prepare students for careers in academic medicine by developing skills in advising, leadership, and administration as well as self-assessment. Longitudinal course that can conflict with other courses. This is a 2 semester course and each semester counts for 2.0 credit hours. Prerequisites: Fourth year standing and selection as a "Student Advisor" in the Advisory College Program.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring.

IDPT 8021 - Costa Rica Spanish Immersion (4-8 Credits)

This capstone Spanish immersion course in Costa Rica includes home stays, intensive language instruction and public health and community outreach activities in under-served communities. Student should be passionate about providing care to disadvantaged patients in the USA or abroad and committed to improving their Spanish language skill.

Requisite: Contact course coordinator for information. Department Consent required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

IDPT 8023 - Refugee Health II (4-8 Credits)

Refugee health II will provide students with exposure to the social factors which impact upon the health of refugees in the Denver metro region. Students will work with agencies providing services to refugees and participate in home visits and outreach activities within community settings.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

IDPT 8024 - Leadership Reading Elective (8 Credits)

This online reading elective is divided into 4 one-week modules and is designed to strengthen a student's understanding of leadership and how it impacts patient care, professionalism, and medical organizations.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8027 - Race in Medicine (4 Credits)

This course explores the role of racism and homogenous beliefs/values in medicine and how cultural incompetence perpetuates health disparities. Students learn about race as a social construct, theories related to class, and the impact of unconscious bias on health outcomes. The class urges students to confront discomfort in healthy ways.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8028 - The Business of Medicine (4-8 Credits)

This interactive course enhances students' Healthcare System Literacy, i.e. understanding how healthcare is structured, financed, and regulated. With micro- to macro-level modules, the course helps prepare students for personal practice challenges as well as for improving healthcare more broadly.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Spring.

IDPT 8030 - Laboratory Medicine (8 Credits)

Lecture-based elective provides a comprehensive overview of Clinical Pathology and laboratory testing. It reviews biochemical, physiologic, and pathologic phenomena on which laboratory tests are based and emphasizes approaches to the ordering, interpretation, and pitfalls of laboratory tests.

Grading Basis: Medical School HP

Typically Offered: Fall.

IDPT 8032 - Longitudinal Ultrasound Elective (4-8 Credits)

The longitudinal ultrasound elective is an elective designed to give students hands-on practice with ultrasound with a preceptor over the course of their fourth year. The students will work with the preceptor to complete 150 clinical ultrasounds and complete course learning objectives. Students will be assigned a preceptor based on their clinical area of interest.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8033 - MSTP Trailhead Course (4-8 Credits)

This course is specifically designed to prepare MD / PhD students, who are returning to clinical clerkships, for a successful transition into direct clinical care learning experiences. Students can choose to spend one month on an academic inpatient Internal Medicine, or General Surgery, service. (Students let the course director know whether they want to do Medicine or Surgery; these cannot be combined into one month.) Students will develop the knowledge, skills, and attitudes to work with an interdisciplinary team to workup, diagnose, and treat acutely ill adults in the inpatient setting.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 8035 - International Experiences (4-16 Credits)

This course allows fourth year students to complete an international experience at an approved and vetted international site. The experience may include clinical work, language immersion, or a combination of both.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

IDPT 8037 - Advanced Neurosciences (4-8 Credits)

This course will integrate neuroscience and clinical science as applied to diseases and disorders of the nervous system. The curriculum will integrate neuroanatomy, neurophysiology, and neuropharmacology with clinical neurology, neurosurgery, neuroradiology, and neuropathology.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8038 - Cardiology Connections (4-8 Credits)

This course is designed for post-clinical year medical students who wish to enhance their ability to utilize basic scientific principles and knowledge in the practice of cardiovascular medicine.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8039 - Advanced Immunology and Immunotherapy (4-8 Credits)

This course will investigate the cellular and molecular processes necessary to achieve an advanced understanding of how the immune system maintains balance and operates in health and disease. Recent immunotherapeutic advances that have revolutionized treatment options will also be examined. Intensive analysis of selected topics, primary literature and relevant clinical cases focused within the field of immunology will result in the development of content integration skills, critical thinking, and analysis skills that can be applied to the practice of medicine as well as global scientific and societal issues.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8041 - IHQSE Quality Improvement Practicum (4-8 Credits)

This is a one semester longitudinal course offered Fall and Spring semesters. This course fosters inter-professional communications and enables students to obtain knowledge and skills for Quality Improvement (QI). Students will be integrated into ongoing quality improvement projects and work with Attending and/or Resident.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring.

IDPT 8044 - Health Systems and Community Leadership Trail (4-6 Credits)

Students will be equipped with skills needed in leadership roles in healthcare organizations – group practices, academic departments, community non-profits, hospital executive teams. Learning strategies will be mentorship and simulation exercises supplemented with directed reading and classroom discussion. Emphasis is on balancing professional values with financial reality.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8046 - IHI Open School Basic Certification (2 Credits)

Students complete the Institute for Healthcare Improvement (IHI) Open School Basic Certificate in Quality and Safety, comprising 13 courses (17.75 total hours), which provides a well-rounded introduction to quality, safety, population health, equity, health care leadership, and person- and family-centered care.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8047 - LIC Ambassadors (2-8 Credits)

Students will apply to become LIC Ambassadors following their LIC Foothills year, enabling them to participate in leadership, education, and project work, while serving future students as a peer-mentor and advisor, supporting LIC program directors, participating in scholarly work, helping with faculty development, and developing skills in medical education and teaching. Pre-requisite: Student must have completed the LIC in which they are serving as an Ambassador, unless approved exception by the LIC Director and Assistant Dean of Medical Education, Clinical Clerkships.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

IDPT 8048 - Future Leaders in Medical Education (4-6 Credits)

Welcome to Future Leaders in Medical Education s. This course is designed to prepare medical students to be the future leaders, teachers, and researchers in medical education. By developing medical education skills that can be implemented on day one of intern year, students will leave the course prepared for their roles as medical educators in residency and with tools for their future careers. We will introduce students to topics such as adult learning theory, curriculum design, evaluation and assessment, teaching, feedback, education administration, medical education research and scholarship, careers in medical education, and designing inclusive learning environments.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8053 - Medical Improvisation (4 Credits)

The Medical Improvisation elective uses interactive improvisation theater techniques to increase learner ability and confidence in patient-centered communication. Prior research has established Medical Improvisation's suitability for both advanced and beginning clinicians and multiple medical schools have incorporated this curriculum.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8060 - Alpine Basecamp - Transition to Adv Clerkship (4 Credits)

The Alpine Basecamp will further develops students' knowledge, skills, and attitudes necessary to begin their advanced clinical rotations with confidence and success. Through skills practice and case-based sessions, students will advance clinical reasoning, psychomotor, communication, and efficiency skills.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8061 - Summit Basecamp - Transition to Residency (8 Credits)

The Summit Basecamp- Transition to Residency (TTR) is a curriculum designed to prepare graduating medical students to be safe, efficient, and confident day-1 interns.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8062 - Research Trail II (4-6 Credits)

The Research Trail provides research education and training tailored to the collective and individual needs of medical students with research/academic/career interests.

Grading Basis: Pass Fail with IP

IDPT 8063 - Bioethics & Humanities Trail (4-6 Credits)

This course provides a broad introduction to bioethics and humanities. Through a combination of didactics and experiential, self-directed learning, learners will explore academic options and career pathways in bioethics and humanities. Learners can customize portions of the course to meet their needs and interests.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8066 - MSTP Advanced Neurosciences (4 Credits)

This course will integrate neuroscience and clinical science as applied to diseases and disorders of the nervous system. The curriculum will integrate neuroanatomy, neurophysiology, and neuropharmacology with clinical neurology, neurosurgery, neuroradiology, and neuropathology. Prerequisites: Course is only open to MSTP post-clerkship students who have successfully completed the pre-clerkship phase and most of the clerkship phase.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8067 - MSTP Advanced Immunology (4 Credits)

This course will investigate the cellular and molecular processes necessary to achieve an advanced understanding of how the immune system maintains balance and operates in health and disease. Recent immunotherapeutic advances that have revolutionized treatment options will also be examined. Intensive analysis of selected topics, primary literature and relevant clinical cases focused within the field of immunology will result in the development of content integration skills, critical thinking, and analysis skills that can be applied to the practice of medicine as well as global scientific and societal issues. Prerequisites: Course is only open to MSTP post-clerkship students who have successfully completed the pre-clerkship phase and most of the clerkship phase.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8068 - MSTP Cardiology Connections (4 Credits)

This course is designed for post-clinical year medical students who wish to enhance their ability to utilize basic scientific principles and knowledge in the practice of cardiovascular medicine. Prerequisites: Course is only open to MSTP post-clerkship students who have successfully completed the pre-clerkship phase and most of the clerkship phase.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8069 - Leading Patient Group Visits (3 Credits)

This longitudinal course aims to master anticipatory guidance for both prenatal and pediatric care. The model for the course is based on Centering Pregnancy and Centering Parenting which focuses on building strong relationships between providers and groups of patients. Prereq: Has completed clinical LIC year. Spanish speaking strongly preferred.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 9.

Typically Offered: Fall, Spring, Summer.

IDPT 8071 - One Health Trail Fort Collins Branch (4-6 Credits)

Welcome to the One Health Trail. We will investigate the myriad of ways that human, animal, plant, and environmental health are connected. We will travel and work within the local community to understand how human, animal, and environmental health intersects in the modern food supply chain, local arthropod control, wildlife and livestock management. We will evaluate frameworks, theories and methodologies employed by One Health practitioners. The course is designed to apply our critical analysis skills to current community health challenges and discuss One Health methods for solving those problems.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8072 - Medical Spanish Immersion Fort Collins Branch (2-4 Credits)

This course combines Spanish language learning with a health context. Students will develop their Spanish proficiency with a focus on health-related vocabulary and cultural context. By contributing to real-world community needs abroad, students will gain practical experience, broaden their understanding of global health systems, and analyze community health needs. Students will interact with health officials, administrators and patients, tour medical facilities, and interview community members.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 8073 - Nutrition & Culinary Medicine Selective (8 Credits)

The selective trains students to understand and communicate the impact of good nutrition on patient health and to work well with registered dietitians in interdisciplinary teams. In-person modules include case-based learning and meal preparation. Self-study online modules are paired with clinical shadowing of RDs and nutrition MDs.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8074 - Advanced Concepts in Public Health Selective (8 Credits)

The course will introduce students to the public health approach to improving health in both a present-day and historical perspective. We will compare/contrast these methods to those used in traditional medicine. We will then review public health, and community-based intervention strategies and policies addressing some of the most pressing public health crises. We will critically analyze changes in healthcare that could dramatically change population health, such as a universal health insurance system in the US. By evaluating international systems, we will debate the improvements and persistent health disparities that would exist if a universal health insurance model was adopted. Students will develop an understanding of the US public health system in order to better prepare themselves to collaborate effectively in the future to improve population health.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8075 - Climate Change and Environmental Health Selective (8 Credits)

Students will develop a strong foundation in planetary health while building a network of multi-disciplinary leaders in the field. Following a roadmap of lectures, self-directed learning activities, case studies, and field trips, students will confidently integrate environmental determinants of health into their professional practice.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8076 - Alpine Non-Surgical Musculoskeletal and Spine Medicine Selective (8 Credits)

The Alpine Non-Surgical Musculoskeletal (MSK) and Spine Care selective is a 4-week block that will focus on outpatient MSK diagnosis and management. Differential diagnoses will be emphasized within a MSK framework including symptom patterns, physical exam, imaging, and diagnostic injection interpretation. Students will be expected to learn management principles for acute and chronic conditions, including MSK health maintenance, secondary prevention, rehabilitation, medications, injections, and indications for surgery. Weekly didactics and scheduled self-study time will be used to facilitate medical knowledge development and application. The course will be pass/fail with grades based on attendance, participation, professionalism, and completion of assignments. Assignments will include a pre-test, post-test, online lectures, online learning modules, and readings. Core clinical conditions include osteoarthritis, joint injury, spine disorders, compression neuropathies, soft-tissue disorders (such as ligament sprains/tears, tendinopathies (including rotator cuff), bursitis, myofascial pain), chronic pain, and osteoporosis. MSK and spine conditions are among the most common explanations for visits to physicians' offices. Annually 15-30% of the population seeks care for MSK conditions. The presentation of such ailments is expected to increase with an aging population. Correspondingly, MSK knowledge and competency are integral for successful practices in internal medicine, family practice, emergency medicine, geriatrics, pediatrics, and others. Proficiency with the course outlined core competencies will enhance the professional growth of all students regardless of expected specialization.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8077 - Advanced Dissection Fort Collins Branch (1 Credit)

Students will develop their knowledge of clinically-relevant gross anatomy of a specific region of the body. They will also hone their technical skill in dissection, and practice producing and presenting a short presentation of their work to faculty.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring.

IDPT 8078 - Translational Medicine Selective Fort Collins Branch (8 Credits)

Students will use a clinical immersion to identify and learn how to effectively address an impactful knowledge gap in medicine. Training will include entrepreneurship, team building, regulatory issues, project/trial design, intellectual property, biotechnical/bioengineering resources, and effective communication of ideas and projects.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8079 - The Frontier of AI & Medicine Selective (8 Credits)

This course seeks to provide understanding of the current state of the art in ML/AI across multiple clinically relevant areas including imaging, health records, and genomics; to provide future practitioners with the knowledge to examine and critically think about performance assessments of AI systems; and to provide future practitioners with the understanding necessary to consider the ethical implications of AI deployments into clinical practice.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

IDPT 8090 - Mentored Scholarship IV (1-8 Credits)

A four year requirement for students to complete a mentored scholarly project and a capstone presentation. Project can be in one of the following thematic areas: basic research, clinical research, global health, epidemiology and public health, humanities and social sciences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring.

IDPT 8091 - MSA Phase IV Preparation (4-8 Credits)

Students work intensively with mentors on their chosen MSA Project.

Students critically review background literature, define a question/hypothesis, develop and implement methods and study design, collect data, analyze and interpret data, and submit written progress reports for their MSA Project. Prereq: MSA form required. Prior approval of Associate Dean for Student Affairs, Mentor, and Course Director required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

IDPT 8093 - IDPT Scholarly Activity (8 Credits)

This course is designed to allow students to complete scholarly work not appropriately covered by other available courses (e.g. MSA work beyond IDPT 8091). 4 weeks. Cannot be taken after section 47. Prereq: Special permission and individual arrangements required in advance. Student must have a faculty/project mentor who will sign off on the project.

Student must receive prior approval from Assoc. Dean for Student Affairs.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

IDPT 8095 - Research Track Phase IV (1-8 Credits)

Students complete requirements for Research Track which includes submission to a national scientific journal of a first author manuscript which meets mentor-standards as appropriate for submission. Students will present their work at the Capstone event. Prerequisite: Required if enrolled in Research Track. Instructor consent required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring.

IDPT 8096 - Alpine Critical Care Course (4 Credits)

As a part of the critical care graduation requirement, all students rotate for 2 weeks in an intensive care unit (ICU) at a core SOM site and participate in didactics/skill sessions addressing essential critical care topics. Students have an opportunity to select an adult medical, adult surgical, or pediatric ICU experience.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8097 - Narrative Medicine: Foundation (2 Credits)

This is an asynchronous longitudinal reading and writing course with 6 gatherings for dinner and discussion. Students must additionally enroll in the clinical month-long rotation the same semester. The goal of this course is to develop "narrative humility" through close reading and practicing the skills of attention, representation, and affiliation. The reading portion of this course consists of didactic material specific to narrative medicine, fictional short stories, patient stories, and 3 longer texts. These readings and reflections will be evaluated through both assigned writings and discussions. Prerequisites: Must co-enroll in the 4 week clinical narrative medicine rotation the same semester

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Summer.

IDPT 8098 - Healer's Art (2 Credits)

The Healer's Art course utilizes principles of adult education, contemplative studies, humanistic and transpersonal psychology, cognitive psychology, formation education, creative arts and storytelling to present and explore human dimensions of medicine rarely discussed in medical training. Topics covered include deep listening, presence, acceptance, loss, grief, healing, relationship, encounters with awe and mystery and self-care practices. The curriculum enables students to uncover and strengthen the altruistic values, sense of calling and intention to serve that have led them to medicine, creating a firm foundation for meeting the challenging demands of contemporary medical training and practice. This spring the course will be held online in five synchronous sessions. In this format we welcome medical students from CUSOM and CSU, and DVM students the CSU and UAF campuses. Medical students will complete additional reading, clinical observations, and a reflective assignment about topics learned in the course and how they impact the clinical setting.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8099 - Narrative Medicine in Primary Care (8 Credits)

The goal of this course is designed to translate the narrative skills taught in the foundation course into clinical practice, specifically within the context of primary care. Students will practice the skills of paying attention to their patients' affect, representation of their lifeworld, and illness meaning through the use of a narrative framework and then formulate plans that faithfully represent their patients' goals and values. Then hopefully with care and practice the student will experience affiliation with their patients and their sufferings, bridging the divide between the worlds of illness and health. Prerequisite: Must be co-enrolled or have previously taken the Narrative Medicine Foundation longitudinal course.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

IDPT 8101 - Global Health in Local Contexts (8 Credits)

This four-week advanced elective is designed for fourth-year medical students seeking an in-depth exploration of health equity and social justice at the local level with a focus on immigrant, refugee, and newcomer health.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8102 - Longitudinal Communication Coaching (4 Credits)

Longitudinal course spanning 2 semesters. Training in communications skills coaching and then longitudinal work with a DOCS coach and group over 3 sessions. Then substitute coach communication skill sessions within the DOCS curriculum. Prerequisites: Must submit a one paragraph essay which includes performance in the DOCS curriculum and passion for teaching to determine eligibility.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8103 - Environmental Health for Future Clinicians (4 Credits)

This course aims to bridge the gaps between public health and medicine by providing students with information about environmental health risks. The course is designed to help medical students learn more about how contaminants in the environment can impact patient health.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8104 - COAHEC National Underserved Scholars (1-2 Credits)

COAHEC National Underserved Scholars prepares students for practice in underserved areas throughout the US using didactic and experiential learning. The class aims to be a model for healthcare education with goals focusing on health equity, interprofessional collaboration, and producing physicians committed to addressing health inequities particularly within vulnerable populations. Throughout the course, students will learn from national experts who work with vulnerable populations to gain an understanding how the social determinants of health impact vulnerable communities from receiving medical care. These seminars will also provide an opportunity for students to get a variety of real-world approaches of how physicians approach the challenges of the social determinants of health, and how students can incorporate these lessons into a toolbox of sorts to have at the ready for their own practice. Additionally, eventually, students will have the opportunity to get involved in the Aurora community in a service capacity. While this serves to give back to the Aurora community, it also provides students the opportunity to get first-hand exposure to the social determinants of health and show how physicians can be involved in their communities outside of the clinic setting. In the first runs of the course, the students will act as mentors to URM high school students who may be interested in the medical field. This will continue until the elective expands and matures to become an important Friday food resource team for areas of Aurora as a Friday Food Fleet. Prereq: Open to students approved/accepted into AHEC Scholars program through application within AHEC.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

IDPT 8106 - Impacts of Climate Change through a One Health Lens (4 Credits)

Welcome to Climate Change & Health! This two-week, pass-fail, hybrid elective is open to medical students at CUSOM at the CSU branch.

The primary aim of the course is to deliver key knowledge and skills in planetary health which physicians may be able to draw upon for the mindful practice of medicine in the midst of a climate crisis. We will identify the health impacts of climate change and discuss effective responses on the part of specific health services. Learners may have opportunities – together and in multidisciplinary settings - to apply knowledge to levels of prevention, climate mitigation, and adaptation, and to explain health co-benefits of climate action.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8107 - Comparative Oncology (4 Credits)

Comparative oncology is the study of naturally occurring cancers in companion (pet) animals with an emphasis on determining their translational relevance to human cancers. Cancer is a common disease in pet dogs and cats, and the pet-owning public is highly motivated to seek traditional and experimental therapies. Cancer in companion animals shares many similarities to cancer in humans including histologic appearance, tumor genetics, molecular targets, biologic behavior, and response to conventional therapies. The Flint Animal Cancer Center (FACC) at the Colorado State University Veterinary Teaching Hospital (CSU-VTH) is a world-renowned leader in companion animal cancer research, residency and fellowship training, and clinical cancer care. The FACC offers a multidisciplinary approach to clinical cancer care, including medical oncology, surgical oncology, radiation oncology and clinical trials teams, in customized treatment planning for each companion animal patient. Additionally, our team is supported by the Argus Institute, a team of licensed social workers who assist with guiding the clinical team in the delivery of difficult conversations (poor prognosis, end of life, etc) and encourage provider well-being and mental health support. The Argus team also supports animal caregivers including grief counseling, quality of life assessment, and end of life decision making.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

IDPT 8108 - Language Access and Training to Work with Interpreters (4 Credits)

Welcome to Language Access and Training to Work with Interpreters. This course is designed to develop your abilities in facilitating language access and collaborating with interpreters in clinical settings. We will cover essential communication techniques, the ethical principles of language access, and the interpreter code of ethics followed by training to work with interpreters and simulated encounters. Through collaborative activities and reflective discussions, we will draw upon our shared knowledge and experiences to deepen our learning.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

IDPT 8110 - Preventive Medicine – Epidemiology & Public Health (4 Credits)

Welcome to Preventive Medicine. This course is designed to apply our clinical knowledge and critical analysis skills to public health and epidemiology. We will review and evaluate various concepts and methodologies that may be used in public health and epidemiology, specifically as they relate to One Health and population-level health. Learners may apply the principles of epidemiology to complete a research or service project that relates directly to vector-borne diseases.

Grading Basis: Pass Fail with IP

IDPT 8111 - Substance Use Disorders (4 Credits)

Welcome to the Fort Collins Branch Substance Use Disorders Elective. This elective is designed to build advanced clinical skills in the prevention, diagnosis, and treatment of substance use disorders (SUD). Regardless of what fields you ultimately enter following graduation, you will provide care to patients with SUD. We aim to cultivate an attitude of shared humanity and harm reduction in caring for patients with SUD. Additionally, we will use the lens of SUD to develop and practice advocacy skills that can be applied to other health policy and fields of practice.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

IDPT 8112 - Cancer Biology (8 Credits)

The Cancer Biology Course offers a 4-week integrated experience teaching key oncology concepts important for the care of cancer patients. Classroom learning will involve interactive sessions with case-based learning and application to clinical cases. We will focus on specific topics including how cancers develop, mechanisms of growth and resistance, as well as categories of oncology treatments such as hormonal therapies, targeted treatments, and immunologic approaches. The clinical component will allow students to build their skills seeing new oncology patients in multidisciplinary, tumor board settings, emphasizing radiology and pathology input in addition to specialists from medical, surgical, and radiation oncology. Learners will also have the opportunity for a broader, generalist oncology clinical experience at the VA or Denver Health, seeing patients of various tumor types.

Grading Basis: Pass Fail with IP

IDPT 8113 - Art in Medicine (8 Credits)

Art and Medicine is a class for third- and fourth-year students with the skills to utilize arts, humanities, and creativity to better understand issues of health equity, further their own personal growth and empathy, and improve perspective taking from their patients.

Grading Basis: Pass Fail with IP

IDPT 8114 - Experiences in Health and Nutrition-related Community Outreach (1 Credit)

Students will work with the Extension Office on outreach projects that address unique health-related needs of the local community. Experiences will include participation in planning and delivery of education around nutrition-related topics including food access, food safety, food preparation, gardening and farming, and healthy lifestyles. Students will interact with the public at the Larimer County Farmer's Market and have the opportunity to spend a day working on a farm. Other educational events that support topics such as healthy aging, living with chronic disease, youth activities, and climate-related topics will also be offered as opportunities during the elect

Grading Basis: Pass Fail with IP

IDPT 8601 - Research Track, Research I (8 Credits)

The first of two courses for Phase IV Research track medical students. Students are expected to spend full time working on their research project and towards the Track required goals of submitting an abstract and a first-author publication. Limited to and required for Phase IV (MS4) medical students who are in good standing in the Research Track. Course Director approval required. 4 weeks.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

IDPT 8602 - Research Track, Research II (8 Credits)

The second of two courses for Phase IV Research Track medical students. Students are expected to spend full time working on their research project and towards the Track required goals of submitting an abstract and a first-author publication. Restrictions: Limited to and required for Phase IV (MS4) medical students who are in good standing in the Research Track. May be repeated once as an elective. Prereq: IDPT 8601. Course Director approval required. 4 weeks.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

IDPT 8610 - Scholar's Year Research (2 Credits)

This 3-semester longitudinal course is an adjunct to the scholar's year for the work in progress during scholar's year, and requires twice a semester check ins with the Office of Student Life and reflection on career trajectory. Courses to be taken between 3rd year clinical courses and 4th year electives. Requisite: Must have successfully completed all 3rd year courses to enroll

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

IDPT 8890 - Clinical Experience for CTSI PhD Students (1 Credit)

Each student will identify a clinician mentor who will develop/direct clinical experience tailored to student's thesis research. It may include participation in relevant clinical conferences, a direct clinical experience, clinical research, and preparation of a clinical research protocol. Prereq: IDPT 7805 & 7646, EPID 6630, BIOS 6601 or equivalent. Restrictions: PhD Graduate Students.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

International Education-CSU (IEOO)

IEOO 6790 - Advanced International Development (3 Credits)

In-depth interdisciplinary analysis of theoretical and practical issues in implementing economic and community-based international development programs.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Interprofessional Collaborative Practice (IPCP)

IPCP 5000 - Interprofessional Collaborative Practice (1 Credit)

This course develops core competencies in teamwork & collaboration for incoming health professions students. Students will learn in Interprofessional teams coached by Interprofessional faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve Interprofessional collaboration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Spring.

IPCP 5500 - IP Collaborative Practice & Ed Independent Study (0.5-1 Credits)

The IPCP 5500 Independent Study, will allow students to explore IPCP content that complements and/or improves their knowledge and understanding of Inter-professional Practice and Education.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Interprofessional Healthcare Ethics & Health Equity (IPHE)

IPHE 5500 - IP Ethics & Health Equity Independent Study (0.5-1 Credits)

The IPHE 5500 Independent Study, will allow students to explore IPHE content that complements and/or improves their knowledge and understanding of Inter-professional Practice and Education.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

IPHE 6000 - IPE Healthcare Ethics & Health Equity (1 Credit)

Develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical & health equity issues in clinical practice. Integrates inter-professional collaboration & teamwork to teach students ethical theory & reasoning, professional ethics and its historical origins, and approaches to health care decision-making.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Fall.

Journalism and Tech Comm-CSU (JTCM)

JTCM 5010 - Process and Effects of Communication (4 Credits)

Examination of communication theory including communicator credibility, messages, channels, audiences, and information, behavior, and attitude change. Prereq: JTCM 5000

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

JTCM 6140 - Public Communication Campaigns (3 Credits)

Conceptual, methodological issues and decisions underpinning determination of communication campaign effects, planning, implementation, and evaluation.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

JTCM 6300 - Health Communication (3 Credits)

Role of health communication in public health programs and campaigns.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

JTCM 6500 - Strategic Communication Management (3 Credits)

Theoretical and practical management techniques for public relations campaigns including societal, ethical, and legal issues involved.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

JTCM 6600 - Communication and Innovation (3 Credits)

Communication's role in technology transfer as related to nature, process, and effects of technology transfer, knowledge dissemination, and utilization.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

JTCM 6610 - Information Design (3 Credits)

Theoretical and empirical review of creation, presentation, storage, and distribution of information.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

JTCM 6700 - Social Processes of Risk (3 Credits)

Provides students with a broad entry to this sprawling and cross-disciplinary literature, from seminal work that served to coalesce study of risk perception and risk communication to the most current literature that is redefining this field and charting its future.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

JTCM 6950 - Independent Study: Communication (1-3 Credits)

Independent study in Journalism and Technical Communication.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Master of Science in Clinical Pharmacy (PRDM)

PRDM 7150 - Medical Terminology and Lab Interpretation (0.5 Credits)

Medical Terminology and Lab Interpretation – This course provides a review of medical terminology and laboratory interpretation with an emphasis on US pharmacy and medical terms and abbreviations. Students will also review the top 100 medication prescribe in the United States.

Grading Basis: Letter Grade

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDM 7323 - Pharmacotherapy – Critical Care (1 Credit)

Pharmacotherapy – Critical Care – This course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for critical care patients. Course may include case-based, team-based learning.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7331 - Pharmacotherapy – Pediatrics (1 Credit)

Pharmacotherapy – Pediatrics -Combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for disorders and issues of pediatrics patients. Course may include case-based, team-based learning.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7400 - Drug Info Fundamentals (1 Credit)

Drug Information Fundamentals – The fundamentals of practice of drug information are introduced so students can retrieve, evaluate, and utilize professional and lay information in a critical manner that enhances their practice of pharmacy, all in the context of the history and contemporary pharmacy practice.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7413 - Masters Drug Information Portfolio (0.5 Credits)

This longitudinal portfolio is for CPM students to learn, build competence and gain experience in the application of acquired drug information knowledge. Required prerequisites: PRDM 7150, PRDM 7700 and PRDM 7400

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDM 7440 - Evidence-Based Medicine & Literature Eval (3 Credits)

Evidence-Based Medicine & Literature Evaluation –This course provides an introduction and step-wise approach to evidence-based medicine. Knowledge gained from this course allows students to search for and understand published medical studies, research designs and statistical tests, and their application to clinical practice. Required prerequisites: PRDM 7150, PRDM 7700, PRDM 7400, PRDM 7621, PRDM 7622, PRDM 7561.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

PRDM 7470 - U.S. Pharmacy Leadership & Management (2 Credits)

US Pharmacy Leadership and Management – Provides students with an overview of fundamental principles of leadership. Attributes of effective leaders will be identified and discussed. An emphasis will be placed on identifying and cultivating personal leadership qualities to use throughout their pharmacy education and career.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PRDM 7490 - Healthcare Informatics (1 Credit)

Healthcare Informatics – This course strengthens the skills necessary to allow practicing pharmacists to provide accurate, unbiased, and relevant drug information.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7492 - Healthcare Informatics II (1 Credit)

This course will focus on fundamentals of pharmacy informatics with an emphasis on data management, methods and medication-related applications. Prerequisite: PRDM 7150, PRDM 7490, PRDM 7700.

Students eligible to enroll: M.S. Clinical Pharmacy student.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7495 - Innovation Entrepreneurship (1 Credit)

This goal of this course is to introduce the student to thinking differently.

During the course, the learner will have the opportunity to gain an understanding and recognize their creative abilities, promote innovation in themselves and others, and demonstrate productive thinking. Upon completion the student should have a better understanding. Requisite: PRDM 7150, PRDM 7490, PRDM 7700. Students eligible to enroll: M.S. Clinical Pharmacy student.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7561 - Instructional Methods/Research (1.5 Credits)

Instructional Methods/Research - This course is designed to advance the participant's presentation and teaching skills. It focuses on the development of essential components of formal presentations, including learning objectives, outlines, and delivery skills. Participants use a clinical question to achieve the course requirements. Required prerequisites: PRDM 7150, PRDM 7700, PRDM 7400, PRDM 7621 & PRDM 7622

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.5.

Typically Offered: Fall, Spring, Summer.

PRDM 7562 - Instructional Methods (1 Credit)

This course is designed to advance the presentation and teaching skills of participants. It focuses on the development of essential components of formal presentations, including learning objectives, outlines, and delivery skills. Eligible Students: MSClin Pharm students.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

PRDM 7601 - Public Health (1 Credit)

Public Health –This course provides an overview of the US healthcare system with insight into global health issues, their key components and their functional relationships.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7602 - U.S. Based Health Economics (1 Credit)

US Based Health Economics – This course covers economic evaluation techniques for pharmaceutical care, and how to use economic clinical and humanistic outcomes research to understand and assess health care interventions and health care systems.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7621 - Interprofessional Collaborative Practice (0.5 Credits)

This course develops core competencies in teamwork & collaboration for incoming health professions students. Students will learn in IP teams coached by IP faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve IP collaboration.

Notes:Eligible Students: - NTPD students. ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDM 7622 - Interprof Healthcare Ethics & Health Equity (0.5 Credits)

This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice. It integrates interprofessional collaboration and teamwork to teach students ethical theory and reasoning, professional ethics and approaches to healthcare decision-making. Notes:Eligible Students: - NTPD students. ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDM 7700 - Clinical Skills Foundation (2 Credits)

Clinical Skills Foundation – This course combines three components that provide foundation for ADMS courses: 1) orientation to patient assessment and skills development; 2) pharmacokinetics and pharmacodynamics; 3) advanced disease state management for fluids, electrolytes, and acid-base disorders.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PRDM 7710 - Pharmacotherapy I – CV/Renal (2.5 Credits)

Pharmacotherapy I – CV/Renal –This course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for patients with common cardiovascular and renal disorders. Requisite: PRDM 7700

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.5.

Typically Offered: Fall, Spring, Summer.

PRDM 7720 - Pharmacotherapy II – GI/Nutrition (2.5 Credits)

Pharmacotherapy II – GI/Nutrition –Combines pathophysiology, advanced pharmacotherapeutics management, drug-specific pharmacokinetics, patient assessment, and professional skills development for patients with gastrointestinal and nutrition disorders.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.5.

Typically Offered: Fall, Spring, Summer.

PRDM 7730 - Pharmacotherapy III Infectious Diseases (2 Credits)

Pharmacotherapy III – Infectious Diseases – This course combines pathophysiology, advanced pharmacotherapeutics management, basic patient assessment, and professional skills development for patients with infectious diseases.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PRDM 7741 - Pharmacotherapy IV-Oncology (2 Credits)

Pharmacotherapy IV- Oncology – This course combines pathophysiology, advanced pharmacotherapeutics management, basic patient assessment, and professional skills development for oncology disorders. The course incorporates the principles of active learning using lecture and interactive formats.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PRDM 7742 - Pharmacotherapy IV-II Bone & Connective Tissue (0.5 Credits)

Pharmacotherapy IV-II – Bone and Connective Tissue Disorders – Combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for patients with bone and connective tissue disorders.

Grading Basis: Letter Grade

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDM 7745 - Palliative Care Pharmacotherapy (1 Credit)

Palliative Care - This course is designed to introduce the student to palliative care and hospice pharmacy practice. Students will learn the pathophysiology, pharmacotherapeutics, patient assessment, and communication skills necessary to manage pain and other complex symptoms in patients living with serious illness. Requisite: PRDO/PRDM 7700, strongly suggest PRDO/PRDM 7741.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7750 - Pharmacotherapy V- Geriatrics/Neurology/Psychiatry (3 Credits)

Pharmacotherapy V – Geriatrics, Neurology, Psychiatry –Combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for geriatrics, psychiatric, and neurological disorders.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

PRDM 7755 - Pharmacotherapy V-Geriatrics/Neurology/Psych (2.5 Credits)

pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for geriatrics, psychiatric, and neurological disorders.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDM 7760 - Pharmacotherapy VI- Pulm/Hematology/Gynecology/Endo (3 Credits)

Pharmacotherapy VI – Pulmonary, Hematology, Gynecology, and Endocrine Disorders –This course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, and professional skills development for patients with endocrinology, hematology, pulmonology, and gynecology/urologic disorders.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

PRDM 7775 - Integrated Health and Medicine (1 Credit)

Integrated Health and Medicine - This course is designed to develop a broad knowledge base in the field of Complementary and Alternative Medicine (CAM). Course will cover common vitamins and minerals, herbal products, and bio-identical hormones, touching on core CAM domains and discussions of regulatory issues.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7777 - COAST IT - Elective (1 Credit)

Connecting older adults with students through interprofessional telecare is a program where students are paired with an older adult partner (OAP) with whom to make social phone/video calls, to help reduce isolation and loneliness of the OAP, and improve conversation skills and awareness of geriatric issues for the student.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDM 7780 - Pharmacogenomics (1.5 Credits)

Pharmacogenomics – This course provides students with an understanding of how genetic factors influence drug disposition, response, and adverse effects. Knowledge gained from this course enhances students' ability to apply generic information to pharmacy practice and select the most appropriate therapeutic intervention(s).

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.5.

Typically Offered: Fall, Spring, Summer.

PRDM 7800 - Clinical Reasoning & Decision Making (2 Credits)

Clinical Reasoning & Decision Making – Designed for students to become familiar with the clinical decision making process by incorporating various skills including basic principles of drug information, clinical knowledge, systems-based or governmental policies, and payer status applying these skills to patient-specific problems. Required prerequisites:

PRDM 7150, PRDM 7700, PRDM 7400, PRDM 7621, PRDM 7622,

PRDM 7561, PRDM 7440.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PRDM 7818 - Pharmaceutical Industry Fundamentals (2 Credits)

Course provides a broad background on the pharmaceutical industry, with a focus on 7 key topic areas of interest to practicing pharmacists, including fundamental areas, such as clinical development, medical affairs and commercial topics. Students will complete an additional topic of their choice to meet their professional needs.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PRDM 7850 - Clinical Capstone (3.5 Credits)

Clinical Capstone -- This course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning and hold students accountable for prior learning in an integrated manner using complex patient scenarios. Required prerequisites: PRDM 7150, PRDM 7700, PRDM 7400, PRDM 7621, PRDM 7622, PRDM 7561, PRDM 7440, PRDM 7800.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.5.

Typically Offered: Fall, Spring, Summer.

PRDM 7851 - Clinical Capstone (3.5 Credits)

Clinical Capstone -- This course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning and hold students accountable for prior learning in an integrated manner using complex patient scenarios. Required prerequisites: PRDM 7150, PRDM 7700, PRDM 7400, PRDM 7621, PRDM 7622, PRDM 7561, PRDM 7440, PRDM 7800.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.5.

Typically Offered: Fall, Spring, Summer.

PRDM 8000 - CPM Capstone Thesis (3 Credits)

CPM Capstone Thesis-It is an experiential project to enhance patient-centered pharmacy care (i.e., clinical pharmacy) awareness, engagement, and practice or to address a problem in the student's real-world or work setting. This course will familiarize students with the various types of Capstone Thesis projects they can undertake. Required prerequisites: PRDM 7150, PRDM 7700, PRDM 7400, PRDM 7621, PRDM 7622, PRDM 7561, PRDM 7440, PRDM 7800, PRDM 7851.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

PRDM 8001 - MS Clin Pharm Capstone Thesis Foundations (0.5 Credits)

This course provides fundamentals in research and clinical pharmacy project types, allowing students to choose a topic, then plan and execute that project. The course requires successful live presentation of project proposal. It serves as a prerequisite to the longitudinal project course, to be completed throughout the program. Required pre- or co-requisites: PRDM 7400 Drug Information Fundamentals and PRDM 7440 Evidence-based medicine

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDM 8003 - MS in Clinical Pharmacy Internship (6 Credits)

This course will involve 240 clock hours of applied learning in a mutually-agreed upon (between the student and SSPPS) professional site, such as a patient care or other clinical pharmacy related site. The course requires a significant paper reflecting on the learning experience and future application of it. Requisite: Students must independently secure proper professional licensure, such as intern pharmacist or pharmacist license, for the local area of the internship site.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

Medical Scientist Training Program (MSTP)

MSTP 5017 - Hematologic & Lymphatic Systems (5 Credits)

This course focuses on the basic science and clinical concepts underlying the origin, development, normal function, and related hematologic and immunologic disease states. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

MSTP 5022 - Nervous System (8 Credits)

A foundational, interdisciplinary approach to nervous system structure and function in health and disease will include neuroanatomy, pathophysiology, and pharmacology, among others. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MSTP 5025 - Endocrine & Metabolic Systems (7 Credits)

Biochemistry, pathology, physiology, immunology, and pharmacology are combined with the clinical approach to diagnosis and treatment of disorders of the endocrine system. Integrated Health & Society and Clinical Skills content will develop students' knowledge and skills to provide effective, equitable patient-centered care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

MSTP 5026 - MSTP Reproductive System & Life Cycle (9 Credits)

Same as course IDPT5026.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

MSTP 7645 - MSTP Seminar (1.5 Credits)

Designed to expose MSTP and physician scientist students to research programs and opportunities in biomedical sciences at the CU Anschutz Medical campus and selected departments of the CU Boulder campus. Previously offered as IDPT 7645.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

MSTP 7651 - MSTP Lab Research Rotation (1.5-3 Credits)

This course is a 6 week laboratory rotation experience in an MSTP training laboratory. This course allows for MSTP students to rotate in the lab of an MSTP-appointed faculty in advance of selection of their graduate thesis program and lab. MSTP students should use this rotation to learn about the science and dynamics of the lab so that they can assess potential fit for their thesis studies. Prerequisite: Acceptance into the MST Program and signed permission from the MSTP Director.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring, Summer.

MSTP 7652 - MSTP Advanced Topics (1-5 Credits)

This course is designed for students in the MSTP and consists of in-depth small group (1-7 students) sessions that provide in-depth didactic and/or paper readings on subjects related to research rotations or thesis projects. Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci core courses); consent of Instructor. Previously offered as IDPT 7652

Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

MSTP 7655 - Thesis Years - Foundations of Doctoring (1-5 Credits)

This course intended for MD or MD-PhD students who have successfully completed all coursework for Phases I and II of SOM curriculum, are on leave of absence from SOM and wish to maintain clinical exposure and training during the leave. Prereq: All Phase I and II SOM courses. Previously offered as IDPT 7655

Grading Basis: Letter Grade

Repeatable. Max Credits: 5.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

MSTP 7755 - MSTP Clinical Capstone (1 Credit)

This 5-day clinical immersion course designed to acquaint MSTP students with clinical training. Didactics and discussions focus on clinical skills and inpatient medicine teams. In practical activities, students follow 2-3 patients, present on rounds, call consultants, and formulate plans of care. Previously offered as IDPT 7755

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Spring.

MSTP 7805 - Case Studies: Molecules to Medicine (1 Credit)

This course is targeted for first year MSTP/Physician-Scientist students. Clinical cases will be presented/discussed by faculty and students to provide clinical context for basic science principles taught in the graduate core courses (IDPT 7811-7815). Prereq: IDPT 7811, 7812, 7813, 7814, 7815 (BIOM Sci Core Courses). Crosslisted: IDPT 5002. Previously offered as IDPT 7805.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

Medicine (MEDS)

MEDS 8001 - Medicine AI (8 Credits)

4 wks. Max:18. This course can meet Sub-I qualifications. The sub-intern functions as an intern and is responsible for the admission, evaluation, and continuing care of patients under the supervision of a Resident and an Attending. Subinternships are offered at DHMC, P/SL, UCH, VAMC, and St. Joseph's Hospital.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8002 - Hospital Medicine AI (8 Credits)

Experience hospitalist medicine first hand by working one-on-one with an attending and developing a quality improvement initiative. You will also gain the skills to excel from the start of intern year by being the primary provider for your patients. This Sub-I course meets the CU SOM requirement for graduation.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8004 - Cardiology (4-8 Credits)

4 wks. Designed to offer a broad general exposure to adult cardiology, including history, physical examination, and an introduction and review of standard noninvasive testing. Rotations will be at UCH, DVAMC and DHMC with assignments based on timing of request and availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

MEDS 8006 - Allergy/Clin Immunology (4-8 Credits)

4 wks. Max:1. Offered at UH and NJMC. Allergy and clinical immunology with direct patient contact in allergy and immunology clinics.

Opportunities to participate in inpatient consultations, observe clinical immunology laboratory techniques, and library research. Prereq: Course Director approval required to add course.

Grading Basis: Medical School HP

MEDS 8007 - Clinical Renal (4-8 Credits)

4 wks. Max:4. A four-week elective course in electrolyte, hypertensive, acute and chronic renal failure, glomerular (including diabetes) disorders, and hospital services. The students will see consults on all services, learn to maintain and analyze flow sheets, and review problems with residents and fellows.

Grading Basis: Medical School HP

MEDS 8009 - Clin Infectious Diseases (4-8 Credits)

2-4 wks. Max:4. UCH and DHMC. Hospital assigned. Hospitalized patients with a variety of infectious diseases are available for study. Diagnosis, pathophysiology, immunology, epidemiology, and management, including use of anti-microbial agents are emphasized. Students attend and participate in ward rounds and conferences. Prereq: Completion of core requirements for 3rd year students. Restrictions: Accept 4th year students only. Note: a 2 week elective maybe available. Student must make arrangements with Student Affairs and be pre-approved by Program Director before being confirmed to take elective course.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

MEDS 8010 - Clin Gastroenterology (4-8 Credits)

4-12 wks. Max:2. Students will participate in work up of both hospitalized and ambulatory patients with gastrointestinal (GI) illnesses. GI pathophysiology will be emphasized. Students attend weekly conferences in clinical gastroenterology, radiology and pathology. They are invited to observe procedures. Hospital is assigned.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

MEDS 8011 - Pulmonary Medicine (4-8 Credits)

4 wks. Max: 2. UCH, DHMC, and DVAMC. This elective offers broad experience in pulmonary and critical care medicine. Students participate in consultations, attend conferences and clinics. A wide variety of pulmonary and critical care cases are seen.

Grading Basis: Medical School HP

MEDS 8012 - Clinical Rheumatology (8 Credits)

4 wks. Max:1. Students will learn how to recognize, diagnose, and treat common rheumatic disorders. Students will attend all formal teaching conferences in the Division of Rheumatology and attend 6 or more outpatient clinics each week. Prereq: Completion of all third year clerkships.

Grading Basis: Medical School HP

MEDS 8013 - Endocrinology (4-8 Credits)

2-4 wks. Max:2. Introduction to evaluation and management of endocrine disorders via outpatient clinics and inpatient consults at VAMC, DHMC, and UCH. Endocrine-focused history-taking and physical examination with a complete problem-oriented approach to patient care. Multiple conferences and close interaction with fellows and attendings.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

MEDS 8014 - Hematology / Oncology (4-8 Credits)

2-4 wks. Max:1. Students are exposed to a wide range of patients seen in consultation for hematologic and oncologic problems. Students may also elect to attend the numerous subspecialty outpatient clinics for patients with various malignancies. Prereq: MED, OBGYN, PED, PSCH 7000.
Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 12.

MEDS 8015 - Care for the Under-served (8 Credits)

This elective is for students interested in Internal Medicine and care for under-served populations. Students will rotate in a clinic at Denver Health, the DAWN clinic (student-run clinic for under-served patients), and complete a healthcare disparities project.
Grading Basis: Pass Fail with IP
Typically Offered: Fall, Spring, Summer.

MEDS 8017 - Hospice/Palliative Care (4-8 Credits)

2-4 wks. Max:1. This is an introduction to hospice and palliative care. You will become a member of the interdisciplinary team at the Hospice of Saint John, focusing on the physical, social, psychological, and spiritual aspects of patient care for the terminally ill. Requirement: Contact Dr. Youngwerth one week prior to starting via Email Jean.Youngwerth@ucdenver.edu.
Grading Basis: Medical School HP
Repeatable. Max Credits: 8.

MEDS 8018 - Advanced EKG and Cardiac Arrhythmia Fort Collins Branch (4 Credits)

This course will build on the basic EKG skills achieved during the basic science and clinical clerkship to better understand the conduction system of the heart and review the physiology behind an array of fascinating cardiac arrhythmias. Instruction will be provided through lectures and clinical sessions. Students will receive instruction on ECG interpretation, using fundamentals of cardiac electrophysiology to guide their approach. These principles will be applied as they round on the inpatient electrophysiology service and observe diagnostic and therapeutic interventions in the electrophysiology lab. We will also provide an overview of cardiac devices (pacemakers and defibrillators) by rotating through the device clinic, participate in procedures such as cardioversions, trans-esophageal ultrasounds, and loop recorder implants. This course is designed to provide a base of knowledge that will be applicable for all students, regardless of their intended clinical field of interest.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

MEDS 8019 - Geriatric Medicine Fort Collins Branch (8 Credits)

Welcome to the Geriatric Medicine elective. This course is designed to expose learners to the care of older adults across different care settings. This course will introduce students to the complexities of medical care for older adults, including challenges that are unique to the older adult population.
Grading Basis: Pass Fail with IP
Typically Offered: Spring.

MEDS 8023 - Medicine Consult (4-8 Credits)

Medicine Consult is for students interested in learning about medical issues of surgical patients and performing general medical consultations for non-medical services. This elective will be useful to the student interested in a career in hospital medicine or surgical subspecialties. Offered for 2 or 4 weeks. Prereq: 3rd year medicine
Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

MEDS 8025 - Medical Oncology (8-12 Credits)

4-6 wks. Max:2. Students will learn the basic aspects of medical oncology by evaluation of patients in the general oncology and subspecialty oncology clinics. They will attend the weekly multi-disciplinary tumor conferences and fellow didactic conferences.
Grading Basis: Medical School HP
Repeatable. Max Credits: 12.

MEDS 8032 - Corrections Health Care (4 Credits)

2 wks. Max:1. Provide primary care to inmates in corrections facilities. Experiences include manipulative or drug-seeking patients, the interface between health care and the legal system, and issues in correctional health care (ie., HIV, TB). Prereq: One month notice needed to schedule this elective.
Grading Basis: Medical School HP

MEDS 8034 - Critical Care St Joe's AI (8 Credits)

4 wks. Max:2. This course can meet Sub-I qualifications. Student functions as an intern-equivalent and admits patients during overnight call every third day. Student will attend daily ICU interdisciplinary rounds and enhance skills in reporting, interpreting clinical information, communication, and patient management plans. Student will present an EMB-research clinical question.
Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

MEDS 8037 - Medical ICU Acting Internship (8 Credits)

This rotation will provide training in the care of critically ill ICU patients. Emphasized skills will include management of respiratory failure, hemodynamic instability, severe electrolyte abnormalities, gastrointestinal emergencies and common ICU procedures. Prereq: Sub I in Medicine or Surgery.
Grading Basis: Medical School HP

MEDS 8100 - MEDS Elective Away (4-8 Credits)

This Medicine elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2 or 4 weeks.
Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 8.
Typically Offered: Fall, Spring, Summer.

MEDS 8600 - Research in Medicine (4-24 Credits)

2-12 wks. Course provides an opportunity for seniors to participate in research at the clinical or basic science level. The student must consult with Dr. Horwitz or Dr. Aagaard about the varieties of options available. Course is graded on a pass/fail basis only. Restrictions: Not available sections 49-50.
Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 24.

MEDS 8630 - MEDS Research Away (8-16 Credits)

This Medicine research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2, 4, 6, or 8 weeks. This course is graded on a pass/fail basis only.
Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 16.
Typically Offered: Fall, Spring, Summer.

Microbiol, Immunology, Pathology-CSU (MIPO)

MIPO 5550 - Principles and Mechanisms of Disease (3 Credits)

Principles of disease processes; emphasis on reactivity of the diseased cell, tissue, organ or organism. Prereq: BMS 300, coursework in histology, physiology and anatomy. Permission of instructor needed if prerequisites not met.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

MIPO 5801 - Infectious Diseases and Social Equity (3 Credits)

This course explores the social forces underlying the distribution and outcomes of infectious diseases throughout human history. During the course, we will review the structural vulnerability and violence linked to modern human groups.

Grading Basis: Letter Grade

Typically Offered: Spring.

Microbiology (MICB)

MICB 7650 - Research in Microbiology (1-10 Credits)

Research work in microbiology. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

MICB 7701 - Molecular Virology and Pathogenesis (3 Credits)

Topics in this course include viral structure and genome organization, replication and expression of viral genomes, mechanism of action of tumor viruses, molecular aspects of virus-host cell interactions, animal models of infectious diseases and pathogenesis of human viruses.

Prereq: MICB 7706, MICB 7705 are desirable but not required. Restriction: Permission of Instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

MICB 7703 - Molecular Mechanisms of Bacterial Disease (3 Credits)

The course focuses on molecular processes that bacteria utilize to cause disease in humans. The course content will use specific examples from pathogenic bacteria to illustrate common virulence mechanisms utilized to initiate, maintain and survive interactions with host cells. Prereq: Recommended Fundamentals of Microbiology Restrictions: Permission of the instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

MICB 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in microbiology. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Modern Human Anatomy (ANAT)

ANAT 6111 - Human Gross Anatomy (8 Credits)

The Human Gross Anatomy course examines the form and function of the human body at a macroscopic level. Systems-based and regional anatomy lectures are complemented by full-body cadaver dissection. Medical imaging labs provide the opportunity to learn ultrasound skills. Requirements: Must be a degree-seeking student in MS Modern Human Anatomy program.

Grading Basis: Letter Grade

Typically Offered: Spring.

ANAT 6205 - Imaging and Modeling (4 Credits)

This course covers major medical and scientific imaging modalities with an emphasis on 3D scientific and medical visualization. Students will also receive instruction in advanced digital image processing and 3D modeling using industry-standard software such as MATLAB and Maya.

Prerequisite: Only ANAT degree-seeking students

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6208 - Foundations in 3D Modeling for Anatomical Sciences (1 Credit)

An introduction to the applications and techniques necessary for 3D scanning, modeling, and printing. This lab-based course will provide students with hands-on experience on acquiring and processing surface scan data along with strategies for printing and finishing objects using fused-deposition modeling and stereo lithography. Pre-requisite:

ANAT 6205

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

ANAT 6210 - Autodesk Maya for Anatomical Science (2 Credits)

Autodesk Maya for Anatomical Sciences teaches students to create professional animations illustrating concepts inherent in the study of medical science using Autodesk Maya. Pre-requisite: ANAT 6208.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

ANAT 6220 - Unreal Engine for the Anatomical Sciences (2 Credits)

This course builds upon the foundational 3D modeling skills learned in ANAT 6260 and provides students with the practical experience, inspiration, and confidence to incorporate the Unreal Engine into their capstone. Students will deploy an app built with Unreal Engine. Pre-requisite: ANAT 6208 Prerequisite; ANAT-MS student or instructor permission.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

ANAT 6310 - Neuroanatomy (4 Credits)

Structure & Function in the Human Nervous System. Basic neuroanatomy & neural systems with workshop focus employing facilitated discussions & problem-oriented cases. Laboratory sessions will employ brain specimens, models & image sets. Team-based projects are in-depth exploration of topics with development of collaborative presentations. Requisite: Restricted to ANAT students only.

Grading Basis: Letter Grade

Typically Offered: Fall.

ANAT 6321 - Human Histology (4 Credits)

Histology is the study of the tissues. By exploring the human structure, function and organization at the histological level, students will gain important pattern recognition skills to integrate microscopic knowledge with macroscopic gross anatomy and other foundational anatomical sciences. (Will replace ANAT 6320) Prereq: Restricted to ANAT students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6330 - Human Embryology (3 Credits)

This graduate level, introductory human embryology course will emphasize developmental aspects of adult anatomy and congenital malformations. Educational value of three-or-four-dimensional models and other ancillary learning resources for human embryology will also be explored. Requisite: Restricted to ANAT students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

ANAT 6412 - Foundations of Teaching (1 Credit)

This course will provide students with training, practice, and constructive feedback in effective teaching skills in order to be successful in the biomedical professions. Topics include learning objectives, the neurobiology of learning, assessments, and effective communication within and outside the classroom.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

ANAT 6490 - Advanced Teaching in Anatomical Sciences (3 Credits)

This course offers a hands-on, supervised experience as an anatomical sciences educator. Readings and discussions will enhance your understanding of educational pedagogy. You will apply these skills as you develop and deliver lecture and lab content in a classroom setting. Instructor consent required.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

ANAT 6600 - Experimental Design and Research Methods (1 Credit)

In this course, students will foster and apply strategies that enable critical evaluation of any published research (including basic, clinical, and educational), as well as develop the skills necessary to conduct and appropriately analyze their own research data.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Summer.

ANAT 6750 - Special Topics: Modern Human Anatomy (1-6 Credits)

This course is offered in a variety of technical and thematic areas in modern human anatomy. The specific topics vary from year to year. Note: This course includes lectures, discussions and workshops.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6840 - Independent Study (1-6 Credits)

This course enables the student to pursue an investigation in a modern human anatomical field of choice toward completion of a capstone project with relatively minor supervision from faculty advisors.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6910 - Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Prereq.: ANAT 6412. Course restricted to ANAT majors.

Grading Basis: Satisfactory/Unsatisfactory

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6911 - Advanced Teaching Practicum (1-4 Credits)

Hands-on teaching course in which students apply pedagogical theories to practice in a professional program as a teaching assistant, lecturer or other instructional position. Pre-requisite: ANAT degree-seeking student; ANAT 6412

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

ANAT 6931 - MSMHA Internship (1-6 Credits)

The internship provides hands-on learning opportunities and practical experience for graduate students in institutions related to anatomical sciences, imaging, technology/biotechnology, innovation, and entrepreneurship. Restricted to ANAT students only

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

ANAT 6950 - MSMHA Capstone Project (1-12 Credits)

The Capstone project is a scholarly and/or research-based pursuit of knowledge and content development in the area of anatomical sciences, modern imaging and modeling technologies, and educational science completed as part of the MS in Modern Human Anatomy. Prerequisite: Must be ANAT degree-seeking student.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Molecular Biology (MOLB)

MOLB 7650 - Research in Molecular Biology (1-10 Credits)

Research work in molecular biology. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

MOLB 7661 - Molecular Biology Seminar (1 Credit)

Seminar series provides a forum for the presentation of scientific experiments and information in molecular biology by faculty, postdoctoral fellows, graduate students and invited outside guest speakers.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

MOLB 7800 - Advanced Topics in Molecular Biology (3-4 Credits)

Course instructs graduate students how to critically evaluate scientific literature. Course in 4 blocks; topics include nucleic acid, chromatin structure, DNA replication, RNA transcription, RNA processing, cell cycle control, genetics of model organisms. Papers chosen by instructors, presentations by students. Prereq: IDPT 7811, 7812, 7813, 7814, 7815. Restriction: By Permission of instructor. Course offered in 4 blocks of 1 hour of credit each.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

MOLB 7900 - Practical Computational Biology for Biologists: Python (2 Credits)

Comp. biology class aimed at biology PhD students. Topics covered include: basic practices for coding in python; analysis of standard high-throughput genomic data to study the regulation of gene expression; intro to modeling gene expression; data visualization; communicating computational analysis/results. 3 wks. lecture, lab & recitation

Grading Basis: Letter Grade

Typically Offered: Spring.

MOLB 7950 - Informatics and Statistics for Molecular Biology (3 Credits)

This course covers the design and analysis of common molecular biology experiments with thorough coverage of statistical and informatic approaches to data analysis. The course begins with a "boot camp" that covers use of shell programming, R/R Studio, and Python scripting in bioinformatics. Pre-Req: MOLB-PhD or CSDV-PhD students only

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

MOLB 8990 - Doctoral Thesis in Molecular Biology (1-10 Credits)

Doctoral thesis work in molecular biology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

MPAS - Phys Asst-Pediatrics (MPAS)

MPAS 5000 - Summer Immersion (10 Credits)

This first year course is designed to introduce learners to the Anschutz Medical Campus, fundamentals of learning strategies, PA professional roles, wellness and resilience and the clinical presentation curriculum.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Summer.

MPAS 5001 - Hematology, Infection, Inflammation and Malignancy I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with hematologic, infection, inflammation and malignancy conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5002 - Gastrointestinal, Genitourinary and Renal I (5 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with gastrointestinal, genitourinary and renal conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5003 - Cardiovascular and Pulmonary I (5 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with cardiovascular and pulmonary conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5004 - Dermatology and HEENT I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with dermatologic, head, ears, eyes, nose, and throat conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5005 - Musculoskeletal and Neurology I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with musculoskeletal and neurologic conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5006 - Endocrinology and Reproduction I (4 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with endocrine and reproductive conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5007 - Psychiatry I (3 Credits)

Learners will be immersed in a first-year integrated learning environment covering both the basic sciences and clinical medicine necessary for a primary care provider to care for patients presenting with psychiatric conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5020 - Clinical Skills I (3 Credits)

Learners will be engaged in a first-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5021 - Clinical Skills II (3 Credits)

Learners will be engaged in a first-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation. This is a continuation of MPAS 5020.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5030 - Foundations in Prevention, Advocacy and Prof Practice I (2 Credits)

Learners will be engaged in a first-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5031 - Foundations in Prevention, Advocacy and Prof Practice II (2 Credits)

Learners will be engaged in a first-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5050 - Clinical Experiences I (4 Credits)

Learners will be engaged in a preparatory course that provides a fundamental orientation to the clinical environment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5051 - Community Clinic I (2 Credits)

Clinical experience designed to give the student an introduction to ambulatory medicine and an understanding of pediatric and family practice medicine.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5911 - Pediatric Critical and Acute Care --1st year (2 Credits)

Clinical experience designed to give the student an introduction to pediatric critical and acute care and pediatric inpatient medicine. Students must complete application process and be accepted before enrollment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5944 - Care of Hospitalized Adults - 1st Year (2 Credits)

Clinical experience designed to give the student an introduction to hospitalized adult inpatient medicine. Students must complete application process and be accepted before enrollment.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 5951 - CHA/PA Independent Study I - 1st year (1 Credit)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member.

Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 16 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 5952 - CHA/PA Independent Study II - 1st Year (2 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member.

Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 32 hours during the semester they are enrolled. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 5953 - CHA/PA Independent Study III - 1st Year (3 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member.

Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 48 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 5983 - Global Health Track Elective I - 1st Year (1 Credit)

Learners are immersed in a first-year interprofessional course that brings an international lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5984 - Global Health Track Elective II - 1st Year (1 Credit)

Learners are immersed in a first-year interprofessional course that brings an international lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor. This course is a continuation of MPAS 5983.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 5985 - Rural Health Track Elective I - 1st Year (1 Credit)

Learners are immersed in a first-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Restriction: Restricted to CHA/PA Students enrolled in Track; Must receive approval from Associate Director of Curriculum.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 5986 - Rural Health Track Elective II - 1st year (1 Credit)

Learners are immersed in a first-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. This course is a continuation of MPAS 5985. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 6001 - Hematology, Infection, Inflammation and Malignancy II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with hematologic, infection, inflammation and malignancy conditions.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6002 - Gastrointestinal, Genitourinary, and Renal II (5 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with gastrointestinal, genitourinary and renal conditions. Restriction: MPAS majors only

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6003 - Cardiovascular and Pulmonary II (5 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with cardiovascular and pulmonary conditions. Prereq: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6004 - Dermatology and HEENT II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with dermatologic, head, ears, eyes, nose and throat conditions. Prerequisite: MPAS majors only

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6005 - Musculoskeletal and Neurology II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for presenting with musculoskeletal and neurologic conditions. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6006 - Endocrinology and Reproduction II (4 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for presenting with endocrine and reproductive conditions. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6007 - Psychiatry II (3 Credits)

Learners will be immersed in a second-year integrated learning environment applying advanced principles of clinical medicine necessary for a primary care provider to care for patients presenting with psychiatric and behavioral health conditions. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6020 - Clinical Skills III (3 Credits)

Learners will be engaged in a second-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6021 - Clinical Skills IV (3 Credits)

Learners will be engaged in a second-year longitudinal learning experience to facilitate the development of various clinical skills through discussion and simulation. This is a continuation of MPAS 6020.

Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6030 - Foundations in Prevention, Advocacy and Prof Practice III (2 Credits)

Learners will be engaged in a second-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

MPAS 6031 - Foundations in Prevention, Advocacy and Prof Practice IV (2 Credits)

Learners will be engaged in a second-year longitudinal learning experience dedicated to role development of a practitioner who cares for patients across the lifespan including professionalism, advocacy, preventative medicine and patient wellness.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

MPAS 6051 - Community Clinic I (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6052 - Community Clinic II (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6053 - Community Clinic III (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6054 - Community Clinic IV (2 Credits)

Students will learn clinical skills in a variety of settings. Skills will include history taking, physical diagnosis, assessment and patient management under the supervision of community clinical preceptors.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6612 - Pediatric Critical and Acute Care —2nd year (2 Credits)

Students will develop assessment and patient management skills in care of pediatric patients in critical and acute care and inpatient settings.

Restricted to CHA/PA students who have completed MPAS 5911.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6640 - Emergency Medicine Preceptorship (2 Credits)

Students will develop assessment and patient management skills in care of patients in emergency medicine settings. Restrictions: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6644 - Care of Hospitalized Adults - 2nd Year (4 Credits)

Students will develop assessment and patient management skills in care of adult patients in an inpatient setting. Restricted to CHA/PA students who have completed MPAS 5944.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6651 - CHA/PA Independent Study I - 2nd Year (1 Credit)

Approval is required by the CHA/PA Program. This course is offered to those students that are pursuing an independent course of study for 16 hours during the semester they are enrolled. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6652 - CHA/PA Independent Study II - 2nd Year (2 Credits)

Approval is required by the Associate Director of Curriculum. This course is offered to those students that are pursuing an independent course of study for 32 hours during the semester they are enrolled. Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6653 - CHA/PA Independent Study III - 2nd Year (3 Credits)

Approval is required by the CHA/PA Program. This course is offered to those students that are pursuing an independent course of study for 48 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6670 - Women's Health Preceptorship (2 Credits)

Students will develop assessment and patient management skills in women's health under the supervision of community clinical preceptors. Restrictions: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6671 - Guatemala Clinical Immersion Experience I (2 Credits)

Two-week Spanish language immersion experience followed by a two-week primary care clinic experience in the country of Guatemala. Approval must be given by the CHA/PA Course Director prior to enrollment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Summer.

MPAS 6672 - Guatemala Immersion I for Global Health Track (2 Credits)

Two-week Spanish language immersion experience followed by a two-week clinic experience in the country of Guatemala for fulfillment of Global Health Track requirements. Approval must be given by the CHA/PA Course Director and CHA/PA Program Global Health Track Faculty Advisor prior to enrollment.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Summer.

MPAS 6675 - Rural Health Track Elective I - 2nd Year (1 Credit)

Learners are immersed in a second-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6676 - Rural Health Track Elective II - 2nd Year (1 Credit)

Learners are immersed in a second-year integrated learning environment that brings a rural lens to their professional studies. Registration is restricted to those students enrolled in authorized Track. This course is a continuation of MPAS 6675. Restriction: MPAS majors only.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Spring.

MPAS 6905 - Surgery (4 Credits)

The course involves active participation in a surgical setting with exposure to patients across the lifespan. The student will have exposure to patients requiring pre-operative, intra-operative and post-operative care for acute, chronic, or emergent conditions. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6913 - Pediatric Critical and Acute Care—3rd year (4 Credits)

The course involves active participation in an inpatient pediatric intensive care unit (PICU) setting at Children's Hospital Colorado. The student will be exposed to infants, children and adolescents requiring acute, chronic, and emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restricted to CHA/PA students who have completed 6613.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6920 - Neonatology (4 Credits)

This course involves active participation in the care of neonates in a teaching hospital. Attendance at morning rounds, making case presentations and participating in the night and weekend call schedule are required. Students are encouraged to attend deliveries and perform circumcisions and other procedures with appropriate supervision.

Restrictions: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6930 - Primary Care I (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 43.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6932 - Academic Inpatient Pediatric Medicine (4 Credits)

The course involves active participation in an inpatient hospital setting with exposure to infants, children, and adolescents. The student will have exposure to patients requiring acute, chronic, or emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restriction: Restricted to CHA/PA students.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6936 - Pediatric Elective II - Four Week Rotation (Sec I, II, III, IV) (4 Credits)

The course involves active participation in a general or specialty pediatric practice in an outpatient, surgical and/or inpatient facility. The student will be exposed to infants, children and adolescents requiring acute, chronic, emergent and/or preventative care, with potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 43.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6938 - Adolescent Medicine (4 Credits)

The course involves active participation in an adolescent medicine practice in an outpatient or inpatient setting. The student will be exposed to adolescents and young adults requiring acute, chronic, emergent and/or preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6940 - Primary Care II (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6942 - Inpatient Adult Medicine (4 Credits)

The course involves active participation in an inpatient hospital practice. The student will be exposed to adults and elderly requiring acute, chronic, emergent and/or preventative care while hospitalized. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6944 - Care of Hospitalized Adults - 3rd Year (4 Credits)

The course involves active participation in an inpatient setting at University of Colorado Hospital. The student will be exposed to adults and elderly requiring acute, chronic, and emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required. Restricted to CHA/PA students who have completed 6644.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6947 - Primary Care III (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6948 - Emergency Medicine (4 Credits)

The course involves active participation in an emergency room setting with exposure to patients across the lifespan. The student will have exposure to patients requiring acute, chronic, or emergent care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6952 - Rural Community Medicine (Sec I, II, III) (4 Credits)

The course involves active participation in a rurally located medical practice with exposure to patients across the lifespan. The student may have exposure to patients requiring acute, chronic, emergent, and preventative care in ambulatory, home, inpatient and/or skilled nursing settings. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend hours may be required. Registration is restricted to those students enrolled in authorized Track. Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6970 - Adult Elective II - 4-week Rotation (Sec I, II, III, IV) (4 Credits)

The course involves active participation in a general or specialty adult practice in an outpatient, surgical and/or inpatient facility. The student will be exposed to adults and the elderly requiring acute, chronic, emergent and/or preventative care, with potential for exposure to behavioral and/or mental health conditions as well. Participation in night and weekend call and attendance at meetings and conferences may be required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 4.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6971 - Guatemala Clinical Immersion Experience II (4 Credits)

The course involves active participation in an elective global health experience in Guatemala. The student will be exposed to care of patients across the lifespan with health disparities and global influences. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend call may be required. Permission must be given from the CHA/PA Program Course Director.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6972 - Guatemala Immersion II for Global Health Track (4 Credits)

The course involves active participation in an elective global health experience in Guatemala. The student will be exposed to care of patients across the lifespan with health disparities and global influences. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend call may be required. Registration is restricted to those students enrolled in authorized Track. Permission must be given from a CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6974 - Primary Care IV (4 Credits)

The course involves active participation in an ambulatory or hospital-based primary care practice with exposure to patients and caregivers across the lifespan, including pediatric, adolescent, women of child-bearing age, adult, and geriatric patients. The student will have exposure to patients requiring acute, chronic, emergent, and preventative care. There is potential for exposure to behavioral and/or mental health conditions as well. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6975 - Behavioral & Mental Health (4 Credits)

The course involves active participation in a behavioral health/psychiatry practice in an outpatient, emergency, or inpatient facility. The student may be exposed to children, adolescents, adults, and elderly requiring acute, chronic, or emergent management of mental health conditions. Participating in night and weekend hours may be required.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6978 - Clinical Connections I (1 Credit)

The course provides additional preparation to students for their clinical careers after graduation, including discussions and presentations related to licensure, credentialing, and medico-legal topics. Students will complete their capstone project within this course.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6979 - Clinical Connections II (1 Credit)

The course provides additional preparation to students for their clinical careers after graduation, including discussions and presentations related to licensure, credentialing, and medico-legal topics. Students will complete their capstone project within this course. This course is a continuation of MPAS 6978.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

MPAS 6983 - Global Health Track Elective I - 3rd Year (4 Credits)

The course involves active participation in an elective global health experience in Tanzania. The student will be exposed to care of patients across the lifespan with health disparities and global influences. There is potential for exposure to behavioral and/or mental health conditions as well. Night and weekend call may be required. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6985 - Global Health & Disasters (2 Credits)

This course prepares its participants for international experiences and future global health work. This is an interactive training course which incorporates readings, lectures, small group problem based learning exercises, technical skill sessions and a disaster simulation exercise. Registration is restricted to those students enrolled in authorized Track. Permission must be given from the CHA/PA Program Global Health Track Faculty Advisor.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall.

MPAS 6991 - CHA/PA Independent Study I - 3rd year (1 Credit)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 16 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6992 - CHA/PA Independent Study II - 3rd Year (2 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 32 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

MPAS 6993 - CHA/PA Independent Study III - 3rd Year (3 Credits)

This course provides students with an opportunity to pursue additional study and learning content under guidance of a faculty member. Instructor approval is required. This course is offered to those students that are pursuing an independent course of study for 48 hours during the semester they are enrolled.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 3.

A- MPAS Majors Only

Typically Offered: Fall, Spring, Summer.

Multidisciplinary Geriatrics (GERI)

GERI 6810 - Foundations in Geriatrics (2.5 Credits)

This course is designed for health professions graduate students who seek to obtain multidisciplinary knowledge of the aging process. The content provides an overview of the biological, psychological, and social dimensions of aging as they relate to best practices in geriatric healthcare.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6811 - Foundations in Geriatrics - 2 (2.5 Credits)

This course is designed for health professions graduate students who seek to obtain multidisciplinary knowledge of the aging process. The content provides an overview of the biological, psychological, and social dimensions of aging as they relate to best practices in geriatric healthcare.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6820 - Mini-Clinical Rotations (1 Credit)

This course is designed to provide health professions graduate students with knowledge of current diagnostic and treatment approaches appropriate for aging patients within a multidisciplinary environment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6821 - Mini-Clinical Rotations - 2 (1 Credit)

This course is designed to provide health professions graduate students with knowledge of current diagnostic and treatment approaches appropriate for aging patients within a multidisciplinary environment.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6830 - Quality Improvement Learning Project (4 Credits)

This course is designed to empower health professions graduate students to lead Age-Friendly Health System transformation. The course will consider research findings and relevant evidence in a clinical geriatrics topic and guide students in a systematic approach to completing a Quality Improvement project, resulting in a scholarly product.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

GERI 6840 - Independent Study (1 Credit)

This course is designed to provide health professions graduate students with an opportunity to enhance their knowledge and clinical understanding of aging and/or to explore an area of interest related to gerontological research in depth.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

Natural Resources Recreation & Tourism (NRRT)

NRRT 6650 - Survey Research and Analysis (3 Credits)

Survey research, design and analysis in human dimensions of natural resources.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Neurology (NEUR)

NEUR 8000 - Neurology Acting Internships (8 Credits)

This acting-internship offers students advanced neurologic clinical experience in a structured teaching setting. The primary objectives for this rotation are to learn how to effectively manage neurologic patients in an inpatient setting, gain experience in neurologic examinations and learn the basis of neuroanatomy and neurologic differential diagnosis. Inpatient Neurology will provide the core clinical experience for this rotation.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

NEUR 8001 - Neurology Elective (8 Credits)

This elective offers students further clinical experience with patients who have neurologic disorders. Students can rotate on either the inpatient service or a mix of ambulatory clinics and inpatient services at University of Colorado Hospital.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

NEUR 8100 - NEUR Elective Away (4-8 Credits)

This Neurology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

NEUR 8600 - Research in Neurology (4-24 Credits)

2-12 wks. For further course information, contact the Chairman, Donald Gilden, M.D., 303-724-4326. Prereq: Offered with Chairman's approval only. The student must receive approval from the Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Neuroscience (NRSC)

NRSC 6210 - Translational Research - Alzheimer's Disease/Dementias (4 Credits)

The course will facilitate a solid understanding of translational research in Alzheimer's Disease and Alzheimer's Disease Related Dementias, including neuropsychological and neuropathological disease features, genetic risk factors, biomarkers and brain imaging tools, statistical analyses, therapeutical approaches and clinical trial design.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

NRSC 7501 - Introduction to Neuroscience (1 Credit)

Introduction to study of the nervous system from the level of the brain to an understanding of how neurons are specialized for communication and information processing. This course is a prerequisite for NRSC 7600 series courses.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

NRSC 7600 - Cellular & Molecular Biology (3 Credits)

A comprehensive, in-depth, discussion-based course intended for candidates for the Ph.D. in Neuroscience. Topics include ion channel structure and function, ionic basis of the resting and action potential, and the biochemistry and physiology of direct and synaptic transmission.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

NRSC 7610 - Fundamentals of Neurobiology (3 Credits)

This course will provide basic knowledge on the structure and function of the nervous system. The lectures will be supplemented by discussion of primary research literature in neurobiology. Prereq: NRSC 7600 or equivalent at the discretion of the instructors.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

NRSC 7612 - Nervous System Modeling with NEURON (1 Credit)

The objective of this course is to introduce students to biophysically accurate modeling of single neurons and neuronal networks with NEURON simulation environment. Students will implement NEURON in a project of their choice, possibly related to their primary 'wet' research.

Grading Basis: Letter Grade

Typically Offered: Spring.

NRSC 7614 - Biological Basis of Psychiatric & Neurological Disorders (2 Credits)

This elective, for basic sciences graduate students and medical students, provides a survey of current clinical and molecular aspects of human neuropsychiatric disorders. Both movement disorders and DSMIV diagnoses will be covered. Contact Course Director for a list of topics.

Prereq: IDPT 7812 or BMGN 5000/CSBI 5001.

Grading Basis: Letter Grade

Typically Offered: Spring.

NRSC 7615 - Developmental Neurobiology (3 Credits)

This course will cover fundamental principles regarding development of the nervous system. The format of the course will consist of lecture plus reading of primary literature.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

NRSC 7616 - Introduction to Biomedical Photonics (3 Credits)

The course introduces several principles of applying optical techniques to biomedical applications. Current development of biophotonic research, such as microscopy, optical coherence tomography, optical spectroscopic techniques in tissues, will be discussed. Prereq: EE 5802 Optical Engineering. Crosslisted: Electrical Engineering EE 5804.

Grading Basis: Letter Grade

Typically Offered: Spring.

NRSC 7617 - The Biophysics of Ion Channels (1 Credit)

Examination of the mechanisms of ion channel gating. Covers basic of bioelectricity, kinetic analysis of channel gating, microscopic and macroscopic gating, thermodynamics, ion channel structure, ion channel pharmacology, and channelopathies.

Grading Basis: Letter Grade

Typically Offered: Spring.

NRSC 7618 - Biology of the Eye (1 Credit)

Crosslisted with OPHT 6610 (for medical students). The objective of this course is to familiarize students with the core concepts and challenges in ophthalmology and vision research. The course integrates cutting-edge basic science with translational research and clinical advances. Pre-req: Must be a graduate student (not a medical student).

Grading Basis: Letter Grade

Typically Offered: Fall.

NRSC 7619 - Functional MRI: Brain Imaging from Design to Analysis (1 Credit)

This course focuses on learning about functional and structural magnetic resonance brain imaging (MRI) research strategies and implementation, with an emphasis on functional MRI (fMRI). Focuses of this course cover a broad range of topics to help researchers better understand how to design and implement MRI research in these modalities.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NRSC 7650 - Research in Neuroscience (1-10 Credits)

Research work in neuroscience. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

NRSC 7657 - Workshop in Advanced Programming for Neuroscientists (1 Credit)

MATLAB is an accessible programming environment that is widely used by scientists and engineers and offers powerful tools for data acquisition and data analysis. Students will develop their own MATLAB programs that are relevant to their particular line of research.

Grading Basis: Letter Grade

Typically Offered: Summer.

NRSC 7661 - Grant Proposal Writing Workshop (1 Credit)

Course is practical workshop in grant-writing culminating in a mock review panel including course participants. Students will examine various proposal types/formats, then write their own proposal in the format of NRSA fellowship application. Restriction: Students with adequate neuroscience background. Prereq: NRSC 7610.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

NRSC 7662 - Survey of Neuroscience (1 Credit)

Designed to expose first year graduate students to current topics in neuroscience.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

NRSC 7663 - Neuroscience Journal Club (1 Credit)

Biweekly journal club. NSP students in Years 2+ present articles, with presentations overseen by a faculty advisor. First year students are required to attend all journal clubs. Final grade is based upon attendance and participation at journal clubs.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring.

NRSC 7670 - Advanced Topics in Neuroscience (1-2 Credits)

This course will consist of discussion of manuscripts relevant to a specific topic in Neuroscience. Prereq: NRSC 7600 or consent of instructor.

Grading Basis: Letter Grade

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

NRSC 7671 - Neurotechnology for Neurologic and Psychiatric Conditions (1 Credit)

Neurotechnology to treat neurologic and psychiatric conditions is a rapidly growing field with ongoing innovations in technology and the understanding of how it relates to the nervous system. Examples include brain computer interface systems for movement and speech prosthesis, spinal cord stimulation for pain and to restore movement in patients with spinal cord injury, vagus nerve stimulation to drive physical rehabilitation following stroke and deep brain stimulation and targeted magnetic stimulation to treat depression. Weeks will alternate between lecture-based sessions and student-led paper discussions. Join us to explore how devices can treat and pair the body and brain!

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NRSC 7675 - Neuroscience, Ethics, & Philosophy (1 Credit)

Elective course provides overview of issues at the intersection of philosophy/ethics/neuroscience. Format involves lecture, student presentations, and relies heavily on student discussion. Topics focus on arguments relevant to the philosophy of mind along with their implications for the individual /society. Prereq: Successful completion of first year graduate courses.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

NRSC 7700 - Drugs and the Brain (1 Credit)

This graduate level course, Drugs and the Brain, will introduce students to the field of addiction. The focus will be on how different drugs of abuse work on brain cells and systems to produce their unique physiological and behavioral consequences.

Grading Basis: Letter Grade

Typically Offered: Spring.

NRSC 7800 - Teaching Neuroscience (1-3 Credits)

Students will be guided in developing two class sessions in systems neuroscience to be presented in the Systems Neuroscience course, NRSC 7610. Each session will include a practice presentation and post-mortem critique. Prereq: NRSC 7610. Restrictions: Second year students in neuroscience or above. Note: Meets 1 - 3 hours a week for 15 weeks depending on credits signed up for.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

NRSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in neuroscience. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Neurosurgery (NSUR)

NSUR 8014 - Advanced Neurosurgery (4-12 Credits)

2-6 wks. Max:8. This course can meet Sub-I qualifications. Intensive rotation emphasizing care and management of neurosurgical patients, with close patient responsibility. Weekly conferences and lectures required and students must present a case with topic discussion.

Recommended for students with interests in neurosurgery, neurology, emergency medicine and trauma surgery.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

NSUR 8100 - NSUR Elective Away (4-8 Credits)

This Neurosurgery elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered for 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

NSUR 8600 - Research in Neurosurgery (4-24 Credits)

2-12 wks. A written evaluation must be sent to Dr. Michael Handler and Lauren Buckles. Prereq: Departmental approval must be obtained and all arrangements made at least one month in advance.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

NSUR 8630 - NSUR Research Away (4-24 Credits)

This Neurosurgery research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Course offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

Nursing (NURS)

NURS 3004 - Rural and Indigenous Health Perspectives (0.5 Credits)

This course provides an overview of the unique health care needs of rural and Indigenous populations. Students will engage in learning activities that foster cultural awareness and cultural humility.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 3023 - Patient-Centered Health Assessment (2.5 Credits)

Focus on knowledge, skills and attitudes needed for patient-centered assessment utilized in nursing practice. Evidence-based assessment skills acquired in the skills and simulation laboratory. Didactic content presented using case studies and multiple learning strategies.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.5.

Typically Offered: Fall, Spring, Summer.

NURS 3034 - Foundations of Nursing Practice (4 Credits)

Students investigate the relationship between theory and evidence-based practice to develop the foundations of a generalist nurse. Critical thinking, clinical judgement, and communication strategies are emphasized.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

NURS 3080 - Nursing Research and Evidence-Based Practice (3 Credits)

This course will critically evaluate research and clinical expertise to determine optimal patient care utilizing professional writing.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

NURS 3140 - Pathophysiology for Nurses (3 Credits)

Course will focus on essential concepts underlying pathophysiology and how they pertain to specific body systems. Principles of genetics, environment, cellular biology/adaptation, and immunity will be emphasized to facilitate understanding of exemplar disease processes across major human organ systems.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

NURS 3150 - Pharmacology for Nurses (3 Credits)

Focus on essential knowledge and attitudes for beginning nursing practice using pharmaceutical agents. Emphasis on integrating knowledge from other foundational courses to learn safe medication practices using a body systems and drug families approach with evidence based foundations.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

NURS 3216 - NURS Honors Seminar I (1 Credit)

Study of topics relevant to development of the senior thesis proposal and broader discussions and readings related to ethical and leadership roles in the profession of nursing. It is the first in a series of two, junior level Honors Seminars. Prerequisites: Junior level standing in the College of Nursing; enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3226 - NURS Honors Seminar II (1 Credit)

Study of topics relevant to development of the senior thesis proposal and broader discussions and readings related to ethical and leadership roles in the profession of nursing. It is the second in a series of two junior level Honors Seminars. Prerequisites: Junior level standing in the College of Nursing; completion of Honors Seminar I; enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3267 - Health Promotion (2 Credits)

Course explores health promotion and disease prevention in individuals, families, and populations across the lifespan. Determinants of health, health disparities, and levels of prevention are introduced. Cultural awareness, models/theories to promote health, and evidence based strategies are applied.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3337 - Nursing Care of Childbearing Families (5 Credits)

Integrates family-centered care, evidence-based practice, safety, teamwork and collaboration, informatics, and quality with emphasis on application of the concepts of health promotion, development, and transitions inherent with childbearing. Prerequisite: Admission to the BS program, successful completion of all beginning level courses.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3447 - Nursing Care of Children and Families (5 Credits)

Students learn to provide nursing care to children and families by integrating the principles of family-centered care, evidence-based practice, quality and safety, teamwork and collaboration, informatics, genetics, emphasizing health promotion, child development, disability, and transition into the community.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3567 - Mental Health Nursing Practice across the Lifespan (5 Credits)

Focuses on intermediate level of application of knowledge, skills and attitudes of nursing care for patients with mental health issues. Students provide person-centered nursing care to individuals and groups with alterations in mood, cognition, and behaviors with their families across the lifespan and continuum of care. Department Consent Required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall, Spring, Summer.

NURS 3617 - Medical-Surgical Nursing Practice I (6.8 Credits)

Beginning level course focuses on applying pathophysiology, pharmacology and nursing assessment in providing care to individuals in a variety of environments. Students will learn foundational aspects of quality and safety competencies. Simulation will allow the beginning learner to apply knowledge and work on skill acquisition.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.8.

Typically Offered: Fall, Spring, Summer.

NURS 3667 - Nursing Care of the Older Adult (2 Credits)

Students build upon previous knowledge, skills, and attitudes to learn how to provide nursing care for a demographically large and diverse population of older adults. Areas examined include: polypharmacy, chronic conditions, physiologic changes, myths, stereotypes, and culturally diverse life experiences.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 3727 - Clinical Progression (2 Credits)

Clinical remediation is a required review of clinical competencies and professional role behaviors following interruption in the baccalaureate nursing program. an individualized learning contract will be developed. Demonstration of current competencies for safe care is required for continued progression. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 3880 - Nursing Role and Practice (2 Credits)

Learners explore the professional nurses' role in evolving healthcare systems. Context of learning is nursing history, theory, practice standards, issues and trends. Emphasis is futuristic for projections of professional nursing practice and effective teamwork. Foundational legal matters are interwoven throughout.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 4064 - Interprofessional Collaborative Practice (1 Credit)

This course develops core competencies in teamwork and collaboration for incoming health professions students. Students will learn in interprofessional teams coached by interprofessional faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Spring.

NURS 4074 - Inter-professional Healthcare Ethics & Health Equity (1 Credit)

This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice through inter-professional collaboration and teamwork.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Fall.

NURS 4080 - Professional Nursing: Transition into the Role (4 Credits)

Learners explore the professional nurses' role. Context for learning is nursing history, theory, practice standards, ethical-legal parameters, including emerging issues and trends. Emphasis is on student preparation for transitioning into the professional role with its independent, interdependent, and collaborative functions.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

NURS 4236 - NURS Honors Seminar III (1 Credit)

Topics are relevant to the senior thesis and students' career development as leaders in nursing. Seminars provide opportunity for students to share progress and insights with peers and to engage in topical discussions. First of two senior level Honors Seminars. Prerequisites: Senior level standing in the College of Nursing; completion of Honors Seminars I (NURS 3216) and II (NURS 3226); enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4246 - NURS Honors Seminar IV (1 Credit)

Topics are relevant to the senior thesis and students' career development as leaders in nursing. Seminars provide opportunity for students to share progress and insights with peers and to engage in topical discussions. Second of two senior level Honors Seminars. Prerequisites: Senior level standing in the College of Nursing; completion of Honors Seminars I (NURS 3216), II (NURS 3226) and III (NURS 4236); enrolled in Honors Program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4617 - Nursing Care of the Adult Patient with Complex Care Needs (6.7 Credits)

Building on concepts from previous coursework, apply theory, client-centered and evidence-based principles to comprehensive care for complex adult patients in acute care settings. Prerequisite: Successful completion of beginning and intermediate courses.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4727 - Independent Study (1-3 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

NURS 4777 - Community & Population Focused Nursing (5.5 Credits)

Course focuses on community-oriented & population-focused nursing practice. Using evidence-based practice & public health concepts; students assess, plan, implement, and evaluate health interventions to individuals, families, and populations. Emphasis is on environment, social justice, advocacy, interprofessional teamwork, and cultural awareness. Prerequisite: Admission to the BS program. Successful completion of beginning and intermediate Nursing courses.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.5.

Typically Offered: Fall, Spring, Summer.

NURS 4800 - Evidenced-Based Nursing Practice & Research for the RN (4 Credits)

Course introduces research processes and application in EBP. RN students learn to critically evaluate research findings for application in safe, quality nursing practice. Nursing theories and ways of knowing are explored regarding their impact on development of nursing science.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4824 - Professional Nursing Role Development - RN (4 Credits)

This course explores the influence of historical/philosophical foundations, issues, and future trends on professional practice and role development in RN-BS nursing education. Examines ethical decision-making, critical thinking, reflective practice, and accountability within the ethical and legal parameters of nursing practice. Prerequisite: Successful completion of all courses in the student's chosen sequenced program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring, Summer.

NURS 4850 - Introduction to Health Care Informatics - RN (3 Credits)

Understand and apply knowledge and skills in information and communication technologies to enhance the delivery of quality patient care. Concepts of data, information, knowledge and wisdom, to inform care delivery are examined. Professional roles and responsibilities will be explored.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4860 - Quality, Safety, & Innovative Nursing Practice-RN (4 Credits)

Understand and apply QSEN knowledge, skills, and attitudes to improve and evaluate care delivery within a health care microsystem. Concepts and processes of quality improvement based on evidence are identified. Teamwork/communication/collaboration and transitions of care are explored.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4877 - Population-Based Nursing - RN (6 Credits)

Course focuses on the professional nursing role in population-focused health promotion, disease prevention, and the continuum of care.

Theories, concepts, and social determinants of health inherent in population-based nursing and transitions of care are explored through course work and practicum.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4887 - Nursing Leadership in Complex Organizations I (4 Credits)

This course provides the foundation needed to provide oversight and accountability for care delivery across a variety of settings; continuing development as a leader/innovator in improving patient care; and a solid understanding of health care policy, economics, and complex organizations.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4897 - Nursing Leadership in Complex Organizations II (5 Credits)

Explores nursing leadership roles in promoting positive patient outcomes. Uses evidence-based practice to facilitate clinical reasoning/inquiry in providing safe, quality, person-centered care. Professional development is promoted through transformational leadership & management competencies. Includes capstone quality improvement project.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 4917 - Immersion in Clinical Nursing (8 Credits)

Learning emphasizes synthesis of previous coursework/knowledge for transition to professional BS graduate nurse role. Through clinical immersion experiences, development of independent nursing practice, skills for safe, cost-effective, evidence-based clinical decision making & guided application of leadership & management theory & skills occurs.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5899 - Advanced Practicum (1-6 Credits)

Clinical course that focuses on demonstrating competence in the Advanced Practice role with a selected population.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

NURS 5901 - AG CNS Advanced Practicum I (1-3 Credits)

Clinical Nurse Specialist students begin to gather and organize data to base clinical decisions upon and promote moral agency. Students begin to advocate for patient and family health outcomes. Consultation and collaboration with an interdisciplinary team is emphasized. Prerequisite: NURS 6243; Co-requisite: NURS 6222, 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5902 - AG CNS Advanced Practicum II (1-3 Credits)

Clinical Nurse Specialist students demonstrate clinical decision making, refine diagnoses, and explore the role to influence of health systems change. Advocacy and moral agency for patient and family health outcomes continues. Consultation and collaboration with an interdisciplinary team are demonstrated. Prerequisite: NURS 6243; Co-requisite: NURS 6222, NURS 6761, NURS 5901

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5903 - AG CNS Advanced Practicum III (1-3 Credits)

Clinical Nurse Specialist students adapt clinical decisions to manage ill and aging patients. Students advocate for advancing patient and family health outcomes. Advocacy and moral agency for health outcomes are incorporated into consultation and collaboration with an interdisciplinary teamwork. Prerequisite: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5902

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5904 - AG CNS Advanced Practicum IV (1-3 Credits)

Clinical Nurse Specialist students formulate clinical decisions to manage ill and aging patients and patient and family health outcomes. Students practice as moral agents and are expected to manage health systems initiatives in consultation and collaboration with an interdisciplinary team. Prerequisite: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5903

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5911 - PNP Advanced Practicum I (3 Credits)

Primary Care Pediatric Nurse Practitioner students begin to provide direct patient care, health screenings, and organize data for clinical decisions. Students work with patients and families to establish health goals. An Interdisciplinary approach is emphasized in clinical and classroom settings. Pre-requisites: NURS 6243, NURS 6222, NURS 6761, co-requisite NURS 6478

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5912 - PNP Advanced Practicum II (3 Credits)

Advanced beginner Primary Care Pediatric Nurse Practitioner students provide direct patient care, health screenings, and organize data for clinical decisions. Students begin to demonstrate interdisciplinary leadership and clinical decision making while working with patients and families to cultivate health goals. Requisite: NURS 5911, NURS 6478

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5913 - PNP Practicum III (3 Credits)

Primary Care Pediatric Nurse Practitioner students provide direct patient care and integrate patient data to provide well child care and manage acute and chronic conditions. Interdisciplinary care coordination is emphasized to assist patients and families to meet health goals.

NURS 5911, NURS 5912, NURS 6478 Co-req: NURS 6488

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5914 - PNP Advanced Practicum IV (3 Credits)

Primary Care Pediatric Nurse Practitioner students become competent at making clinical decisions for well child care, acute and chronic conditions, manage primary pediatric nursing care initiatives, and lead interdisciplinary teams to partner with patients and families to meet health goals. prereq: NURS 6478, NURS 6488, NURS 5911, NURS 5912, NURS 5913 co-req: NURS 6496

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5921 - AC-PNP Practicum I (2 Credits)

Acute Care Pediatric Nurse Practitioner students begin to provide direct patient care and gather and organize data for clinical decisions. Students will work with stable patients and families in primary care oriented settings. An interdisciplinary approach is emphasized. NURS 6243, NURS 6222, NURS 6761, NURS 6450; co-requisites: NURS 6450, NURS 6490

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5922 - AC PNP Advanced Practicum II (2 Credits)

Acute Care Pediatric Nurse Practitioner students provide direct patient care and utilize patient and diagnostic assessment data to make clinical decisions. Students begin to demonstrate interdisciplinary collaboration when working with patients and families to support health outcomes.

Prerequisite: NURS 5921 Co-requisite: NURS 6456

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5923 - AC PNP Advanced Practicum III (3 Credits)

Acute Care Pediatric Nurse Practitioner students provide direct patient care and integrate patient data to manage and support health outcomes for acute, complex, and chronic pediatric patients. Interdisciplinary care coordination across the continuum is emphasized.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5924 - AC-PNP Practicum IV (3 Credits)

Acute Care Pediatric Nurse Practitioner students become competent at making clinical decisions for acute, complex, critical, and chronic conditions; use independent and collaborative decision making as members of interdisciplinary teams; and assist patients and families with navigating healthcare systems. NURS 5923; Co-requisite NURS 6510

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5925 - AC PNP Advanced Practicum V (3 Credits)

Acute Care Pediatric Nurse Practitioner students evaluate and adapt therapeutic interventions, provide direct management for stable and unstable acute, complex, critical and chronic conditions; and advocate for improved patient/family outcomes through leadership on interdisciplinary teams and/or nursing initiatives. Prerequisite: NURS 5924 Co-requisite: NURS 6520

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5931 - FNP Practicum I (3 Credits)

Family Nurse Practitioner students begin to provide direct patient care, physical and behavioral health screenings, and work with patients and their families to establish health and wellness goals. An interdisciplinary approach is emphasized in the clinical and classroom setting. Pre-req: NURS 6761, NURS 6222, NURS 6243

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5932 - FNP Practicum II (3 Credits)

Family Nurse Practitioner students provide direct patient care through refining differential diagnoses based on available patient data. Students begin to demonstrate interdisciplinary leadership and clinical decision making while working with patients and their families to cultivate health and wellness goals. Pre-req: NURS 5931

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5933 - FNP Practicum III (4 Credits)

Family Nurse Practitioner students provide direct patient care through integrating available physical and behavioral patient data into the management of acute and chronic conditions. Interdisciplinary care coordination is emphasized to assist patients and families to meet health and wellness goals. Pre-requisite: NURS 5931, NURS 5932

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5934 - FNP Practicum IV (4 Credits)

Family Nurse Practitioner students make clinical decisions for acute and chronic conditions, manage primary nursing care initiatives, and lead interdisciplinary teams to partner with patients and families to meet health and wellness goals. Pre-Req: NURS 5931, NURS 5932, NURS 5933

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5941 - NMW Advanced Practicum I (4 Credits)

This clinical course is designed to apply knowledge attained from didactic coursework in GYN and Care of the Childbearing Family I and develop skills and attitudes necessary to successfully manage the midwifery care of women in the outpatient setting. Prerequisite: NURS 6204, NURS 6344

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 5942 - NMW Advanced Practicum II (4 Credits)

Clinical course designed to apply knowledge attained from Care of the Childbearing Family II and Primary Care of Women and develop skills and attitudes necessary to manage the midwifery care of women and newborns in the inpatient and outpatient settings. Prerequisite: NURS 5941

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 5943 - NMW Advanced Practicum III: Integration (8 Credits)

Culminating clinical experience of the 3-semester sequence of clinical courses. This experience combines all areas of the Core Competencies in full-time clinical participation. Prerequisite: NURS 5941, NURS 5942

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5961 - WHNP Advanced Practicum I (4 Credits)

This clinical course is designed to apply knowledge attained from didactic coursework and develop skills and attitudes necessary to successfully manage reproductive health in the outpatient environment. The student must meet the competency of each expected outcome by the end of 180 clinical hours.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 5962 - WHNP Advanced Practicum II (4 Credits)

This clinical course is designed to apply knowledge attained from didactic coursework and develop skills and attitudes necessary to successfully manage reproductive/ sexual health in the ambulatory care environment. Pre: NURS 5961, Co-requisite: NURS 5963

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5963 - WHNP Advanced Practicum III (6 Credits)

This clinical course combines all competency domains and synthesizes knowledge attained from didactic course work and previous clinicals skills and attitudes into the culminating clinical experience of competently managing reproductive, sexual health & primary care in the ambulatory setting. Coreq: NURS 5962

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5964 - WHNP Advanced Practicum IV (4 Credits)

Culminating clinical experiences of the Women's Health Nurse Practitioner Program, this experience combines all areas of core competencies and in consultation with the preceptor. Pre: NURS 5963

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 5971 - AGPCNP Practicum I (3 Credits)

Clinical course that refine competencies as an Advanced Practitioner with a selected client population. The student must achieve a minimum of competency demonstrated 10 outcome areas by the end of 135 cumulative hours. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5972 - AGPCNP Practicum II (3 Credits)

Clinical course that refines competencies as an Advanced Practitioner with a selected client population, 19 outcomes are assessed. A minimum competency must be demonstrated in each outcome area by the end of 135 course clinical hours and cumulatively 270 hrs. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5973 - AGPCNP Practicum III (3 Credits)

Clinical course to refine competencies as an Advanced Practitioner with a selected client population. 23 outcomes are assessed. Student achievement of "at expected level" for each outcome area demonstrated by the end of 135 clinical hours and cumulatively 405 hrs. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5974 - AGPCNP Practicum IV (3 Credits)

Clinical course to refine competencies as an Advanced Practitioner with a selected client population. 24 outcomes are assessed. Student achievement of "at expected level" for each outcome area demonstrated by the end of 135 clinical hours and cumulatively 540 hrs. Pre-requisite: AG-PCNP Adult Gerontology Primary Care Nurse Practitioner Program NURS5971-5974 (revising clinical courses previously NURS6755, 6756, 6757, 6758)

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 5981 - AGACNP Practicum I (3 Credits)

AGACNP learners develop clinical skills in patient care, focusing on assessment, diagnostic reasoning, and evidence-based interventions for acute and chronic conditions. Emphasis is on interdisciplinary collaboration and holistic care to manage diverse patient scenarios effectively. Prereq: NURS 6243, NURS 6222, NURS 6761, NURS 6590 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243, NURS 6222, NURS 6761, AND NURS 6590 with a B or better.

Typically Offered: Spring.

NURS 5982 - AGACNP Practicum II (3 Credits)

AGACNP learners advance competencies in patient-centered care, applying diagnostic data to evidence-based decisions. Emphasis is on clinical assessment, diagnostic reasoning, care coordination, and interdisciplinary collaboration, fostering holistic care for patients with acute and chronic conditions alongside families and healthcare teams. Prereq: NURS 6243, NURS 6222, NURS 6600, NURS 6761, and NURS 5981 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243, NURS 6222, NURS 6600, NURS 6761, and NURS 5981 with a B or better.

Typically Offered: Summer.

NURS 5983 - AGACNP Practicum III (4 Credits)

AGACNP learners enhance skills in managing acute and chronic conditions, focusing on interdisciplinary care coordination, clinical decision-making, and patient-centered outcomes. Emphasis is on adapting to dynamic needs and demonstrating proficiency in the acute care NP role. Prereq: NURS 6600, NURS 5982, and NURS 6620 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6600, NURS 5982, and NURS 6620 with a B or better.

Typically Offered: Fall.

NURS 5984 - AGACNP Practicum IV (4 Credits)

AGACNP learners enhance skills in managing acute and chronic conditions, focusing on interdisciplinary care coordination, clinical decision-making, and patient-centered outcomes. Emphasis is on adapting to dynamic needs and demonstrating proficiency in the acute care NP role. Prereq: NURS 6620, NURS 5983, and NURS 6610 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6620, NURS 5983, and NURS 6610 with a B or better.

Typically Offered: Spring.

NURS 5991 - PMHNP Advanced Practicum I (2 Credits)

For the PMHNP student, competencies for this level include a psychiatric evaluation and beginning skills in individual and group therapies across the lifespan. The student must meet the competency of each expected outcome by the end of 90 clinical hours. Requisite: NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5992 - PMHNP Advanced Practicum II (3 Credits)

For the PMHNP student, competencies for this level include developing shared decision-making of evidence-based psychopharmacology and enhanced communication skills in individual and group therapies across the lifespan. The student must meet all outcomes by the end of 135 clinical hours. Requisite: NURS 5991, NURS 6664

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5993 - PMHNP Advanced Practicum III (3 Credits)

For the PMHNP student, competencies for this level include adapting treatment planning, pharmacotherapies and non-pharmacotherapies to multiple populations based on evidence-based strategies and culturally sensitive relationship development. The student must meet all outcomes by the end of 135 clinical hours. Requisite NURS 5992, NURS 6664, NURS 6665

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 5994 - PMHNP Advanced Practicum IV (6 Credits)

For the PMHNP student, competencies include the management of complex treatments plans based on evidence-based pharmacological and non-pharmacological interventions for mental disorders across the lifespan and settings. The student must meet all outcomes by the end of 270 clinical hours. Requisite: NURS 5993, NURS 6664, NURS 6665

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6009 - Theory Foundation for Advanced Nursing (3 Credits)

The course provides an introduction to nursing's philosophical, ethical, and theoretical frameworks as guides for practice. Nursing theories, grand, middle-range, and ways of knowing will be analyzed. Students will develop a beginning model for practice based on their nursing philosophy.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6015 - Women & War (3 Credits)

Roles of women during war, gender specific policies, deployment considerations including reproductive & urogenital health, military sexual trauma, and psychological effects of deployment. Appraise women's experience, roles in the family, reintegration to community, and selected issues related to war-time service.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 6017 - On the Home Front: Supporting Vet & Military Families (3 Credits)

Dynamics and attributes of military/veteran families during and after military service. Explores issues of deployment, reintegration, parenting, compassion fatigue, and living with sequelae of combat stress (family violence, suicide, homelessness, PTSD) Evaluates preparation of civilian providers and family care interventions.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6018 - Home from the Battlefield: Psychological Health Care (3 Credits)

Introduction to veteran/military culture and historical perspectives of war. Exploration of post-traumatic stress disorder, traumatic brain injury, suicidality and effects of psychological health on family and parenting. Issues related to diversity, reintegration, redeployment, health care navigation and ethics.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6019 - Wounds of War: Military & Veteran Disability Evals (3 Credits)

Detailed examination of military/veteran integrated disability evaluation system including processes, policies, clinical conditions, & complex case studies. Investigate benefits associated with service-connected disabilities, special considerations for Reserve/Guard members, & assistance in preparing for disability evaluation and appeals.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 6023 - Veteran and Military Health Care Systems (3 Credits)

Sociopolitical, economic, ethical and current national health care issues confronting the veteran and military health care delivery systems. Examination of overall structure, functions, and processes, and influence of these contextual elements on policies guiding/regulating the organization/delivery of services.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6024 - Caring for Veterans: Aging, Chronicity, & End of Life (3 Credits)

Explores aging/chronicity in veteran populations, environmental exposures in military environments, and long term effects of chemical, biological, radiological, nuclear, explosive materials. Examines specific service connected conditions for veterans of Vietnam, Gulf War, and Iraq/Afghanistan and end-of-life care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6025 - Veteran and Military Health Care Admin Internship (2 Credits)

This course enables students to integrate and apply veteran and military health care competencies in an advanced nursing practice role. The preceptored internship facilitates engagement in administrative roles and empowers students to innovate in health care delivery practices.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6070 - Policy and Politics of Health (3 Credits)

Examine influence of policy on health, healthcare and nursing at local, state, national and global levels. Analyze policies in the context of sociopolitical and health performance environments. Engage in a policy meeting or interview a policymaker.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

NURS 6107 - Research & Quality Improve Methods: Principles of Evidence (3 Credits)

This course focuses on methods of knowledge generation applicable to advanced practice nursing. Quantitative and qualitative methods are presented in the context of evidence-based practice. Students will evaluate evidence from multiple sources, including research knowledge, clinical expertise, and patient preference.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6108 - Inferent Statistics & Quality Improvement Applying Evidence (3 Credits)

This intermediate research and QI methods course covers database management, descriptive statistics, correlation, prediction and regression, hypothesis testing, and analytic methods for quality improvement projects. Material is made relevant to nursing by use of actual nursing research studies as examples.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6109 - Evidence-Based Practice: Evaluating Evidence (3 Credits)

Evidence-based Practice: Evaluating Evidence integrates beginning research and statistics knowledge to guide in the development of PICOT questions to address health priority issues. Skills in finding, appraising, and synthesizing evidence to improve quality, safety and cost-effectiveness of patient care

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6222 - Adv Pharm & Therapeutics (3 Credits)

The student will be developing essential knowledge and competencies for advanced practice nurses to evaluate and apply advanced pharmacological principles, optimize therapeutic regimens, and apply considerations for different populations and social determinants of health to ensure safe, evidence-based medication use across patient lifespans. Prereq: NURS 6243 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243 with a B or better.

Typically Offered: Spring, Summer.

NURS 6243 - Adv Pathophysiology (3 Credits)

Advanced concepts of the dynamic aspects of disease processes provide a foundation for the assessment and management of acutely or chronically ill clients. Epidemiology, etiology, genetics, immunology, lifespan and cultural concepts, diagnostic reasoning, and current research findings are integrated throughout. Prereq: Graduate standing or permission of instructor.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6274 - Semantic Representation (3 Credits)

Introduces the concept of classifying nursing phenomena to facilitate data management and retrieval. Topics include: minimum data sets, nursing language, classification systems and vocabularies, and relates each topic to nursing practice, administration, and research.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6279 - Knowledge Management (3 Credits)

The need for knowledge discovery, distribution, and management in clinical settings is examined. Knowledge Management techniques (probabilistic/ statistical models, machine learning, data mining, queuing theory, computer simulation) are examined. The specification of a knowledge management comprehensive system for healthcare is developed. Prereq: Minimum of one informatics course or permission of instructor.

Grading Basis: Letter Grade with IP

NURS 6284 - Digital Tools for Connected Health (3 Credits)

This course examines the use of digital tools to foster engagement of patients, families and consumers in their health care. This course examines the evidence and the legal, ethical, social and policy issues within the context of connected health.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6285 - HCI Design Principles (3 Credits)

Examines the relationship of interface design to effective human interaction with computers. This course examines principles, theory and models to design and evaluate optimal interfaces to promote human computer interaction in health care informatics applications. Online course skills.

Grading Basis: Letter Grade with IP

NURS 6286 - Foundations Informatics (3 Credits)

Learners critically evaluate and utilize informatics tools for evidence-based decision-making to improve the quality, safety, and efficiency of patient care, actively engage patients/consumers in their care, effectively and efficiently manage practice, and exemplify leadership behaviors in learning health systems.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6290 - Information Systems Life Cycle (3-4 Credits)

This course focuses on a structured approach to information system development and implementation in healthcare settings. The course addresses the phases of the information systems life cycle. Prereq: NURS 6286 with a B or better or permission of instructor.

Grading Basis: Letter Grade with IP

Prereq: NURS 6286 with B or better.

Typically Offered: Fall, Spring.

NURS 6293 - Database Mgmt Systems (3 Credits)

An interdisciplinary course focused on design and application challenges in database management systems. Concepts of database modeling, querying, and reporting are explored. Students apply database concepts to clinical registries and Meaningful Use queries. Prereq: NURS 6304 or permission of instructor.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6303 - Epidemiology & Health (3 Credits)

Students explore epidemiologic principles, study design, data analysis, and using evidence to inform clinical and policy decisions. Students develop competencies in risk assessment, program planning, quality improvement, and translating findings into strategies for health promotion and disease prevention. Prereq: Graduate standing or permission of instructor.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Spring, Summer.

NURS 6344 - NMW Gynecologic Care (3 Credits)

This course facilitates development of critical thinking necessary for the application of midwifery management of women for well woman gynecologic care, including routine screening and health promotion, and problem-oriented gynecologic care, including screening, diagnosis, medication management, and collaborative management or referral of women with gynecologic abnormalities. Prerequisites: NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6374 - NMW/WHNP Adv Clinical Skills - Outpatient (1 Credit)

Clinical skills and simulation course provides training in skills necessary to provide antepartum and gynecologic care, with additional instruction in working as a member of an interprofessional team.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6375 - NMW Advanced Clinical Skills - Inpatient (1 Credit)

Clinical skills and simulation course provides training in skills necessary to provide intrapartum and newborn care, with additional instruction in working as a member of an interprofessional team. NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

NURS 6376 - Reproductive Physiology (3 Credits)

This comprehensive course on human reproduction focuses on women's health, maternal, fetal, neonatal anatomy and physiology, and physiology of human lactation, with additional focus on pharmacology in pregnancy and lactation. Prerequisites: NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 6377 - Foundations of Midwifery Care (2 Credits)

Overview of the basic components of midwifery care in the United States and globally, including midwifery-specific history, philosophy, ethics, finance, scholarship, and epidemiological aspects of care for women.

Prerequisites: NURS 6009, NURS 6859

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6378 - Care of the Childbearing Family I (3 Credits)

This course facilitates development of critical thinking necessary for the advanced practice management of women during the antepartum and postpartum periods, including screening, diagnosis, collaborative management or referral of women at risk for complications.

Prerequisites: NURS 6190, NURS 6192, NURS 6344; Co-requisite NURS 5941

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6379 - Care of the Childbearing Family II (4 Credits)

Facilitates development of critical thinking and clinical reasoning necessary for nurse-midwifery management of women during the peripartum and immediate postpartum periods and the well newborn during the first 28 days of life. Prerequisites: Prerequisite: NURS 6378; Co-requisite NURS 5942

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6380 - Primary Care of Women (3 Credits)

This course facilitates development of critical thinking for midwifery/ women's health nurse practitioner management in primary care of non-pregnant persons assigned female at birth including routine screening, health promotion, diagnosis and management, collaborative management and/or referral to appropriate health care services.

Prerequisites: Advanced Pathophysiology, Advanced Pharmacology and Therapeutics, Advanced Physical Assessment, Reproductive Physiology

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6434 - FNP Care of the Pediatric Patient (3 Credits)

This course provides FNP students with evidence-based research and practice guidelines to provide acute, chronic, and behavioral health in the pediatric primary care setting. Cultural, socioeconomic, and geographic factors influencing the pediatric patient and population health outcomes will be explored. NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6450 - Advanced Pediatric Physical Assessment (1 Credit)

This course builds on previously learned physical assessment skills to prepare the pediatric nurse practitioner to conduct comprehensive and focused assessments. Critical thinking is emphasized as primary means for collecting and analyzing data obtained from the history and physical examination. Pre-requisite: NURS 6761, Co-requisite NURS 6478, NURS 5911 (PNP) or NURS 6772, NURS 5921 (PAC)

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6456 - Advance Pediatric Clinical Skills (1 Credit)

This course builds on the skills developed in the Advanced Assessment course & Advanced Pediatric Assessment Course to prepare the pediatric nurse practitioner to integrate clinical scenarios with hands-on skill performance with pediatric patients. This course is offered with a Satisfactory/Unsatisfactory grade option only. Pre: NURS 6761, Pre/Co: NURS 6450

Grading Basis: Satisfactory/Unsatisfactory

Typically Offered: Spring.

NURS 6478 - Primary Care of Children: Well Child Care (4 Credits)

The first course in the PNP curriculum focuses on well child care including advanced assessment, health promotion, disease and disability prevention, and common developmental issues. Well child care is addressed within the context of patient, family, and inter-professional teams. Pre-requisites: NURS 6222, NURS 6243, NURS 6761; Co-requisite NURS 5911

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6488 - Pediatric Minor and Acute Illness (3 Credits)

This course focuses on evidence-based approaches to diagnosing and managing minor acute illnesses from birth through adolescence. Developmental aspects of healthcare for children presenting with common biobehavioral/biophysical symptoms are addressed within the context of the patient, family, and inter-professional teams.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6490 - Pediatric Primary Care Essentials (3 Credits)

Students learn pediatric primary care with a focus on family centered approaches to well-child care and minor acute and chronic illness. Knowledge gained can be applied to the continuum of pediatric care across primary, urgent, specialty, and acute settings. Prerequisites: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5921

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6496 - Pediatric Chronic Illness and Disability (3 Credits)

The third course in the PNP curriculum focuses on assessment, diagnosis and evidence-based management of children with disabilities and chronic illness. Care for children with disabilities and chronic illness is addressed within the context of patient, family, and inter-professional teams. Requisite: NURS 6761, NURS 6222, NURS 6243, NURS 6477, NURS 6487

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

NURS 6500 - Acute Care Pediatric Nurse Practitioner I (3 Credits)

Content pertinent to the urgent, emergent, and critical care management of acute illness/traumatic injury and exacerbation of chronic illness in a systems approach. Topics include analgesia/sedation, fluid/electrolyte abnormalities, GI disorders/nutrition, cardiac and pulmonary conditions and infectious diseases. Post-Grad Certificate - certification as PNP or FNP. Coreq-NURS6756-08 minimum 1 credit. MS student prereqs-NURS 6010, NURS 6031, NURS 6222, NURS 6243, NURS 6761, NURS 6772, co-req-NURS 6755-CO8

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6510 - Acute Care Pediatric Nurse Practitioner 2 (3 Credits)

Content pertinent to the urgent, emergent, and critical care management of acute illness and the acute exacerbation of chronic illness presented in a systems approach. Systems include neurology, hematology/oncology, endocrine, metabolic, nephrology and genetics. Post-Grad Certificate - Completion of NURS 6500, minimum 2 credits NURS 6756-08. MS students pre-reqs - NURS 6761, NURS 6243; NURS 6222, NURS 6010, NURS 6031, NURS 6772. Co-req-NURS 6755-08.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6520 - Acute Care Pediatric Nurse Practitioner 3 (3 Credits)

Content on the urgent, emergent, and critical care of acute illness/trauma and exacerbation of chronic illness in a systems approach. Systems include musculoskeletal disorders, traumatic injury, toxicology, mental health, ENT and Ophthalmology. Special populations: chronic pain, palliative/end-of-life care. Post-Grad Certificate - NURS 6500, minimum 2 credits NURS 6756-08. MS students pre-req - NURS 6761, NURS 6243, NURS 6222, NURS 6010. NURS 6031 and NURS 6772. Co-requisite NURS 6755-08.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6528 - FNP DM Physio & Psych Health I (3 Credits)

This course applies an evidence-based, family-centered approach when managing behavioral and physical health in the primary care setting. Synthesis of differential diagnoses for acute and chronic conditions is emphasized. Strategies for the development of wellness goals and self-efficacy are provided. NURS 6640

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6529 - FNP DM Physio & Psych Health II (3 Credits)

This course evaluates the effectiveness of an evidence-based, family-centered approach to behavioral and physical health. An emphasis is placed on the design of wellness goals and the creation of management plans. Solutions to common challenges in primary care are proposed.

Requisite: NURS 6528, NURS 6640

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6549 - FNP Adv. Clinical Skills (1 Credit)

Students will explore the framework used to make evidence-based clinical decisions in the physical and behavioral primary care of families. Confidence is built in the ability to perform procedures as well as gather, interpret, and evaluate laboratory and diagnostic data. NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6590 - Introduction to Adult Gerontology Acute Care Nurse Practitioner (3 Credits)

AGACNP learners develop foundational advanced practice registered nurse skills necessary when caring for acute, critical, and chronically ill patients. Emphasis is on analyzation and prioritization of patient data, formulation of broad differential diagnoses, and effective communication. Prereq: NURS 6761, NURS 6222, NURS 6243

Grading Basis: Letter Grade with IP

Prereq: NURS 6761, NURS 6222, NURS 6243.

Typically Offered: Fall.

NURS 6600 - Adult Gerontology Acute Care Nurse Practitioner I (3 Credits)

Students integrate scientific knowledge with advanced health assessment and diagnostic reasoning skills to diagnose and manage acute adult and older adult conditions. Students prioritize urgent, emergent, and critical care, while demonstrating patient-centered care and applying systems-based advanced practice strategies.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6603 - Health Systems and Management (3 Credits)

This course provides students an overview of the U.S. Healthcare System, its key components and their functional relationships. Students learn about the organization, management, and financing of the U.S. Healthcare System.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6610 - Adult Gerontology Acute Care Nurse Practitioner 2 (3 Credits)

Students continue to integrate scientific knowledge with advanced health assessment and diagnostic reasoning skills to diagnose and manage acute adult and older adult conditions. Students prioritize urgent, emergent, and critical care, while demonstrating patient-centered care and applying systems-based advanced practice strategies. Prereq: NURS 6600

Grading Basis: Letter Grade with IP

Prereq: NURS 6600.

Typically Offered: Fall.

NURS 6620 - Adult Gero Acute Care NP Diagnostics & Therapeutics (2 Credits)

Students apply principles of diagnostic and therapeutic modalities for acute and critical care patients. Emphasizes the analysis of clinical data and the development of advanced technical skills essential for the role of the adult gerontology acute care nurse practitioner. Prereq: NURS 6610

Grading Basis: Letter Grade with IP

Prereq: NURS 6610.

Typically Offered: Summer.

NURS 6630 - Advanced Practice Synthesis in Adult Gerontology Acute Care (1 Credit)

This course synthesizes professional principles related to the Adult Gerontology Acute Care Nurse Practitioner (AGACNP) and transition to the role of a provider. Students will prepare to integrate professional responsibilities into practice. Prerequisites: NURS 6600, NURS 6620, NURS 6610

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6633 - Advanced Public Health Nursing (3 Credits)

Course provides the learned with: foundations of advanced public health nursing practice; advanced knowledge of population health and care coordination; essentials of program planning, implementation, and evaluation; and community practicum experiences leading to capstone development and completion. Prereq: NURS 6010, NURS 6011.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6640 - FNP Hlth Promotion, Prevention, Screening (3 Credits)

This class introduces students to primary care evidence-based research and practice guidelines important for physical and behavioral health promotion and protection. The family nurse practitioner role in family health and wellness will be emphasized.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6659 - Adv Assess, Neurobiology & Psychopharm Across Lifespan (3 Credits)

Focus on integration of neurobiological and psychopharmacological theory and research to assessment, symptomatology and treatment of psychiatric disorders across the lifespan. Prerequisite: Psychotherapy, NURS6664, NURS6243, Principles of Evidence, NURS6761, NURS6222.

If DNP additional courses, NURS6303, Evaluate Evidence, Applying Evidence

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6661 - Diagnosis and Management/Adults PMHNP (3 Credits)

Advanced knowledge of evidence-based psychiatric-mental health nursing including assessment, diagnosis, health promotion, management, and evaluation of adults with mental illnesses and addictions.

Emphasis on neurobiology, complex psychopharmacological and non-pharmacological treatments, and culturally-sensitive nursing interventions. Prereq: NURS 6660. Coreq: NURS 6756-6758, 3 cr hrs.

Grading Basis: Letter Grade with IP

NURS 6662 - Diagnosis and Management/Children and Older Adult PMHNP (3 Credits)

Advanced psychiatric nursing assessment, diagnosis, health promotion, management, and evaluation of children, adolescents, and older adults. Emphasis on complex individual, family, group, and non-pharmacologic nursing interventions, neurobiology, psychopharmacological treatments, and developmentally appropriate, culturally-sensitive nursing interventions. Variable credits: Child (2); all populations (3) Prereq: NURS 6660; approval from Option Coordinator of FPMHNP Program.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6664 - Integrated Behavioral Healthcare & Common Psychiatri (3 Credits)

Overview of behavioral health assessment of common psychiatric disorders and medical conditions with psychiatric presentations across the lifespan. Focuses on integrated care settings, interdisciplinary communication, care coordination within a trauma-informed setting. Guidelines for telepsych and social media will be discussed. Prerequisite: NURS 6243, NURS 6222 or permission of instructor

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6665 - PsyTherapy, Behavioral Change & HP Lifespan (3 Credits)

Theoretical foundational knowledge of individual, group, and family therapy, health promotion and disease prevention for the PMHNP across the lifespan. Focuses behavior change and use of Cognitive behavioral, dialectical, solution focused, play, and reminiscence therapy, motivational interviewing across the lifespan. Prerequisite: In the PMHNP option, or approval by course faculty

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6739 - Ob-Gyn Essentials for the FNP (3 Credits)

NURS 6739 will provide an overview of normal anatomy and physiology, health prevention and common acute gynecology, pregnancy and postpartum problems commonly seen in the primary care of women over the lifespan. Requisite: NURS 6222, NURS 6761, NURS 6243, NURS 6818

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6740 - ADULT-GERONTOLOGY CNS WELLNESS TO ILLNESS (3 Credits)

Focus is on knowledge acquisition and skill development for Adult-Gerontology Clinical Nurse Specialist. The course provides learning of concepts of wellness, health maintenance, aging, palliative care as a model for health, evidence-based practice, skill development, clinical decision-making and APN role.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6742 - Adult-Gerontology CNS Advanced Practice**Acute Care Nursing (3 Credits)**

This course builds CNS knowledge and skills managing the care of acutely ill patients across the continuum during acute illness episodes. CNS practice incorporating three spheres, healthcare systems, patients/families and nursing practice excellence are central to course content

Grading Basis: Letter Grade with IP

NURS 6746 - Adult-Gero CNS Complex patient management (3 Credits)

Focuses on management of patients with acute and chronic illness in adults by Clinical Nurse Specialist. Integration of advanced skill development, theory, evidence-based symptom, disease management, clinical decision making, leadership, system organizational strategies, professional issues, and APN role transition.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6752 - Advanced Public Health Nursing Practicum I (1-6 Credits)

Course provides the learner with advanced public health nursing clinical/practicum experiences in community-based settings. Associated seminars of clinical experiences will compliment didactic course content.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 9.

Typically Offered: Fall, Spring, Summer.

NURS 6759 - Informatics Adv Practicum (3-6 Credits)

This course allows students to integrate and apply informatics competencies in an advanced nursing practice role. The preceptored practicum and project require the student to engage in informatics specialist roles within a variety of health care settings. Prereq: Completion of a minimum of three informatics specialty courses.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 20.

NURS 6761 - Advanced Assessment (3 Credits)

Learners demonstrate the advanced subjective and objective data gathering skills of communication, advanced physical examination and critical thinking to generate and document clinically reasoned assessments and plans required of advanced practice registered nurses caring for persons across the lifespan. Prereq: NURS 6243 with a B or better.

Grading Basis: Letter Grade with IP

Prereq: NURS 6243 with a B or better.

Typically Offered: Fall, Summer.

NURS 6790 - Systems and Leadership Theory (3 Credits)

This course focuses on the contemporary theories as they apply to healthcare systems and the managerial role. The course includes critical analysis of organizational, leadership, change and evidence-based practice theories. Emphasis is placed on application of theory to organizational analysis.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6793 - Relational Communication (3 Credits)

Study of theory, research, and praxis of relational communication with interpersonal, group, and organizational contexts. Relationship-building, effective communication and leadership competencies are emphasized for safety and quality improvement through reflection and self-awareness, shared decision-making, coaching, conflict management, and political navigation.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6794 - Decision Support and Data Management (3 Credits)

This course focuses on decision making models and their application using diverse data sources for high quality and safe care delivery. Decision support tools used in various health settings will be explored.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6795 - i-LEAD Administrative Internship (3 Credits)

The internship provides students the opportunity to apply and evaluate systems and leadership theories, concepts and skills in the work setting under the supervision of a preceptor. The course is designed as a capstone experience to integrate and apply competencies

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6796 - Executive Leadership and Organizational Systems (3 Credits)

This course examines attributes and issues associated with high-level administrative roles in healthcare organizations. It explores facets of leadership and leadership development in teams and organizations and processes by which people affect change in a variety of roles and situation.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6800 - Leadership, Financial Management and Innovation (3 Credits)

Distinguishes leadership theories and management concepts in complex systems. Analyzes self-leadership in influencing teams. Differentiates systems influencers impacting financial decision-making. Synthesizes knowledge of economics, contributing to organizational financial health culminating in business plan for innovative nursing program/practice.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 6819 - AGPCNP Primary Hlth Care I: Hlth Promotion & Prevention (3 Credits)

This course provides content on health promotion and health maintenance of adults in primary care. Evidence-based guidelines for health promotion and tools for assessment and management of the individual, family and community. Prerequisites: NURS 6243, NURS 6222, NURS 6761; Co-requisite: NURS 5971

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6829 - Primary Care II: Diagnosis and Management I (3 Credits)

This course covers diagnosis, management, and competent determinations of care related to acute and chronic health alterations in the adult/geriatric primary care patient. Pre-requisite: NURS 6243, NURS 6222, NURS 6761, NURS 6818. Co-requisite NURS 5972

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6836 - Special Topics (0.5-6 Credits)

This course is a special topic selected each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

NURS 6839 - Primary Care III: Diagnosis and Management II (3 Credits)

This course is a continuation of diagnosis, management, and competent determinations of care related to acute and chronic health alterations in the adult/geriatric primary care patient. Requisite: NURS 6222, NURS 6243, NURS 6761, NURS 5971, NURS 6829, NURS 6818, NURS 5971, NURS 5972, NURS 5973

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

NURS 6849 - PC IV: DM III Care for Complex Older Adult (3 Credits)

This course focuses on care of the older adult through examination of complex health alterations. Health optimization of the older adult; palliative and end of life care, social and political factors affecting this age group are also examined. Pre-requisites: NURS 6222, NURS 6243, NURS 6761, NURS 6839 Co-requisite: NURS 5973

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6850 - NMW Primary Care of Women (2 Credits)

Facilitates development of critical thinking necessary for the application of midwifery management in primary care for women; routine screening and health promotion, diagnosis & management, and collaborative management or referral of acute minor illnesses and chronic disease management. Prerequisites: NURS 6222, NURS 6243, NURS 6761

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6859 - Advanced Professional Role (2 Credits)

Advance practice registered nurse learners develop competencies through analysis, appraisal and application of the professional aspects and challenges associated with transitioning to the advance practice registered nursing role.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

NURS 6882 - Foundational Clinical Skills Adv Pract NP (1 Credit)

This course applies advanced practice competencies associated with procedural skills in a hands on format.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

NURS 6940 - Candidate for Degree (1 Credit)

Registration only if not enrolled in other coursework in the semester in which he/she takes MS comprehensive exams.

Grading Basis: Satisfactory/Unsatisfactory

Additional Information: Report as Full Time.

NURS 6950 - Synthesis/Integration/Transition into FNP Practice (2 Credits)

This course will synthesize and integrate learning from the FNP program and prepare the student for transition into clinical practice. Students will plan how to support the FNP role and analyze interprofessional leadership opportunities to improve health outcomes. Pre/Co-requisite:

NURS 5934; Prerequisite: NURS 6529.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 6973 - State of Science: Healthcare Systems (3 Credits)

Course focuses on the state of the science of evidence-based practice and environment of health-care and its effect on organizational, staff, and patient outcomes. The manager's role in creating/enhancing the environment will be emphasized based upon research. Prerequisite:

NURS 6790 Systems Theory

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

NURS 7001 - Diversity of Scientific Perspectives (1 Credit)

Beginning exploration of focal emphasis areas biobehavioral science, caring science and healthcare systems in a seminar format. Students will be introduced to the three focal emphasis areas and explore applications to knowledge development in their area of substantive interest.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7101 - Metatheory in Nursing I (3 Credits)

This course examines the nature of nursing as an academic discipline, emphasizing varying perspectives of nursing's phenomena of interest, history of knowledge development, interrelationships between philosophies of science and nursing knowledge, and methods of theory analysis and evaluation.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7102 - Metatheory in Nursing II (3 Credits)

This course focuses on processes of knowledge development in nursing, including traditional and non-traditional methods. Application of a selected theory development method to a student-selected nursing phenomenon is required.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7200 - Writing Discipline for Scientific Publishing (3 Credits)

Concentrating on clear, logical thinking as the most important element in manuscript communication, students will develop the discipline of writing focusing on writing roadmaps, precision/concision of words and common writing pitfalls in the context of expectations for scientific publishing.

Prerequisite: Completion of first-year PhD coursework or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7220 - Role of the Scientist I (3 Credits)

This seminar course is designed to promote beginning professional role formation as PhD students transition to the role of the scientist. Students will develop a research question and specific aims.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7221 - Role of the Scientist II (2 Credits)

This seminar course builds upon Role of the Scientist I by emphasizing role development through scientific grant writing. Prerequisite:

NURS 7220.

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7350 - Research Practicum (3 Credits)

Students gain hands-on research experience by leveraging various opportunities within the college, campus and other academic environments. This experience includes observing and contributing to research steps and team interaction. This will enrich students' understanding of research process and provide hands-on experience.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7440 - Measurement for Nursing Science (3 Credits)

Course provides a knowledge base in the process of instrumentation to measure psychosocial and behavioral phenomena. Techniques to evaluate existing instruments will be followed by methods for designing and testing the psychometric properties of new instruments.

Grading Basis: Letter Grade

NURS 7504 - Caring Science Seminar I: Introduction to Caring Science (1 Credit)

This course focuses on the evolution of caring science research and other disciplines in nursing with an emphasis on Dr. Jean Watson's perspective. How theoretical-scholarship in caring science and multiple theories of caring are used in research are critiqued and examined.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7506 - Diverse Theories of Care: Paradigms of Human Caring (3 Credits)

This course explores caring science and unitary views of consciousness in relation to universal human experiences and vicissitudes of existence. Different theories of caring examine the diversity and converging directions of a unitary transformative view of evolved humans.

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 7508 - CS as Transdisciplinary Domain for Health Science Educ (3 Credits)

This course explores the placement of caring knowledge within a transdisciplinary matrix for nursing science and related fields of health science and education. It examines diverse concepts of caring in the larger field of health science. Original expanded title: Caring Science as Transdisciplinary Domain for Health Science Education, Practice and Research

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7510 - Nursing Science Inquiry Methods (4 Credits)

An introduction to qualitative and quantitative methods of inquiry to guide the selection of methods for knowledge development in nursing science. Emphasis on the integration of midrange theory, literature analysis and synthesis for development of researchable questions and methods selection. Prereq: Admission to the program and first semester required courses.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7511 - Philosophical Underpinnings Caring Science (3 Credits)

This course focuses on the analysis of caring science from its philosophical traditions. Historical and contemporary philosophical scholarship will be critiqued and examined. NURS 7504, NURS 7519
Grading Basis: Letter Grade
Typically Offered: Summer.

NURS 7519 - Exploring Caring Science Questions (1 Credit)

This course focuses on the latest development and analysis of caring science research and its evolution. Caring Science questions and methodologies related to students' research questions are examined. Prerequisite: NURS 7101, NURS 7201, NURS 7504
Grading Basis: Letter Grade
Typically Offered: Spring.

NURS 7621 - Advanced Qualitative Research Design, Methods & Analysis I (3 Credits)

A range of qualitative research approaches are critically analyzed exploring contemporary qualitative designs and underlying theoretical models. Students will develop a qualitative research proposal appropriate for student's doctoral research questions and consistent with IRB requirements. Prereq: Completion of required coursework for Year 1 and Summer Year 2.
Grading Basis: Letter Grade
Typically Offered: Fall.

NURS 7622 - Advanced Qualitative Research Design, Methods & Analysis II (3 Credits)

This course provides students with opportunities to apply new skills and knowledge related to their interests, including critique and dissemination of qualitative reports. Prereq: Completion of required courses for Year 1 and Summer Year 2 and Fall Year 2.
Grading Basis: Letter Grade
Typically Offered: Spring.

NURS 7623 - Advanced Qualitative Research Design, Methods & Analysis III (3 Credits)

This course provides students with tailored opportunities to apply new skills and knowledge related to their interests, including conduct of a preliminary qualitative study. Local institutional review board approval, recruitment, data collection and early data analysis are conducted. Prereq: Instructor Consent.
Grading Basis: Letter Grade
Typically Offered: Summer.

NURS 7631 - Advanced Quantitative Research Design, Methods & Analysis I (3 Credits)

In-depth study of principles foundational to quantitative research including causation, sources of error, measurement, and the focal unit, and internal and external validity; experimental and quasi-experimental designs; and methods of statistical analysis for these designs. Prereq: Completion of required courses for Year 1 and Summer semester of Year 2.
Grading Basis: Letter Grade
Typically Offered: Fall.

NURS 7632 - Advanced quantitative Research Design, Methods & Analysis II (3 Credits)

In-depth study of principles foundational to quantitative research including causation, prediction, explanation, and power; descriptive and exploratory research designs; methods of statistical analysis for these designed; and meta-analysis. Prereq: Required courses for: Year 1, Summer Year 2 and Fall Year 2.
Grading Basis: Letter Grade
Typically Offered: Spring.

NURS 7720 - Health Care Systems I: Evaluating Health Care Delivery System (3 Credits)

Focuses on descriptive/evaluation of health care delivery across the continuum of care and integration of nursing care with health care delivery. HCS middle-range theories for descriptive/evaluative research are examined. Advanced methods for research at the system level are addressed. Prereq: NURS 7801; NURS 7802NURS 7803, NURS 7101; NURS 7102; NURS 7201, NURS 7510
Grading Basis: Letter Grade
Typically Offered: Fall.

NURS 7730 - Health Care Systems II: Changing Health Care Delivery Systems (3 Credits)

Focuses on improving health care delivery across the continuum of care. Changing theories and theoretical grounding for system level interventions are analyzed. Application includes advanced methods/designs for assessing the effects of change. The information technology/care delivery interface is examined. Prereq: All first year and summer/fall second year required courses.
Grading Basis: Letter Grade
Typically Offered: Spring.

NURS 7740 - BBS I: Intrapersonal Determinants & Phenomena (3 Credits)

This course focuses on the intrapersonal biobehavioral determinants that underlie health-related phenomena, including psychosocial, behavioral, and biological mechanisms and processes. Prereq: First year PhD required courses for the Biobehavioral Science focus.
Grading Basis: Letter Grade
Typically Offered: Summer.

NURS 7750 - BBS II: Interpersonal Phenomena & Determinants (3 Credits)

This course focuses on the interpersonal phenomena that arise from interrelationships among psychosocial, behavioral, biological and environmental determinants of health states across the lifespan. Prereq: First year and second year summer PhD required courses for the Biobehavioral Science focus.
Grading Basis: Letter Grade
Typically Offered: Fall.

NURS 7760 - Interventions & Outcomes in Biobehavioral Research (3 Credits)

Introduction to conceptualization, development, and testing of biobehavioral interventions; identification and measurement of biobehavioral outcomes. Attention is also given to the design of clinical trials to test biobehavioral interventions, questions of efficacy and effectiveness, and issues of implementation and fidelity. Prereq: Required courses for Year 1, summer Year 2, Fall Year 2.
Grading Basis: Letter Grade
Typically Offered: Spring.

NURS 7802 - HCS Seminar II: Developing Systems Questions (1 Credit)

Development of key questions in the field of health care systems research will be discussed in seminar format. Students will develop research questions related to their own area of research interest. Prereq: Completion of required first semester courses.
Grading Basis: Letter Grade
Typically Offered: Spring.

NURS 7803 - Health Care Systems: State of the Science (3 Credits)
Interrogation of extant HCS literature using integrative and systematic frameworks to review the state of the science in student's area of interest. Identification of state of the science and appropriate research methods to address the gaps in knowledge. Prereq: All required first year courses.

Grading Basis: Letter Grade

Typically Offered: Summer.

NURS 7810 - Narrative Inquiry for Health Professions (3 Credits)
This course explores definitions of stories and narratives and applied narrative inquiry within a health equity-driven, transdisciplinary perspective for health professions. This course covers narrative inquiry across methods, grant and career development, and doctoral-level research using single, multi- and mixed-methods design.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

NURS 7822 - Developing Biobehavioral Research Problem & Questions (1 Credit)

Development of key questions in the field of biobehavioral research will be discussed in seminar format. Students will develop a problem statement and research questions related to their own area of research interest. Prereq: Completion of first semester required courses.

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 7836 - Special Topics (1-4 Credits)

This course is a special topic selected each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 15.

NURS 7856 - Independent Study (1-4 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

NURS 7862 - Best Practices to Enhance Teaching and Learning (3 Credits)

Exploration of best practices in evidence-based and theory-guided teaching and learning. Analysis of contemporary learning principles and learning styles. Implementation of a variety of high impact strategies for learner engagement across settings, with emphasis on selecting and using teaching technologies. Requisites: Graduate standing or permission of instructor

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 7863 - Immersion in Nursing Education Practicum (3 Credits)
Implement best practices in teaching and learning, curriculum and course design and continuous improvement, learning assessment and evaluation methods with a faculty mentor. Experiences address individual learning needs relevant to the nurse educator role across teaching modalities and learning environments. Requisite: Graduate standing or permission of instructor. Previous teaching experience or coursework relevant to teaching and learning strategies, curriculum design and evaluation, and/or adult learning theory is recommended.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 7864 - Evolving Nursing Educ Sci and Nurse Educator Roles (3 Credits)

Exploration of advances in nursing education science and impact of research on pedagogy, roles, and competencies necessary to prepare a well-qualified diverse nursing workforce across dynamic healthcare systems and environments. Emphasis is on the scholarship of teaching and professional development. Requisite: Graduate standing or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 7865 - Outcome-focused Curriculum and Program Evaluation (3 Credits)

Exploration of curriculum design and course developments as foundations for achievement of desired learning and program outcomes. Emphasis is on the connection between design and evidence of performance to assess individual learning, course and program effectiveness and continuous quality improvement. Requisite: Graduate Standing or permission of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

NURS 8000 - DNP Project Variable Hours Course (1-6 Credits)

Students who need greater than 540 clinical hours toward DNP Project take this course. Faculty advisor provides oversight to student. Credit hours are variable depending on individual student needs. Students log DNP Project hours in InPlace. Prerequisite: NURS 6070, NURS 6009, NURS 6286, NURS 6109

Grading Basis: Letter Grade

Repeatable. Max Credits: 12.

Typically Offered: Spring.

NURS 8020 - DNP Project Preparation (2 Credits)

Doctor of Nursing Practice Students begin to plan their projects by incorporating ethical and regulatory oversight considerations of practice, population, or system readiness for enhancement and relevant evidence and/or interventions related to the DNP Project. Students will begin to develop a proposal for their DNP project that will be reviewed for ethical and regulatory oversight.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

NURS 8030 - DNP Project I (4 Credits)

In a clinically focused experience, Doctor of Nursing Practice students work on scholarly projects which incorporate theoretical models, various strategies, and compliance with regulatory oversight. Evidence evaluation and feedback incorporation are highlighted. Pre-requisite: NURS 8020

Grading Basis: Letter Grade

Typically Offered: Spring.

NURS 8040 - DNP Project Course II (4 Credits)

Students implement the clinical scholarly project by leading an interdisciplinary team, conducting data collection, and begin data analysis. Implementation is guided by institutional resources, selected theories, identified evidence, small cycles of change, and technology. Students prioritize dissemination of results. Prereq: NURS 8020, NURS 8030

Grading Basis: Letter Grade

Prereq: NURS 8020, NURS 8030.

Typically Offered: Fall, Summer.

NURS 8050 - DNP Project III (4 Credits)

Doctor of Nursing Practice students will continue project implementation, conclude data collection and complete data analysis in this final course.

Students will disseminate project findings by completing a scholarly paper and an oral presentation. An e-portfolio will also be completed.

Requisite: NURS 8040, NURS 8045

Grading Basis: Letter Grade

Typically Offered: Fall.

NURS 8856 - Independent Study (DNP) (1-6 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

NURS 8990 - Dissertation (1-10 Credits)

Student MUST register for section number listed for dissertation chairperson. Prereq: Completion of majority of doctoral course work.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 40.

Additional Information: Report as Full Time.

Obstetrics & Gynecology (OBGY)

OBGY 5000 - Introduction to OBGYN (1 Credit)

This course provides a preclinical introduction to the dynamic and multifaceted specialty of OB-GYN. Students will learn about comprehensive reproductive healthcare from a variety of clinician experts in both lecture and hands-on/simulation-based learning sessions (i.e. IUD insertion, pap smears, suture skills).

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

OBGY 8000 - General Obstetrics AI (8 Credits)

4 weeks. Max:1. This Sub-I course meets the UC SOM requirement for graduation. Offered at DHMC only. Includes experience in outpatient high risk obstetrics, inpatient antepartum, intrapartum, postpartum and family planning. Student works under clinical supervision of residents and attending staff.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OBGY 8001 - General Gynecology AI (8 Credits)

4 wks. Max:1. This Sub-I course meets the UC SOM requirement for graduation. Offered at DHMC only. Includes experience in inpatient/outpatient gynecology, family planning, operative gynecology and postoperative care. Student works under supervision of residents and attending staff.

Grading Basis: Medical School HP

OBGY 8004 - High Risk Maternal/Fet AI (8 Credits)

4 wks. Max:1. Intensive exposure to problems of high-risk obstetrics. Student will work under supervision of the Maternal-Fetal Medicine Staff. Student will attend high-risk clinics, have primary responsibility for patient care in antepartum unit under supervision of chief resident.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OBGY 8005 - Gynecologic Oncology Acting Internship (8-12 Credits)

4 or 6 wks. Max:1. Student will attend GYN oncology clinics and scrub on all GYN oncology surgery, functioning as acting intern. All pathology will be reviewed with GYN oncologist. Literature review on selected subject required. Clinical research opportunities available.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

OBGY 8009 - GYN Subspecialties (8-12 Credits)

4 or 6 wks. Max:1. Student attends outpatient gynecologic diagnostic clinics, colposcopy and laser surgery, urogynecology, urodynamics, hysteroscopy, and pelvic pain. Student works under supervision of Gyn staff. Directed study and clinical research. Attendance at colposcopy biopsy review conference, preoperative and Gyn teaching conferences required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

OBGY 8011 - Family Planning (8 Credits)

4 wks. Max:1. This elective is designed to make the student proficient in providing family planning services: contraception, options counseling and termination procedures. Substantial emphasis will also be placed on participation in ongoing research activities of the division. Prereq: Passing grade in third year Women and Newborns clerkship (IDPT 7030).

Grading Basis: Medical School HP

OBGY 8012 - UH Gynecology AI (8 Credits)

4 wks. Max:1. This course can meet Sub-I qualifications. This course is designed to allow students to become integrally involved with the general gynecology service. Student will partake in all clinical activities of the service, including operative procedures, management of inpatient gynecology conditions, and emergency room consultation. Prereq: Passing grade in third year Women and Newborns Rotation (IDPT 7030).

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OBGY 8015 - Group Prenatal Care: Pregnancy & Parenting Partners (4 Credits)

Students will follow a cohort of women through a group prenatal and postpartum care program. Students will work with Certified Nurse Midwives (CNM) and group facilitators to provide prenatal exams and to facilitate educational sessions in an underserved population.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

OBGY 8016 - Doula Care and Racial Equity (8 Credits)

Students will learn about doula care and their critical role in improving outcomes for communities of color. Students will participate in doula training, shadow doulas and physicians, participate in simulations, and have in-person lectures about racism in the birth space. This learning will be supported by readings and resources.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

OBGY 8100 - OBGY Elective Away (4-8 Credits)

This Obstetrics/Gynecology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

OBGY 8600 - Research in OBGYN (4-24 Credits)

2-12 wks. Prereq: Departmental approval must be obtained and all arrangements must be made one semester in advance. The student must receive prior approval from the Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

OBGY 8630 - OBGY Research Away (8-16 Credits)

This Obstetrics/Gynecology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

Oncology (DSO)

DSO 6610 - Oral Pathology 1 (0.1-5 Credits)

This course is a comprehensive review of the fundamental mechanisms and general principles of oral pathology, including developmental disturbances of oral and para-oral structures, benign and malignant tumors and cysts.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSO 6612 - Oral Pathology 2 (0.1-5 Credits)

This course is a continuation of Oral Pathology 1.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSO 7755 - Clinical Oncology (0.1-5 Credits)

One week course including lectures, seminars, tumor boards, surgery rounds, and radiation therapy conferences dealing with prevention, diagnosis, and treatment of head and neck neoplasia.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Operative Dentistry (DSOP)

DSOP 5504 - Principles of Operative Dentistry Direct Restoration I (0.1-5 Credits)

This course is designed to teach students the principles of operative dentistry and the direct restoration of teeth from a problem specific approach.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Spring.

DSOP 5505 - Principles of Operative Dentistry - Direct Restoration 1 Lab (0.1-5 Credits)

This course integrates the principles of operative dentistry and direct restoration in a case-based laboratory environment.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOP 5506 - Principles of Operative Dentistry - Direct Restorations 2 (0.1-5 Credits)

Continuation of Principles of Operative Dentistry - Direct Restoration 1.

Designed to teach operative dentistry from a problem specific approach.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOP 5507 - Principles of Operative Dentistry - Direct Restorations 2 Lab (0.1-5 Credits)

Continuation of Principles of Operative Dentistry - Direct Restoration 1 Lab.

Designed to teach operative dentistry from a problem specific approach.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSOP 6031 - Clinical Operative Dentistry 1 (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSOP 6600 - Pre-Clinical Operative Dentistry Workshop (0.1-5 Credits)

Practical restorative exercises in extracted natural teeth.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSOP 6610 - Seminars in Restorative Dentistry (0.1-5 Credits)

This course will present topics on operative dentistry relative to clinic patient care. Current materials and techniques as well as a review of fundamental concepts of operative dentistry will be taught.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOP 7011 - Clinical Operative Dentistry 2 (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSOP 7022 - Clinical Operative Dentistry 3 (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSOP 7033 - Clinical Operative Dentistry 4 (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSOP 7757 - Clinical Operative Dentistry (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 22.

Typically Offered: Spring.

DSOP 8011 - Clinical Operative Dentistry 5 (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSOP 8022 - Clinical Operative Dentistry 6 (0.1-5 Credits)

Clinical rotation in operative dentistry.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Ophthalmology (OPHT)

OPHT 5610 - Biology of the Eye (2 Credits)

This one credit course introduces students to contemporary topics in vision science and ophthalmology by integrating cutting-edge basic science with translational research and clinical advances. The overall objective is to familiarize students with the core concepts and challenges in clinical ophthalmology and vision research.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

OPHT 8000 - Advanced Ophthalmology (4-8 Credits)

4 wks. Max:1. This elective is designed for senior students seriously considering a career in Ophthalmology. Students rotate at each hospital with in-depth exposure to each subspecialty area. Students are expected to participate with in- and out-patient care, call activities, teaching rounds, and conferences.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OPHT 8002 - Pediatric Ophthalmology (4-8 Credits)

This elective is designed for senior students seriously considering a career in Ophthalmology. Students rotate at Children's Hospital Colorado with in-depth exposure to the diagnosis and clinical/surgical management of pediatric eye disease. Students are expected to participate with in- and out-patient care, call activities, teaching rounds and conferences. Prerequisite: OPHT 8000

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OPHT 8003 - Neuro-ophthalmology (4-8 Credits)

This elective is designed both for students considering a career in ophthalmology, as well as for students interested in neurology. Students will participate in the care of adults and children with diverse neuro-ophthalmologic disease through outpatient clinics, consults, and surgery.

Grading Basis: Medical School HP

Typically Offered: Spring.

OPHT 8004 - Ophthalmology - Glaucoma (4-8 Credits)

This elective is designed for students planning to pursue a career in ophthalmology. This elective is available only to students who have already completed a 4-week elective in OPHT 8000.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OPHT 8100 - OPHT Elective Away (4-8 Credits)

This Ophthalmology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks. Departmental approval required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

OPHT 8600 - Research Ophthalmology (4-24 Credits)

2-12 wks. A final written evaluation must be mailed to Course Director who will assign the final grade. Prereq: Arrangements must be made one month in advance. Departmental approval required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

OPHT 8630 - OPHT Research Away (4-16 Credits)

This Ophthalmology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

Oral Diagnosis (DSOD)

DSOD 5500 - Assessment of the Dental Patient (0.1-0.75 Credits)

Designed to introduce the student to the problem-oriented dental record and to a systems approach to the collection of health data. Includes both lecture and clinical phases.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOD 5502 - Oral Radiology (0.1-5 Credits)

Designed to introduce the students to basic radiology and to provide them with the necessary practical skills in preparation for clinical dentistry. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSOD 5503 - Oral Radiology Laboratory (0.1-5 Credits)

The laboratory is designed to provide students with the necessary practical skills in preparation for clinical dentistry. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSOD 6031 - Clinical Oral Diagnosis 1 (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSOD 7011 - Clinical Oral Diagnosis 2 (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSOD 7022 - Clinical Oral Diagnosis 3 (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSOD 7033 - Clinical Oral Diagnosis 4 (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSOD 7715 - Diagnosis of Orofacial Lesions (0.1-5 Credits)

Presentations of oral and maxillofacial lesions and anomalies from the comprehensive patient care program will be made by the students and critiqued by the faculty. Clinical history, detailed description, differential diagnosis and treatment/prognosis will form the basis of this interactive discussion.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOD 7724 - Diagnostic Radiology (0.1-5 Credits)

This course in radiographic interpretation is for 3rd year dental and 2nd year ISP students and builds upon Oral Path 1 and 2. It includes radiographic interpretation, pathophysiology and management of osseous disorders of the jaw and TMJ.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSOD 8010 - Clinical Oral Radiology (0.1-5 Credits)

The purpose of this course is to provide students with experience in exposing radiographs and by completing written interpretations of all radiographs. Evaluation will be on a pass/fail basis. Requirements:

Department consent

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSOD 8011 - Clinical Oral Diagnosis 5 (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSOD 8022 - Clinical Oral Diagnosis 6 (0.1-5 Credits)

Clinical rotation in oral diagnosis.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Oral Surgery (DSOS)

DSOS 6031 - Oral and Maxillofacial Surgery 1 (0.1-5 Credits)

The diagnosis and treatment of oral and maxillofacial surgical problems including techniques for extraction of teeth alveoplasty, biopsy, management of infection, treatment of maxillary and mandibular fractures, and suturing techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOS 7011 - Oral and Maxillofacial Surgery 2 (0.1-5 Credits)

The diagnosis and treatment of oral and maxillofacial surgical problems including techniques for extraction of teeth alveoplasty, biopsy, management of infection, treatment of maxillary and mandibular fractures, and suturing techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOS 8011 - Clinical Oral Maxillofacial Surgery 1 (0.1-5 Credits)

This is a clinical oral surgery experience including routine and surgical removal of erupted and impacted teeth and use of intravenous sedation techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

Orthodontics (DSOT)

DSOT 6610 - Orthodontics 1 (0.1-5 Credits)

Early physical and emotional development of the child is presented, emphasizing prenatal and neonatal influences on the craniofacial complex. The etiology and classification of malocclusion along with the development of disturbances of hard and soft tissues are introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOT 7021 - Clinical Orthodontics 1 (0.1-5 Credits)

Clinical rotation in orthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSOT 7720 - Orthodontics 2 (0.1-5 Credits)

Covers Cephalometric analysis laboratory, fabrication of fixed and removable appliances for interceptive and corrective orthodontic treatment. Utilizes acquired knowledge from the previous orthodontic course to synthesize a general and orthodontic diagnosis; and preventive, restorative, and orthodontic treatment plan.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

Orthodontics Residency (DSOR)

DSOR 5101 - Orthodontics 101 - Boot Camp (4.2 Credits)

This post-doctoral course is an intense review of the breadth and scope of orthodontics including growth and development and the different clinical orthodontic modalities.

Grading Basis: Letter Grade with IP

DSOR 5102 - Dentofacial Growth and Development 1 (1.8 Credits)

This post-doctoral course is an in-depth study of human growth and development that includes basic embryology of the head and neck, growth theories and facial and dental arch changes throughout human life.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5103 - Diagnosis and Treatment Planning 1 (1.8 Credits)

This post-doctoral course is an in-depth study of advanced orthodontic data gathering and interpretation as used in orthodontic diagnosis and treatment planning.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5104 - Biomechanics 1 (3.5 Credits)

This post-doctoral course is an in-depth, advanced study of orthodontic biomechanical systems and their effect on the craniofacial and dental structures. Included in this course are the protocols required to treat both skeletal and dental malocclusions.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5105 - Research Methodology and Biostatistics 1 (1.8 Credits)

This post-doctoral course is an in-depth study of scientific research methods, study design and organization, data gathering, and the biostatistical tools required to analyze the results of a study.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5107 - Treatment Planning 1 (3.5 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Post-doctoral students are required to present patient diagnoses and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5108 - Current Literature Review 1 (0.9 Credits)

Course is the study, analysis and discussion of journal articles and topics that are prominent in orthodontics within the previous year. Post-doctoral students critically review and analyze the articles to determine advances in the art and science of orthodontics.

Grading Basis: Letter Grade with IP

DSOR 5109 - Digital Orthodontics and Clear Aligner Therapy (0.9 Credits)

This course for the Orthodontics and Dentofacial Orthopedics residents covers the development of digital orthodontics, its progress, and its current use in modern orthodontic diagnosis, treatment planning, and therapy. It covers imaging (both 2D and 3D), radiography, additive manufacturing, treatment planning/prediction software, and artificial intelligence.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5111 - History of Orthodontics & Dentofacial Orthopedics (0.9 Credits)

This post-doctoral course is an in-depth study of the development of orthodontic treatment and of orthodontics as a specialty, including the study of prominent figures that played a part in specialty and treatment development.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

DSOR 5202 - Dentofacial Growth and Development 2 (2.1 Credits)

This post-doctoral course is an in-depth study of human growth and development that includes the affects of treatment on growth and development. Prereq: DSOR 5102

Grading Basis: Letter Grade with IP

DSOR 5203 - Diagnosis and Treatment Planning 2 (2.1 Credits)

This post-doctoral course is a continuation of the in-depth study of advanced orthodontic data gathering and interpretation as used in orthodontic diagnosis and treatment planning. Prereq: DSOR 5103.

Grading Basis: Letter Grade with IP

DSOR 5204 - Biomechanics 2 (3.2 Credits)

This post-doctoral course is an in-depth, advanced study of orthodontic biomechanical systems and their effect on the craniofacial and dental structures. Included in this course are the protocols required to treat both skeletal and dental malocclusions. Prereq: DSOR 5104.

Grading Basis: Letter Grade with IP

DSOR 5205 - Research Methodology & Biostatistics 2 (2.1 Credits)

This post-doctoral course is an in-depth study of scientific research methods, study design and organization, data gathering, and the biostatistical tools required to analyze the results of the study. Prereq: DSOR 5105.

Grading Basis: Letter Grade with IP

DSOR 5207 - Treatment Planning 2 (4.3 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Post-doctoral students are required to present patient diagnoses and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students. Prereq: DSOR 5107.

Grading Basis: Letter Grade with IP

DSOR 5208 - Current Literature Review 2 (1.1 Credits)

Course is the study, analysis and discussion of journal articles and topics that are prominent in orthodontics within the previous year. Post-doctoral students critically review and analyze the articles to determine advances in the art and science of orthodontics. Prereq: DSOR 5108.

Grading Basis: Letter Grade with IP

DSOR 5211 - Treatment in Preadolescent Children (1.8 Credits)

This post-doctoral course is a study of the orthodontic and pediatric care of the preadolescent patient, to include preventative and Phase 1 patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOR 5302 - Implants in the Orthodontic Patient (0.9 Credits)

The goals of this course are (1) to familiarize the students with the history, evolution, design, placement, and clinical use of TADs, (2) to leave this program with an understanding of how to incorporate TADs into treatment planning, not just as a bailout mechanism but incorporation of the TADS into the treatment plan at its inception.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOR 5304 - Biomechanics 3 (1.8 Credits)

This post-doctoral course is an in-depth, advanced study of orthodontic biomechanical systems and their effect on the craniofacial and dental structures. Included in this course are the protocols required to treat both skeletal and dental malocclusions. Prereq: DSOR 5104, DSOR 5204.

Grading Basis: Letter Grade with IP

DSOR 5307 - Treatment Planning 3 (3.5 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Post-doctoral students are required to present patient diagnosis and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students. Prereq: DSOR 5107, DSOR 5207.

Grading Basis: Letter Grade with IP

DSOR 5321 - Orthognathic Surgical Treatment (2.1 Credits)

This post-doctoral course is a study of the orthognathic surgical options and treatment of patients, including distraction osteogenesis and other advances in surgical techniques.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 5331 - Management of the TMJ Patient (1.8 Credits)

This post-doctoral course is an advanced course in diagnosing and managing the patient with tempromandibular joint symptoms and dysfunction.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOR 5341 - Fundamentals in Teaching, Learning & Assessment (1 Credit)

This post-doctoral course teaches the student the basics of clinical and didactic teaching to enable the student to successfully participate in the orthodontic instruction of predoctoral students and to interact and teach their non-orthodontist colleagues on completion of the program.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5344 - Advanced Radiology and Radiographic Interpretation (1.8 Credits)

This graduate course in dentistry in oral and maxillofacial radiology includes lectures and case studies in radiation physics, radiation biology, radiation hygiene and radiographic techniques. In addition, this course will provide information on advanced imaging modalities and interpretive skills.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOR 5841 - Research 1 (0.9 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5842 - Research 2 (2.1 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DSOR 5841.

Grading Basis: Letter Grade with IP

DSOR 5843 - Research 3 (2.6 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DSOR 5841, DSOR 5842.

Grading Basis: Letter Grade with IP

DSOR 5931 - Clinical Orthodontics 1 (7.1 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 5932 - Clinical Orthodontics 2 (7.7 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient clinical patient care. Prereq: DSOR 5931.

Grading Basis: Letter Grade with IP

DSOR 5933 - Clinical Orthodontics 3 (7.4 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient clinical patient care. Prereq: DSOR 5931, DSOR 5932.

Grading Basis: Letter Grade with IP

DSOR 6102 - CBCT and Orthodontic Imaging (1 Credit)

This post-doctorate course is an in-depth study of Cone Beam Computed Tomography (CBCT) and how it is used in orthodontic treatment. It covers CBCT and other forms of imaging used in modern orthodontics including 3D intraoral scans.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6103 - Clinical Invisalign (1 Credit)

This post-doctoral course is an in-depth study of the clinical use of Clear Aligner Therapy – specifically Invisalign for treating malocclusion.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6107 - Treatment Planning 4 (4 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Postdoctoral students are required to present patient diagnoses and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students. Prereq: DSOR 5107, DSOR 5207, DSOR 5307.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6108 - Current Literature Review 4 (1 Credit)

Course is the study, analysis and discussion of journal articles and topics that are prominent in orthodontics within the previous year. Post-doctoral students critically review and analyze the articles to determine advances in the art and science of orthodontics. Prereq: DSOR 5108, DSOR 5208, DSOR 5308.

Grading Basis: Letter Grade with IP

DSOR 6111 - Periodontic/Orthodontic Treatment (1 Credit)

This post-doctoral course is a study of the interdisciplinary care of the patient with periodontal and orthodontic needs and includes a review of the literature in conjunction with a periodontist.

Grading Basis: Letter Grade with IP

DSOR 6201 - Ethics & Practice Management (2 Credits)

This graduate course in dentistry is an in-depth study of ethics, practice management, and jurisprudence as it relates to clinical practice. The course includes advanced study and lecture in practice financial and management areas with specific experiences varying with the different specialty areas.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6206 - Dent/Craniofacial Anomalies (2 Credits)

This post-doctoral course is a study of dental and craniofacial anomalies and the orthodontic and surgical treatment of patients. This includes both seminars, case-based and case-presentation study. Prereq: DSOR 5106, DSOR 5206, DSOR 5306, DSOR 6106.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6207 - Treatment Planning 5 (4.3 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Post-doctoral students are required to present patient diagnoses and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students. Prereq: DSOR 5107, DSOR 5207, DSOR 5307, DSOR 6107.

Grading Basis: Letter Grade with IP

DSOR 6208 - Current Literature Review 5 (1.1 Credits)

Course is the study, analysis and discussion of journal articles and topics that are prominent in orthodontics within the previous year. Post-doctoral students critically review and analyze the articles to determine advances in the art and science of orthodontics. Prereq: DSOR 5108, DSOR 5208, DSOR 5308, DSOR 6108.

Grading Basis: Letter Grade with IP

DSOR 6209 - Surgical Anatomy & Osteology (1.1 Credits)

This course emphasizes head and neck anatomy that is related to surgical procedures treatment planned/performed by dental specialists. Surgical complications related to anatomy will be covered. A prosection of human cadavers will be reviewed with emphasis on surgical anatomy and techniques for sinus augmentation.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 6844 - Research 4 (4 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DSOR 5841, DSOR 5842, DSOR 5843.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6845 - Research 5 (5.3 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DSOR 5841, DSOR 5842, DSOR 5843, DSOR 6844.

Grading Basis: Letter Grade with IP

DSOR 6934 - Clinical Orthodontics 4 (9.4 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient clinical patient care. Prereq: DSOR 5931, DSOR 5932, DSOR 5933.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 6935 - Clinical Orthodontics 5 (10.2 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontics to provide high quality and efficient clinical patient care. Prereq: DSOR 5931, DSOR 5932, DSOR 5933, DSOR 6934.

Grading Basis: Letter Grade with IP

DSOR 6936 - Review for American Board Examination (1.1 Credits)

This postgraduate course in dentistry is an advanced review course in published orthodontic research studies and techniques in preparation for taking the written portion of the American Board of Orthodontics written examination. Restrictions: Successful completion of Year 1 of the postgraduate Program in Orthodontics.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7107 - Treatment Planning 6 (3.5 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Post-doctoral students are required to present patient diagnoses and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students. Prereq: DSOR 5107, DSOR 5207, DSOR 5307, DSOR 6107, DSOR 6207.

Grading Basis: Letter Grade with IP

DSOR 7108 - Current Literature Review 6 (0.9 Credits)

Course is the study, analysis and discussion of journal articles and topics that are prominent in orthodontics within the previous year. Post-doctoral students critically review and analyze the articles to determine advances in the art and science of orthodontics. Prereq: DSOR 5108, DSOR 5208, DSOR 5308, DSOR 6108, DSOR 6208.

Grading Basis: Letter Grade with IP

DSOR 7112 - Orthodontic Clinical Teaching 1 (3.5 Credits)

This post-doctoral course requires the student to teach basic orthodontic diagnostic and treatment techniques to the predoctoral dental student.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOR 7207 - Treatment Planning 7 (4 Credits)

This post-doctoral course is the case-based study of advanced orthodontic treatment planning. Post-doctoral students are required to present patient diagnoses and proposed treatment plans for faculty and student discussion, to include treatment modality presentations by students. Prereq: DSOR 5107, DSOR 5207, DSOR 5307, DSOR 6107, DSOR 6207, DSOR 7107.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 7208 - Current Literature Review 7 (1 Credit)

Course is the study, analysis and discussion of journal articles and topics that are prominent in orthodontics within the previous year. Post-doctoral students critically review and analyze the articles to determine advances in the art and science of orthodontics. Prereq: DSOR 5108, DSOR 5208, DSOR 5308, DSOR 6108, DSOR 6208, DSOR 7108.

Grading Basis: Letter Grade with IP

DSOR 7212 - Orthodontic Clinical Teaching 2 (4 Credits)

This post-doctoral course requires the student to teach basic orthodontic diagnostic and treatment techniques to the predoctoral dental student.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 7300 - Current Literature Review 8 (0.6 Credits)

This postgraduate course in dentistry is an advanced course studying orthodontic literature, concentrating on evidence based orthodontic treatment.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7307 - Treatment Planning 8 (2.3 Credits)

This postgraduate course in dentistry is an advance course studying orthodontic treatment diagnosis, treatment planning and treatment results.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7311 - Scientific Writing & Evaluation (1.8 Credits)

This graduate course in dentistry is an in-depth study of scientific writing to prepare the student to evaluate the literature as well as to prepare a scientific manuscript for publication.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSOR 7312 - Orthodontic Clinical Teaching 3 (1.1 Credits)

This post-doctoral course requires the student to teach basic orthodontic diagnostic and treatment techniques to the pre-doctoral dental student.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7846 - Research 6 (5.3 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DSOR 5841, DSOR 5842, DSOR 5843, DSOR 6844, DSOR 6845.

Grading Basis: Letter Grade with IP

DSOR 7847 - Research 7 (6 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DSOR 5841, DSOR 5842, DSOR 5843, DSOR 6844, DSOR 6845, DSOR 7846.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 7848 - Research 8 (2.8 Credits)

Postgraduate course study requiring student to select research topic, define research question, do literature search on the topic, organize research project, carry out project, collect and analyze the results and write a publishable manuscript on the project.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7934 - Clinical Orthodontics 8 (7.6 Credits)

This postgraduate course involves the advanced treatment orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient clinical patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7936 - Clinical Orthodontics 6 (8.4 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient clinical patient care. Prereq: DSOR 5931, DSOR 5932, DSOR 5933, DSOR 6934, DSOR 6935.

Grading Basis: Letter Grade with IP

DSOR 7937 - Clinical Orthodontics 7 (9.8 Credits)

This post-doctoral course involves the advanced treatment of orthodontic problems and patient care. Supervision is provided by educationally qualified orthodontists to provide high quality and efficient clinical patient care. Prereq: DSOR 5931, DSOR 5932, DSOR 5933, DSOR 6934, DSOR 6935, DSOR 7936.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 7938 - Clinical Problems 1 (0.9 Credits)

Course is a case-based course to study clinical problems encountered in the practice of orthodontics by the orthodontic specialist. It requires the student to analyze and then present the records of patients who encountered less than ideal results during treatment.

Grading Basis: Letter Grade with IP

DSOR 7939 - Clinical Problems 2 (1 Credit)

Course is a case-based course to study clinical problems encountered in the practice of orthodontics by the orthodontic specialist. It requires the student to analyze and then present the records of patients who encountered less than ideal results during treatment.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 7940 - Orthodontic Retention I (1 Credit)

Retention techniques, clinical studies in retention, and study of post-treatment changes in orthodontic patients. Prereq: Successfully completing Years 1 and 2 of the postgraduate program in Orthodontics and Dentofacial Orthopedics.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSOR 7941 - Orthodontic Retention II (2.3 Credits)

Retention techniques, clinical studies in retention, and study of post-treatment changes in orthodontic patients. Prereq: Successfully completing years 1 and 2 of the postgraduate program in Orthodontics and Dentofacial Orthopedics and successful completion of the DSOR 7940.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSOR 8317 - Advanced Diagnosis of Oral Lesions (0.6 Credits)

The course in Advance Diagnosis of oral lesions is a 10 clock hour course that covers the assessment and management of odontogenic cysts and tumors, mucosal soft tissue disease, oral cancer and pre-cancer, and fibro-osseous lesions of the jaws. The course is taught using a clinicopathologic conference and seminar format.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

Orthopedics (ORTH)

ORTH 5004 - Orthopedic Summer Externship (12 Credits)

The University of Colorado's Department of Orthopedics offers a six-week summer externship program for medical students interested in orthopedics. The program provides structured research courses and research opportunities, as well as early exposure to clinical orthopedics for students between their first and second year of medical school.

Prereq: Rising MS2.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

ORTH 5005 - Introduction to Orthopedics (1 Credit)

This course consists of 14 weekly one-hour classroom sessions including interactive lectures covering the orthopedic subspecialties, small group discussion and case presentations. An elective reading list is provided. There are also four one-half day shadowing opportunities in the operating room and clinics. Student evaluation is pass/fail by attendance.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

ORTH 8001 - Orthopaedic Primary Care (4-8 Credits)

2-4 wks. Max:4. This course is designed as an elective in musculo-skeletal medicine in route to a career in primary care or other overlapping field. The focus is on outpatient musculoskeletal medicine. Restrictions: Offered spring semester.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Spring.

ORTH 8002 - Ortho Advanced Career Elective (8 Credits)

This advanced career elective is designed to offer extensive orthopedic medical knowledge and clinical experience to students who have completed ORTH 8000 and are seeking additional orthopedic training that would normally be obtained through elective away rotations. Must have completed ORTH 8000 AI.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Summer.

ORTH 8005 - Sports Medicine (4-8 Credits)

Max:1. Course provides clinical experience in musculo-skeletal sports medicine. Students will primarily be based in the CU Sports Medicine Clinic. Opportunities include participation in the clinic, operating room and the training room.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

ORTH 8006 - Alpine Orthopedics (8 Credits)

Orthopedic elective (4 weeks) designed for students on the path to orthopedic surgery residency who are seeking education and experience in a small mountain community. The course will be based out of Crested Butte, CO which has a high volume of sports injuries. Course will also offer exposure to rural orthopedics in Gunnison & Telluride.

Prerequisite: Must have completed ORTH 8000 and be applying to orthopedic residency

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

ORTH 8007 - Intro to Clinical Orth Surgery (4-8 Credits)

Introduction to Orthopedic Surgery is designed to prepare fourth year medical students for sub-internship rotations in Orthopedic Surgery.

Course includes lectures in anatomy, common injuries, treatment plans, and surgical intervention for eight sub-specialties of Orthopedics including: Trauma, Spine, Hand, Pediatrics, Sports, Adult Recon.

Requisite: Students who plan to complete a sub-internship in Orthopedics and who are planning to pursue an orthopedic residency.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Spring.

ORTH 8100 - ORTH Elective Away (8 Credits)

This Orthopedic elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Officer 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

ORTH 8600 - Research in Orthopedics (4-8 Credits)

4-12 wks. Provides an opportunity to participate in research at the clinical or basic science level. The student should contact the Departmental Office 3-4 months in advance to arrange a meeting with a member of the Orthopaedics faculty to define a project. Prereq: Approval from Course Director and Associate Dean for Student Affairs required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

ORTH 8630 - ORTH Research Away (4-16 Credits)

This Orthopedic research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

Otolaryngology (OTOL)

OTOL 6660 - Otolaryngology Career Elective (1 Credit)

The Career Elective in Otolaryngology - Head & Neck Surgery will provide diverse sub-specialty clinical and operative exposure with physician specialists who diagnose and treat disorders of the ears, nose, throat and related structures of the head and neck.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

OTOL 8000 - Clinical Otolaryngology (8-16 Credits)

4 or 6 wks. Max:3. Recommended for students considering an ENT career. Offers in-depth clinical and operative exposure. Also useful for those seeking primary care to further hone head and neck exam skills and treatment of ENT pathology.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

OTOL 8050 - Otolaryngology (ENT) (4 Credits)

Patient care in relation to head and neck - ear, nose and throat ailments. Students will experience both outpatient and inpatient interactions. Will see procedures in clinic as well as in the operating room and participate in rounds at the hospital.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

OTOL 8100 - OTOL Elective Away (4-8 Credits)

This Otolaryngology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

OTOL 8600 - Research Otolaryngology (4-24 Credits)

4-12 wks. Objectives: 1) work in supervised environment to gain appreciation for research design, criticism and statistical analysis: 2) complete research project with potential to publish in peer-reviewed journal. Prereq: Prior approval from Associate Dean and course director required to register.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

OTOL 8630 - OTOL Research Away (4-16 Credits)

This Otolaryngology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

Palliative Care (PALC)

PALC 6110 - Basic Pain Assessment & Management: IDT Care (3 Credits)

This course reviews basic pain pathophysiology, assessment, non-pharmacological interventions, and non-opioid and opioid pharmacological pain management. Integrated with IDT topics related to pain such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6120 - Advanced Concepts in Pain Management (3 Credits)

This course focuses on methadone, opioid infusions, interventional pain management, and other complex modalities. This class focuses on ethics and psychosocial issues including pain in the face of addiction and public policy around opioids and REMS. Prerequisites: PALC 6110 and 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6210 - IDT Care for Symptoms: Part A (3 Credits)

Course covers the assessment and management of eight common non-pain symptoms (e.g. anorexia, asthenia, constipation and nausea/vomiting). Integrated with IDT topics related to symptom assessment/management such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6220 - IDT Care for Symptoms: Part B (3 Credits)

This course covers the assessment and management of eight different common non-pain symptoms (e.g. dyspnea, cough, and insomnia). Integrated with IDT topics related to symptom assessment/management such as psychological, social & spiritual distress and ethical standards of practice.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6310 - Advanced Illness in Special Settings: Part A (3 Credits)
Assessment\ management of 8 chronic illnesses (cardiopulmonary, end stage liver and renal diseases) emphasis on early PC combined with disease focused therapy. Attention: prognostication and transitions into palliative/hospice care or discontinuing treatments including bioethical review and IDT support. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6320 - Advanced Illness in Special Settings: Part B (3 Credits)
Assessment/management of cancer and HIV as chronic illness with emphasis on early palliative care combined with disease focused therapy. Attention to prognostication, transition into palliative/hospice care.

Paired with Spiritual Care review of challenging spiritual issues, hope, miracles and rituals. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6330 - Advanced Illness in Special Settings: Part C (3 Credits)
Assessment/management of neurodegenerative disorders as chronic illness with emphasis on early palliative care combined with disease focused therapy. Attention to prognostication and transitions into palliative/hospice care. Paired with bioethical review and comfort care for the imminently dying. Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6410 - Death & Dying: Unique Role of the AHP (3 Credits)
This course focuses on methadone, opioid infusions, interventional pain management, and other complex modalities. This class focuses on ethics and psychosocial issues including pain in the face of addiction and public policy around opioids and REMS. For AHP students only.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6510 - Palliative Care Core Concepts - Principles, & Communication (3 Credits)

Online and on-campus intensive (some physical presence required) on palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Requirement: Restricted to PALC MS or certificate students

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6511 - Online: Core Concepts, Principles & Commun. Skills (2 Credits)

Online discussion of palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Co-Requisite: PALC 6512

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6512 - Intensive: Core Topics, Principles & Commun. Skills (1 Credit)

On-campus, in-person intensive (physical presence required) discussion of palliative care topics including: models of care, early palliative care integration, whole person assessment, meaning of illness, and demonstration of advanced communications skills. Special focus on treatment plans with simulated patients/families. Co-Requisite: PALC 6511

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6520 - Communication Skill Refinement: IDT Collaboration (3 Credits)

Online and on-campus intensive (some physical presence require). Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients\ families.

Prerequisite: PALC 6510

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PALC 6521 - Online: Comm. Skill Refinement: IDT Collaboration (2 Credits)

Online. Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients\ families. Co-Requisite: PALC 6522

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6522 - Intensive: Comm. Skill Refinement: IDT Collaboration (1 Credit)

On-campus, in-person intensive (physical presence required). Advanced topics in PC including refinement of advance PC skills covered Year 1 (e.g. communication) to ensure effectively application to your PC practice; demonstration of psycho#social#spiritual assessment integrated in treatment plans with simulated patients\ families. Co-Requisite: PALC 6521

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6531 - Online: Palliative Care Integrated in Your Community (2 Credits)

Online. Demonstrate advanced PC communications skills & management of complex pain and symptoms; apply ethical training and practical experience with supportive interventions to help preserve dignity, achieve closure and have peace at life's end. Co-Requisite: PALC 6532

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6532 - Intensive: Pall Care Integrated in Your Community (1 Credit)

On-campus, in-person intensive (physical presence required). Demonstrate advanced PC communications skills & management of complex pain and symptoms; apply ethical training and practical experience with supportive interventions to help preserve dignity, achieve closure and have peace at life's end. Co-Requisite: PALC 6531

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PALC 6910 - Systems Topics: Preparation to Capstone (3 Credits)
 Palliative Care Research, Quality Improvement, Health Care Policy and Advocacy and Palliative Care Program development including institutional needs assessment and program planning. Instruction to become a PC Educator, development of professional resilience and role of medical humanities. Prerequisite: PALC 6511/PALC 6512
 Grading Basis: Letter Grade with IP
 A-GRAD Restricted to graduate students only.
 Typically Offered: Fall, Spring, Summer.

PALC 6950 - Capstone Project (3 Credits)
 MS Palliative Care Capstone Project. Students will design, implement, evaluate, and present the result of a research, QI, education, advocacy, or medical humanities project during year 2 with mentorship from faculty. Results presented at final on-campus course (PALC 6530). Prerequisites: PALC 6910 and PALC 6520
 Grading Basis: Letter Grade with IP
 A-GRAD Restricted to graduate students only.
 Additional Information: Report as Full Time.
 Typically Offered: Spring.

PALC 6960 - Masters Thesis in Palliative Care (1-3 Credits)
 Masters thesis work in Palliative Care. Final results presented at final on-campus course (PALC 6530). Prerequisite: PALC 6910 and 6520
 Grading Basis: Letter Grade with IP
 Repeatable. Max Credits: 12.
 A-GRAD Restricted to graduate students only.
 Additional Information: Report as Full Time.
 Typically Offered: Fall, Spring, Summer.

Pathology (PATH)

PATH 8000 - Pathology (4-8 Credits)
 2-4 weeks. Max:2. The Department assigns hospital by interests of the student. Anatomic pathology includes autopsy, surgical pathology, hematopathology and cytology. Clinical pathology includes clinical chemistry, microbiology, coagulation/blood banking and molecular diagnosis. Intended for those interested in clinical medicine, especially a pathology career.
 Grading Basis: Medical School HP
 Repeatable. Max Credits: 8.
 Typically Offered: Fall, Spring, Summer.

PATH 8100 - PATH Elective Away (8 Credits)
 This Pathology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.
 Grading Basis: Pass Fail with IP
 Repeatable. Max Credits: 8.
 Typically Offered: Fall, Spring, Summer.

PATH 8600 - Research in Pathology (4-24 Credits)
 2-12 wks. Prereq: Department approval must be obtained and all arrangements made at least one month in advance. The student must also receive approval from the Associate Dean for Student Affairs.
 Grading Basis: Pass Fail with IP
 Repeatable. Max Credits: 24.
 Typically Offered: Fall, Spring, Summer.

PATH 8630 - PATH Research Away (4-16 Credits)
 This Pathology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.
 Grading Basis: Pass Fail with IP
 Repeatable. Max Credits: 16.
 Typically Offered: Fall, Spring, Summer.

PATH 8990 - Doctoral (1-10 Credits)
 Grading Basis: Letter Grade
 Repeatable. Max Credits: 10.

Pediatric Dentistry (DSPD)

DSPD 6620 - Pediatric Dentistry 1 (0.1-5 Credits)
 Basic principles of clinical diagnosis and treatment of the child patient are introduced. Developmental aspects of the formation of the craniofacial complex are applied to clinical management of space maintenance, pupal, restorative, and behavior management problems.
 Grading Basis: Letter Grade with IP
 Typically Offered: Spring.

DSPD 6630 - Pediatric Dentistry 2 (0.1-5 Credits)
 Introductory courses in pediatric dentistry providing foundational knowledge for subsequent participation in pediatric dentistry clinical rotations. Laboratory and didactic components provide knowledge and skills for restorative treatment during the primary, transitional, and young permanent dentition phases.
 Grading Basis: Letter Grade with IP
 Typically Offered: Summer.

DSPD 7011 - Clinical Pediatric Dentistry 1 (0.1-5 Credits)
 Clinical rotation in pediatric dentistry.
 Grading Basis: Satisfactory/Unsatisfactory w/IP
 Typically Offered: Fall.

DSPD 7022 - Clinical Pediatric Dentistry 2 (0.1-5 Credits)
 Clinical rotation in pediatric dentistry.
 Grading Basis: Satisfactory/Unsatisfactory w/IP
 Typically Offered: Spring.

DSPD 7033 - Clinical Pediatric Dentistry 3 (0.1-5 Credits)
 Clinical rotation in pediatric dentistry.
 Grading Basis: Letter Grade with IP
 Typically Offered: Summer.

DSPD 7700 - Pediatric Dentistry 3 (0.1-5 Credits)
 Course emphasizes diagnostic and treatment considerations for pediatric patients, including lecture materials and case presentations to facilitate a good working knowledge of treatment planning/procedures covering sedation techniques as well as traumatic injuries, hospital dentistry and medically compromised patients.
 Grading Basis: Satisfactory/Unsatisfactory w/IP
 Typically Offered: Fall.

DSPD 8855 - Clinical Pediatric Dentistry (0.1-5 Credits)
 Course is a continuation from initial clinical courses and provides further experience in developmental, behavioral, preventive, diagnostic, and therapeutic care on a comprehensive basis for pediatric patients in the primary, transitional, and permanent dentition phases and patients with special health care needs.
 Grading Basis: Letter Grade with IP
 Repeatable. Max Credits: 6.
 Typically Offered: Fall.

Pediatrics (PEDS)

PEDS 8000 - Pediatric AI (8 Credits)

4 wks. Max:3. This course can meet Sub-I qualifications. Designed for those students who are interested in further training in pediatrics. Students will be integrated as a functional member of a pediatric ward team. Restrictions: A 2-month advance notice is required to drop this course.

Grading Basis: Medical School HP

PEDS 8003 - Community Prenatal and Perinatal Care Elective (4 Credits)

This 2-week elective will include exposure to the outpatient prenatal and postnatal obstetrical care of a patient population struggling with the social determinants of health. The student will gain a deeper understanding of the effects of the social determinants of health in the peri/postnatal setting and will experience the resources that support prenatal and postnatal patients. They will experience full spectrum prenatal and postnatal care from the OB intake assessment (including behavioral health assessment) to the post-partum visits and initial well childcare.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

PEDS 8004 - Pediatric Cardiology (8 Credits)

4 wks. Max:1. Evaluation of children with heart disease by history, physical examination, electrocardiography, roentgenography, echocardiography, and cardiac catheterization will be stressed. The student will make rounds with the cardiology team, see consults, attend outpatient clinics, and participate in cardiac catheterizations and conferences.

Grading Basis: Medical School HP

PEDS 8005 - Allergy and Immunology CHCO (4-8 Credits)

The student will work alongside allergy and immunology providers and share in the care of patients from clinic, as well as inpatient consults. Opportunities will be provided to observe skin testing, food/drug challenges, immuno-therapy, and pulmonary function testing. Offer 2, 4 wk

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Spring, Summer.

PEDS 8007 - Child Abuse and Neglect (4-8 Credits)

2 wks. Max:1. Held at TCH and Kempe Center. Basic principles of Child Abuse and Neglect; participate in team evaluation of outpatient and inpatient child abuse cases, and attend court with team members. Primarily observational and includes independent study. One case write-up required. Restrictions: Not available sections 21-24.

Grading Basis: Medical School HP

PEDS 8008 - Birth Defects/ Genetics (4-8 Credits)

4,6,8,or 12 wks. Max:1. Rotation includes experience in the General Genetics, Inherited Metabolic Diseases, Muscle, Neurocutaneous and outreach clinics. Students will participate in diagnosis, pedigree assessment and management. Students will participate in consultations with faculty, attend conferences, visit laboratories; an oral presentation is required.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

PEDS 8009 - Peds Infectious Disease (8 Credits)

4 wks. Max:1. This course provides experience in the pathophysiology, diagnosis, and therapy of childhood infections. Students evaluate in-patients and present cases at daily teaching rounds. Experience in the diagnostic Microbiology laboratory is provided. There is a weekly HIV/ infectious disease clinic.

Grading Basis: Medical School HP

PEDS 8011 - Pediatric Pulmonary (8 Credits)

Max:1. Basic background knowledge in pediatric pulmonary physiology and disease will be provided. The student will attend rounds, clinics and weekly conferences and participate in hospital consultations. Students will be expected to present a seminar/case discussion on a pediatric pulmonary topic. Weeks offered 4

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

PEDS 8012 - Pediatric Neurology (4-8 Credits)

4,6, or 12 wks. Max:1. Child Neurology provides students with the opportunity to gain experience evaluating children with a wide variety of neurological problems. Students will round on hospital and clinic patients, complete assigned readings and attend Neurology grand rounds.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

PEDS 8013 - Pediatric Endocrinology (4-8 Credits)

Max:1. A large variety of patients with abnormalities of growth and pubertal development, thyroid disorders, and diabetes mellitus are reviewed and treated each week. Seminars on selected topics are scheduled three times per week. Weeks offered 4.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8014 - Pediatric Rheumatology Clinical Elective (4-8 Credits)

Course description to be added later in OAsis

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8015 - Pediatric Neonatology AI (8 Credits)

4 wks. Max:3. This course can meet Sub-I qualifications. Student assigned to UCH, DHMC, or TCH and will participate actively in the care of critically-ill infants including work rounds, attending rounds, conferences and night call. Experience will be gained in procedures and ventilator management.

Grading Basis: Medical School HP

PEDS 8018 - General Academic Peds (4-8 Credits)

Max:1. This course offers exciting experience in ambulatory pediatrics at The Children's Hospital. There are 9 educational conferences per week.

No night call. offer 2 wks

Grading Basis: Medical School HP

PEDS 8020 - Adolescent Medicine (4-8 Credits)

4 wks. Max:1. Provides basic knowledge and clinical skills in diagnosis and management of medical problems during adolescence. Including development of skills in interviewing and counseling adolescents in various health care settings. Students will prepare and present a seminar/case discussion on this topic.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8021 - Pediatric Disability Medicine (8 Credits)

Pediatric Disability Medicine is a four-week course designed to give students exposure to important concepts of disability, issues affecting children with disabilities and their families, multidisciplinary clinical care of this population and an introduction to transition to adulthood.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8022 - Peds Gastroenterology (8 Credits)

Max:1. Clinical rotation on pediatric gastroenterology inpatient and outpatient services and procedure unit and scheduled conferences. This rotation is designed for students with a specific interest in pediatrics and/or gastroenterology.

Grading Basis: Medical School HP

PEDS 8024 - Child Development/Behavior (4-8 Credits)

2 or 4 wks. Max:1. Medical students will participate in the medical assessment and treatment of children with developmental and behavioral problems. They will attend lectures, participate in the seminars, and observe multidisciplinary assessments of children with developmental disorders.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

PEDS 8025 - Peds Emergency Medicine (4-8 Credits)

Max:1. Students gain experience in assessment/management of common conditions in a pediatric emergency department including minor emergencies, acutely ill children, and traumatic diagnoses. Procedural experience at student's level, and at attending's discretion, will also be gained.

Grading Basis: Medical School HP

PEDS 8026 - Pediatric Nephrology (4-8 Credits)

4 wks. Max:1. Students will actively participate in the care and evaluation of patients under the direction of the attending and participating resident. Common problems such as hematuria, proteinuria, electrolyte disturbances, chronic renal insufficiency, hypertension, hemodialysis, peritoneal dialysis, and renal transplantation are addressed.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PEDS 8027 - Pediatric ICU AI (8 Credits)

4 wks. Max:1. This course can meet Sub-I qualifications. The sub-intern is responsible for evaluation and continuing care of patients under the supervision of a Fellow and Attending. The student will learn basic pathophysiology of critical illness and enhance skills in reporting and interpreting clinical data, and patient management. Prereq: IDPT 7020 Infant/Adolescent Care.

Grading Basis: Medical School HP

PEDS 8029 - Breastfeeding Management (4 Credits)

2 wks. Max:2. An introduction to breastfeeding as a medical topic, with precepting by lactation specialists at clinical sites and self-directed learning through complementary activities. Assessment and management of mother/infant breastfeeding dyad is emphasized.

Contact Dr. Bunik two weeks before start or Laura.Primak@uchsc.edu.

Grading Basis: Medical School HP

PEDS 8030 - Vaccination in Pediatrics (4-8 Credits)

4 wks. Max:2. Students develop extensive knowledge in ambulatory general pediatrics with an emphasis on vaccine preventable diseases. Experiences include didactics on vaccination, vaccine screening, advocacy, and report writing. Exposure to laboratory vaccine research supported but requires availability. Prereq: MS III Pediatric Rotation.

Grading Basis: Medical School HP

PEDS 8031 - Pediatric Hematology/Oncology (8 Credits)

Students will participate in the clinical activities of the Pediatric Hematology-Oncology Service, both inpatient and outpatient. They will be involved in patient care, perform procedures including lumbar punctures and bone marrow aspirated/biopsies, and attend relevant conferences. Prereq: Successful completion of all third year clerkships. No restrictions at this time. Course will also be offered to externs.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PEDS 8100 - PEDS Elective Away (4-8 Credits)

This Pediatric elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PEDS 8600 - Research in Pediatrics (4-24 Credits)

2-12 wks. Prereq: Student must receive departmental approval one semester in advance of rotation. Approval from the Associate Dean for Student Affairs required. Restrictions: Sections 49-50 not available.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 32.

PEDS 8630 - PEDS Research Away (4-16 Credits)

This Pediatric research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

Periodontics (DPER)

DPER 5105 - Research Methodology & Biostatistics 1 (0.1-11 Credits)

This graduate course in dentistry is an in-depth study of scientific research methods, study design and organization, data gathering, and the biostatistical tools required to analyze the results of a study and carryout a scientific research project.

Grading Basis: Letter Grade

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 5205 - Research Methodology & Biostatistics 2 (0.1-11 Credits)

This graduate course in dentistry is an advanced in-depth study of scientific research methods, study design and organization, data gathering, and the biostatistical tools required to analyze the results of a study. In addition, this course requires the student to prepare a research proposal.

Grading Basis: Letter Grade

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 6209 - Surgical Anatomy and Osteology (0.1-11 Credits)

Presentation of surgical anatomy related to procedures that a periodontist would perform. Comprehensive osteology is reviewed to prepare the orthodontic resident for board certification with also an emphasis on surgical procedures relevant to the orthodontist.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 7100 - Periodontics Specialty Clinic 1 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPER 7101 - Periodontal Current Literature (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed.

Requisite: Department Consent.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Summer.

DPER 7103 - Periodontal Literature Review Seminar I (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed.

Requisite: Department consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Summer.

DPER 7110 - Advanced Radiology and Radiographic Interpretation (0.1-11 Credits)

This graduate course in dentistry in oral and maxillofacial radiology lectures and case studies in radiation physics, radiation biology, radiation hygiene and radiographic techniques. In addition, this course will provide information on advanced imaging modalities and interpretative skills.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7111 - Advanced Periodontal Concepts (0.1-11 Credits)

This postdoctoral course is an intense review of periodontal procedures, in which residents are also instructed in periodontal case documentation procedures, intraoral photography, record keeping and clinical protocol.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPER 7112 - Postgraduate Dental Implantology Seminar 1A (0.7 Credits)

In this initial lecture and seminar course, relevant readings in the dental literature relating to specific topics in dental implantology are assigned and critically discussed. a variety of cases are treatment planned by the residents. (Part 1 of three- semester course).

Grading Basis: Letter Grade

DPER 7113 - Oral Medicine and Clinical Diagnosis (0.1-11 Credits)

In this postdoctoral course, students review a variety of oral diseases and accepted methods of treatment of those as well as systemic diseases manifested in the oral cavity.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7114 - Physical Diagnosis (0.1-11 Credits)

his course will emphasize the art and science of medical history and physical assessment of dental patients. Anatomy, physiology, techniques of examination and clinical relevance for various body systems will be discussed at length.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7115 - Interdisciplinary Course 1A (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department Consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPER 7120 - Advanced Periodontal Biology (3 Credits)

Grading Basis: Letter Grade

DPER 7200 - Periodontics Specialty Clinic 2 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures. Prereq: DPER 7100.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7201 - Periodontics Current Literature 1A (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed.

Requisite: Department Consent Required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 7202 - Periodontics Treatment Planning 1A (0.3 Credits)

In this postdoctoral seminar course, Periodontics and GPR residents present a documentation database, diagnosis and treatment plans for patients treated communally in these two clinics. (Part 1 of two-semester course).

Grading Basis: Letter Grade

DPER 7203 - Periodontal Literature Review Seminar 1A (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7204 - Periodontal Case Presentations Seminar 1A (0.1-11 Credits)

In this postdoctoral course, residents prepare and present a complete documentation database, diagnostic/ prognosis, treatment plan, treatment procedures, and evaluation of treatment results in formal case presentations simulating the oral examination for the American Board of Periodontology. (Part 1 of two- semester course).

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7210 - Advanced Periodontal Biology (0.1-11 Credits)

This postdoctoral course develops a fundamental understanding of the microscopic anatomy, cell biology and physiology of the periodontal tissues in health, during disease progression, and following periodontal therapy.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7211 - Pain Control & Sedation/Comprehensive Pain Management (0.1-11 Credits)

This is a postgraduate course for pain control and sedation and evaluation of patients to determine appropriate modalities of pain and anxiety control. Department Consent Required.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7212 - Postgraduate Dental Implantology Seminar 1B (0.1-11 Credits)

In this initial lecture and seminar course, relevant readings in the dental literature relating to specific topics in dental implantology are assigned and critically discussed. A variety of cases are treatment planned by the residents. (Part 2 of three- semester course). Prereq: DPER 7112.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7215 - Interdisciplinary Course 1B (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

DPER 7216 - Pharmacology 1 (0.1-11 Credits)

Review General Principles: Current pharmacology for the medical management of pain, infection, & selected systemic diseases; & adverse drug events. Based on the 200 drugs dispensed by US community pharmacies for prevention, diagnosis, and treatment of disease, special reference/dent. Requisite: Department Consent Required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Typically Offered: Fall.

DPER 7219 - Dental and Medical Emergency Management (0.1-11 Credits)

This is a pragmatic course to familiarize the resident with dental and medical emergencies that may present during patient care. Major texts on medical emergency management and the medically compromised patient are used as a guideline. Department consent required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 7220 - Research and Methodology and Biostatistics I (2.5 Credits)

Course is designed to introduce periodontal residents to critical thinking, research methodology, and evidenced-based practice skills. Topics include basic assumptions and concepts of biomedical research, writing skills, and experimental design.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 7300 - Periodontics Specialty Clinic 3 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures. Prereq: DPER 7100, DPER 7200.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7301 - Periodontics Current Literature 1B (0.1-11 Credits)

This postdoctoral course encompasses a review of the latest dental and medical journals for the most recent information related to the art, science, and practice of periodontics. Students prepare abstracts to be discussed at scheduled seminars. (Part 2 of two-semester course). Prereq: DPER 7201.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7302 - Periodontics Treatment Planning 1B (0.5 Credits)

In this postdoctoral seminar course, Periodontics and GPR residents present a documentation database, diagnosis and treatment plans for patients treated communally in these two clinics. (Part 2 of two-semester course). Prereq: DPER 7202.

Grading Basis: Letter Grade

DPER 7303 - Periodontal Literature Review Seminar 2 (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed. Prereq: DPER 7203.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7304 - Periodontal Case Presentations Seminar 1B (0.1-11 Credits)

In this postdoctoral course, residents prepare and present a complete database, diagnostic/prognosis, treatment plan, treatment procedures, and evaluation of treatment results in formal case presentations simulating the oral examination for the American Board of Periodontology. (Part 2 of two-semester course). Prereq: DPER 7204.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7305 - Periodontal Research 1 (0.1-11 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and analyze the results, and write a publishable manuscript on the project.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 7308 - Ethics, Financial and Practice Management 1 (0.1-11 Credits)

This course provides the periodontal resident with the information needed for successful personal financial and practice management. Curriculum will rotate over a three year cycle to include personal financial management, human resources, accounting, legal, and dental practice management. Department Consent Required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 7311 - Pain Control & Sedation/Comprehensive Pain Management 2 (1 Credit)

This is a postgraduate course in pain control and sedation, and evaluation of patients to determine appropriate modalities of pain and anxiety control. (Part 2 of two-semester course) Prereq: DPER 7211.

Grading Basis: Letter Grade

DPER 7312 - Postgraduate Dental Implantology Seminar 1C (1 Credit)

In this initial lecture and seminar course, relevant readings in the dental literature relating to specific topics in dental implantology are assigned and critically discussed. A variety of cases are treatment planned by the residents. (Part 3 of three- semester course). Prereq: DPER 7112, DPER 7212.

Grading Basis: Letter Grade

DPER 7315 - Interdisciplinary Course 1C (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department Consent Required:

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DPER 7316 - Pharmacology II (0.1-11 Credits)

Review General Principles: Current pharmacology for the medical management of pain, infection, & selected systemic diseases; & adverse drug events. Based on top 200 drugs dispensed by US pharmacies for prevention, diagnosis, and treatment of disease, special reference/dent.

Prerequisites: Department Consent Required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Typically Offered: Spring.

DPER 7317 - Implant Provisionalization for the Periodontal Residen (0.1-11 Credits)

This course serves as a didactic and laboratory course to develop competency in implant provisionalization.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 7320 - Research Methodology and Biostatistics 2 (0.1-11 Credits)

This postdoctoral course is an in-depth study of scientific research methods, study design and organization, data gathering, and the Biostatistical tools required to analyze the results of the study. Prereq: DPER 7220.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8100 - Periodontics Specialty Clinic 4 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures. Prereq: DPER 7100, DPER 7200, DPER 7300.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPER 8101 - Periodontal Current Literature 2 (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed. Requisite: Department consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Summer.

DPER 8102 - Periodontal Literature Review Seminar 2 (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed. Requisite: Department consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Summer.

DPER 8105 - Periodontal Research 2 (0.1-11 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DPER 7305.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPER 8106 - Anesthesiology (0.1-11 Credits)

This is a hospital based seminar and clinical course to familiarize the resident in patient evaluation, pharmacology, airway management IV techniques, and general anesthesia procedures.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DPER 8113 - TMJ Clinic 1A (Rotation) (0.3 Credits)

TMJ disorders are reviewed and treatment provided using a variety of pharmacologic, mechanical, and biofeedback methods in these clinic sessions. Prereq: DPER 7313.

Grading Basis: Letter Grade

DPER 8115 - Interdisciplinary Course 2A (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPER 8116 - Management of Orofacial Pain (0.1-11 Credits)

This course focuses on the structure, function, and pathofunction of the cranio-cervical region and stomatognathic system emphasizing different diagnosis and case-specific management utilizing evidenced-based decision making. Department consent required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 8120 - Head and Neck Anatomy (0.1-11 Credits)

This postdoctoral course is an advanced study of head and neck anatomy as it relates to periodontal patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 8140 - Scientific Wrtng & Eval (1.5 Credits)

Grading Basis: Letter Grade

DPER 8200 - Periodontics Specialty Clinic 5 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures. Prereq: DPER 7100, DPER 7200, DPER 7300, DPER 8100.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 8201 - Periodontal Current Literature 2A (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed. Requisite: Department Consent Required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 8202 - Periodontics Treatment Planning 2A (1 Credit)

In this postdoctoral seminar course, Periodontics and GPR residents present a documentation database, diagnosis and treatment plans for patients treated communally in these two clinics (Part 1 of two-semester course). Prereq: DPER 7202, DPER 7302.

Grading Basis: Letter Grade

DPER 8203 - Periodontal Literature Review Seminar 3 (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed. Prereq: DPER 7203, DPER 7303.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 8204 - Periodontal Case Presentations Seminar 2A (0.1-11 Credits)

In this postdoctoral course, residents prepare and present a complete documentation database, diagnosis/ prognosis, treatment plan, treatment procedures, and evaluation of treatment results in formal case presentations simulating the oral examination for the American Board of Periodontology. (Part 1 of two-semester course). Prereq: DPER 7204, DPER 7304.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 8205 - Periodontal Research 3 (0.1-11 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project. Prereq: DPER 7305, DPER 8105.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 8206 - Periodontics Clinical Teaching 1A (0.1-11 Credits)

Postdoctoral periodontics students gain experience in instructing dental and hygiene students after receiving instruction in the basics of didactic and clinical teaching. (Part 1 of two-semester course).

Grading Basis: Letter Grade

Typically Offered: Summer.

DPER 8207 - Minor Tooth Movement 1A (1.3 Credits)

This didactic and clinical course will familiarize the resident with orthodontic procedures that can be utilized in comprehensive periodontal treatment. Clinical cases will be treated in conjunction with orthodontic residents and faculty. (Part 1 of two-semester course).

Grading Basis: Letter Grade

DPER 8212 - Postgraduate Dental Implantology Seminar 2A (1 Credit)

In this initial lecture and seminar course, relevant readings in the dental literature relating to specific topics in dental implantology are assigned and critically discussed. a variety of cases are treatment planned by the residents. (Part 1 of two-semester course). Prereq: DPER 7112, DPER 7212, DPER 7312.

Grading Basis: Letter Grade

DPER 8213 - TMJ Clinic 1B (rotation) (1 Credit)

TMJ disorders are reviewed and treatment provided in these clinic sessions. Prereq: DPER 7313, DPER 8113.

Grading Basis: Letter Grade

DPER 8215 - Interdisciplinary Course 2B (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Fall.

DPER 8216 - Pharmacology III (0.1-11 Credits)

Review General Principles: Current pharmacology for the medical management of pain, infection, & selected systemic diseases; & adverse drug events. Based on top 200 drugs dispensed by US community pharmacies for prevention, diagnosis, and treatment of disease, reference/dent. Prerequisite: Department Consent Required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 12.

Typically Offered: Fall.

DPER 8219 - Dental and Medical Emergency Management (0.1-11 Credits)

This is a pragmatic course to familiarize the resident with dental and medical emergencies that may present during patient care. Major texts on medical emergency management and the medically compromised patient are used as a guideline. Department consent required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 8221 - Implants in the Orthodontic Patient (1 Credit)

This postdoctoral course is an in-depth study of the use of implants in patients both for restorative dentistry and as an orthodontic anchorage.

Grading Basis: Letter Grade

DPER 8222 - Periodontic/Orthodontic Treatment (0.1-11 Credits)

This postdoctoral course is a study of the interdisciplinary care of the patient with periodontal and orthodontic needs and includes a review of the literature in conjunction with a periodontist and orthodontist.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPER 8300 - Perio Specialty Clin 6 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8301 - Periodontics Current Literature 2B (0.1-11 Credits)

Prereq: DPER 7201, DPER 7301, DPER 8201 This postdoctoral course encompasses a review of the latest dental and medical journals for the most recent information related to the art, science, and practice of periodontics. Students prepare abstracts to be discussed at scheduled seminars. (Part 2 of two-semester course)

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8302 - Pero Treatment Plan 2B (0.5 Credits)

In this postdoctoral seminar course, Periodontics and GPR residents present a documentation database, diagnosis and treatment plans for patients treated communally in these two clinics. (Part 4 of two-semester course)

Grading Basis: Letter Grade

DPER 8303 - Perio Lit Rev Seminar 4 (0.1-11 Credits)

In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8304 - Perio Case Pres Sem 2B (0.1-11 Credits)

In this postdoctoral course, residents prepare and present a complete documentation database, diagnosis/prognosis, treatment plan, treatment procedures, and evaluation of treatment results in formal case presentations simulating the oral examination for the American Board of Periodontology. (Part 2 of two-semester course)

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8305 - Perio Research 4 (0.1-11 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8306 - Perio Clin Teaching 1B (0.1-11 Credits)

Postdoctoral periodontics students gain experience in instructing dental and hygiene students after receiving instruction in the basics of didactic and clinical teaching. (Part 2 of two-semester course)

Grading Basis: Letter Grade

Typically Offered: Spring.

DPER 8307 - Minor Tooth Mvt 1B (2 Credits)

This didactic and clinical course will familiarize the resident with orthodontic procedures that can be utilized in comprehensive periodontal treatment. Clinical cases will be treated in conjunction with orthodontic residents and faculty. (Part 2 of two-semester course)

Grading Basis: Letter Grade

DPER 8308 - Ethics, Financial and Practice Management 2 (0.1-11 Credits)

This course provides the periodontal resident with the information needed for successful personal, financial, and practice management. Curriculum will rotate over a three-year cycle to include personal financial management, human resources, accounting, legal and dental practice management.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DPER 8311 - Adv Immu/ Microbiology (0.1-11 Credits)

This postdoctoral course will review and update knowledge in the areas of microbiology and immunology relevant to homeostasis and pathology in the oral cavity.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 8312 - Postgrad Den Imp Sem 2B (1 Credit)

In this lecture and seminar course, relevant readings in the dental literature relating to specific topics in dental implantology are assigned and critically discussed. A variety of cases are treatment planned by the residents. (Part 2 of two-semester course)

Grading Basis: Letter Grade

DPER 8314 - Adv Tpcs in Pharmacology (1.5 Credits)

This is an advanced course in Pharmacology that will provide residents with a review and update of pharmacology and an understanding of applied pharmacology and patient care.

Grading Basis: Letter Grade

DPER 8315 - Interdisciplinary Course 2C (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DPER 8316 - Pharmacology IV (0.1-11 Credits)

Review General Principles: Current pharmacology for the medical management of pain, infection, & selected systemic diseases; & adverse drug events. Based on top 200 drugs dispensed by US community pharmacies for prevention, diagnosis, and treatment of disease, reference/dent. Prerequisite: Department Consent Required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 8317 - Advanced Oral & Maxillofacial Pathology for Periodonon (0.1-11 Credits)

This course is designed to prepare residents to recognize, analyze, & appreciate primary/secondary disease conditions of the oral & paraoral regions. Reflects an emphasis on the understanding of basic & fundamental biologic aberrations and an integration of these concepts into a meaningful approach to diagnostic pathology. Department Consent Required.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Fall.

DPER 9015 - Interdisciplinary Course 3A (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR periodontics and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed.1.0.

Department Consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPER 9017 - Scientific Writing and Evaluation (0.1-11 Credits)

This graduate course in dentistry is an in-depth study of scientific writing to prepare the student to evaluate the literature as well as to prepare a scientific manuscript for publication.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPER 9100 - Perio Specialty Clin 7 (0.1-11 Credits)

This is an advanced course in Pharmacology that will provide residents with a review and update of pharmacology and an understanding of applied pharmacology and patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPER 9101 - Periodontal Current Literature 3A (0.1-11 Credits)

In this postdoctoral seminar course, relevant reading in the periodontal literature relating to specific topics are assigned and critically discussed.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Summer.

DPER 9102 - Periodontal Literature Review Seminar 5 (0.1-11 Credits)
In this postdoctoral seminar course, relevant reading in the periodontal literature relating to specific topics are assigned and critically discussed.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 11.
Typically Offered: Summer.

DPER 9105 - Periodontal Research 5 (0.1-11 Credits)
Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project.
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

DPER 9106 - Periodontics Clinical Teaching 2A (0.1-11 Credits)
Postdoctoral periodontics students gain experience in instructing dental and hygiene students after receiving instruction in the basics of didactic and clinical teaching. (Part 1 of two-semester course)
Grading Basis: Letter Grade
Typically Offered: Summer.

DPER 9107 - Periodontics Specialty Elective (3 Credits)
This postdoctoral course will allow the resident to gain extra experience and to concentrate in an area of his/her choosing such as research, teaching, dental implants, periodontal plastic surgery, etc.
Grading Basis: Letter Grade
Typically Offered: Summer.

DPER 9115 - Advanced Diagnosis of Oral Lesions (0.3 Credits)
Oral/maxillofacial pathology course designed to prepare residents in recognizing/ analyzing/appreciating primary/secondary disease conditions of oral/paraoral regions which may present in patients under his/her care and respond in appropriate manner when conditions manifest. Reflects an emphasis on understanding basic/fundamental biologic aberrations and integrate concepts into meaningful diagnostic pathology approach.
Grading Basis: Letter Grade
Typically Offered: Spring.

DPER 9116 - Interdisciplinary Course 3A (1 Credit)
Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.
Grading Basis: Letter Grade
Typically Offered: Summer.

DPER 9200 - Perio Specialty Clin 8 (0.1-11 Credits)
In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures.
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DPER 9201 - Periodontal Current Literature 3B (0.1-11 Credits)
In this postdoctoral seminar course, relevant reading in the periodontal literature relating to specific topics are assigned and critically discussed.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 11.
Typically Offered: Fall.

DPER 9202 - Perio Treatment Plan 3A (0.3 Credits)
Grading Basis: Letter Grade

DPER 9203 - Periodontal Literature Review Seminar 6 (0.1-11 Credits)
In this postdoctoral seminar course, relevant readings in the periodontal literature relating to specific topics are assigned and critically discussed.
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DPER 9204 - Perio Case Pres Sem 3A (0.1-11 Credits)
In this postdoctoral course, residents prepare and present a complete documentation database, diagnosis/ prognosis, treatment plan, treatment procedures, and evaluation of treatment results in formal case presentations simulating the oral examination for the American Board of Periodontology. (Part 1 of two-semester course).
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DPER 9205 - Periodontal Research 6 (0.1-11 Credits)
Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project.
Grading Basis: Letter Grade with IP
Typically Offered: Fall.

DPER 9206 - Perio Clin Teaching 2B (0.1-11 Credits)
Grading Basis: Letter Grade
Typically Offered: Summer.

DPER 9209 - Perio Specialty Elective (2 Credits)
Grading Basis: Letter Grade

DPER 9212 - Postgrad Dent Imp Sem 3A (0.7 Credits)
Grading Basis: Letter Grade

DPER 9215 - Interdisciplinary Course 3B (0.1-11 Credits)
Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.
Grading Basis: Pass Fail with IP
Typically Offered: Fall.

DPER 9216 - Pharmacology V (0.1-11 Credits)
Review General Principles: Current pharmacology for the medical management of pain, infection, & selected systemic diseases; & adverse drug events. Based on top 200 drugs dispensed by US community pharmacies for prevention, diagnosis, and treatment of disease, reference/dent. Requisite: Department Consent Required
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 11.
Typically Offered: Fall.

DPER 9219 - Dental and Medical Emergency Management (0.1-11 Credits)
This is a pragmatic course to familiarize the resident with dental and medical emergencies that may present during patient care. Major texts on medical emergency management and the medically compromised patient are used as a guideline. Department consent required.
Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 11.
Typically Offered: Fall.

DPER 9300 - Perio Specialty Clin 9 (0.1-11 Credits)

In this postdoctoral course, students receive experiences with all accepted methods of periodontal treatment, dental implantology, and periodontal plastic procedures.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 9301 - Periodontal Current Literature 3C (0.1-11 Credits)

In this postdoctoral seminar course, relevant reading in the periodontal literature relating to specific topics are assigned and critically discussed.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 9302 - Perio Treat Plan 3B (0.5 Credits)

In this postdoctoral seminar course, Periodontic and GPR residents present a documentation database, diagnosis and treatment plans for patients treated communally in these two clinics. (Part 2 of two-semester course)

Grading Basis: Letter Grade

DPER 9303 - Periodontal Literature Review Seminar 7 (0.1-11 Credits)

In this postdoctoral seminar course, relevant reading in the periodontal literature relating to specific topics are assigned and critically discussed.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 9304 - Perio Case Pres Sem 3B (0.1-11 Credits)

In this postdoctoral course, residents prepare and present a complete documentation database, diagnosis/prognosis, treatment plan, treatment procedures, and evaluation of treatment results in formal case presentations simulating the oral examination for the American Board of Periodontology. (Part 2 of two-semester course)

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 9305 - Periodontal Research 7 (0.1-11 Credits)

Course requires student to select a research topic, define a research question, do a literature search on the topic, organize a research project, carry out the project, collect and analyze the results, and write a publishable manuscript on the project.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPER 9306 - Perio Clin Teaching 2C (0.1-11 Credits)

Prereq: DPER 8206, DPER 8306, DPER 9106, DPER 9206 Postdoctoral periodontics students gain experience in instructing dental and hygiene students after receiving instruction in the basics of didactic and clinical teaching. (Part 3 of three-semester course)

Grading Basis: Letter Grade

Typically Offered: Spring.

DPER 9308 - Ethics, Financial and Practice Management 3 (0.1-11 Credits)

This course provides the periodontal resident with the information needed for successful personal financial and practice management. Curriculum will rotate over a three year cycle to include personal financial management, human resources, accounting, legal, and dental practice management. Department Consent Required.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

DPER 9309 - Perio Specialty Elective (3 Credits)

This postdoctoral course will allow the resident to gain extra experience and to concentrate in an area of his/her choosing such as research, teaching, dental implants, periodontal plastic surgery, etc.

Grading Basis: Letter Grade

DPER 9312 - Postgrad Implant Sem 3B (1 Credit)

This lecture and seminar course, relevant readings in the dental literature relating to specific topics in dental implantology are assigned and critically discussed. A variety of cases are treatment planned by the residents. (Part 2 of two-semester course)

Grading Basis: Letter Grade

DPER 9315 - Interdisciplinary Course 3C (0.1-11 Credits)

Seminar includes residents from GPR and Graduate Periodontics and GPR, periodontics, and prosthodontics faculty to share clinically relevant multidisciplinary information. Patient diagnostic evaluations and treatment plans are evaluated in an interactive environment. Topics involving new advancements are presented and discussed. Department consent required.

Grading Basis: Pass Fail with IP

Typically Offered: Spring.

DPER 9316 - Pharmacology VI (0.1-11 Credits)

Review General Principles: Current pharmacology for the medical management of pain, infection, & selected systemic diseases; & adverse drug events. Based on top 200 drugs dispensed by US community pharmacies for prevention, diagnosis, and treatment of disease, reference/dent. Prerequisite: Department Consent Required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 11.

Typically Offered: Spring.

Periodontics (DSPE)

DSPE 5500 - Periodontics 1 (0.1-5 Credits)

This course is designed to make the student familiar with the normal periodontium, as well as the epidemiology, etiology and pathogenesis of periodontal disease.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSPE 6031 - Clinical Periodontics 1 (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSPE 6601 - Periodontology 2 (0.1-10 Credits)

This course provides the information needed to successfully complete a comprehensive periodontal evaluation and correctly interpret radiographs.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSPE 6605 - Periodontology 2 Laboratory - Section 1 (0.1-5 Credits)

This course runs parallel with Periodontology 2. It is devoted to teaching the clinical skills necessary for the practice of periodontics within the context of a general dental practice.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSPE 6606 - Periodontology 3 Laboratory (0.1-5 Credits)

This course runs parallel with Periodontology3. It is devoted to teaching the clinical skills necessary for the practice of periodontics within the context of a general dental practice.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSPE 6607 - Periodontology 3 (0.5-10 Credits)

This course deals with the prevention, treatment and control of periodontal disease. Currently accepted therapies are discussed in detail. In addition, the student is taught how to evaluate new therapies which periodically become available.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSPE 6610 - Periodontology 4 (0.1-5 Credits)

Course is devoted to making the student familiar with the surgical management of periodontal disease. The indications and rationale for resection, reconstructive and mucogingival procedures are discussed.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSPE 7011 - Clinical Periodontics 2 (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSPE 7022 - Clinical Periodontics 3 (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSPE 7033 - Clinical Periodontics 4 (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSPE 8011 - Clinical Periodontics 5 (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSPE 8022 - Clinical Periodontics 6 (0.1-5 Credits)

Clinical rotation in periodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSPE 8857 - Clinical Periodontics (0.1-4.5 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.5.

Personalized & Genomic Medicine (PMED)

PMED 6010 - Foundations in Personalized Health (3 Credits)

PMED6010 introduces students to the field of personalized medicine and prepares students to integrate this field into a variety of health-related professions. Students will gain the foundational knowledge to successfully apply personalized medicine approaches to scientific research and clinical care.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PMED 6110 - Pharmacogenomics (3 Credits)

PMED6110 introduces students to pharmacogenetics, which refers to how genetic factors influence drug metabolism and dosing. Students will gain the foundational knowledge to use pharmacogenetics in scientific research and clinical care. Co-Requisite - PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PMED 6210 - Multi-Omic Approaches in Personalized Medicine (3 Credits)

PMED6210 introduces students to cutting-edge concepts, technologies, analytic methods, and databases for a wide-range of 'omics approaches that form the foundation of personalized medicine. Critical evaluation of literature utilizing 'omics methods for personalized medicine will also be emphasized. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PMED 6410 - METHODS AND CHALLENGES IN OBSERVATIONAL HEALTH DATA ANALYSIS (3 Credits)

In this hands-on course students will analyze real EHR data to answer COVID-19-related questions. There are no pre-requisites, and students will be introduced to coding and methods (including machine learning) via synchronous lectures, weekly assignments, and a course project.

Prerequisites: PMED6010 and PMED6210

Grading Basis: Letter Grade

Typically Offered: Spring.

PMED 6910 - Applications and Challenges in Personalized Medicine (3 Credits)

PMED6910 is the capstone experience for students enrolled in the Personalized and Genomic Medicine Graduate Certificate. Students will expand their knowledge of personalized medicine through exposure to real-world applications and in-depth research into the field. Requisite: PMED 6010.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

Pharm. Cannabis Science & Med. (PCSM)

PCSM 6710 - Cannabis Therapeutics Neurology/Mental Health (2 Credits)

The evidence-based risks and benefits of cannabis and/or FDA-approved and investigational cannabis-derived drugs will be discussed in epilepsy and movement disorders, sleep, and migraine. Cannabis use in various mental health conditions will be presented, including depression, anxiety, post-traumatic stress, and schizophrenia.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PCSM 6720 - Cannabis Therapeutics Pain/Oncology (2 Credits)

The evidence-based risks and benefits of cannabis and/or FDA-approved and investigational cannabis-derived drugs will be discussed in management of various types of pain, and their supportive role in oncology. Patient safety considerations, including drug-cannabis interactions, and at-risk populations with cannabis use will be presented.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PCSM 6730 - Legal & Regulatory Issues in Cannabis Medicine (2 Credits)

The legal history of cannabis and industrial hemp in the United States and the current diversity of state and federal regulations governing the sale and use of cannabis and cannabis-derived medicinal and retail products will be discussed, as well as how these regulations influence basic science and clinical research on cannabis.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PCSM 7700 - Cannabis Pharmacology & Physiology (3 Credits)

This course addresses the history, botany, medicinal chemistry and pharmacology of active constituents in cannabis and hemp, with particular emphasis on their interplay with endogenous cannabinoids and the endocannabinoid system of the body. FDA-approved cannabinoid products and synthetic cannabinoids will also be discussed.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

PCSM 7710 - Chemical Analysis of Cannabis (2 Credits)

This course will review the current state of cannabis research methodologies, including the extraction of plant materials, biochemical analysis and isolation of bioactive constituents. This didactic component will also include practical considerations of cannabis chemistry and research applications. Requisite: PCSM 6710, PSCM 6720, PCSM 7700

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

Pharmaceutical Outcomes Research (PHOR)

PHOR 7570 - Special Topics in Outcomes Research (1 Credit)

This course involves identification, analysis and discussion of contemporary issues in the field of pharmaceutical outcomes research. Format and topics vary depending on the focus of the course for each semester. Prereq: Graduate standing and consent of instructor.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHOR 7611 - Applied Cost-Effectiveness Modeling (4 Credits)

This is an applied course in cost-effectiveness analysis. This course will apply the theory and methods learned in HSMP 6609 to develop competency in conducting cost-effectiveness analysis in health and medicine. Students will complete their own cost-effectiveness model.

Prerequisite: HSMP 6609 Cost Benefit/Cost Effectiveness Analysis

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHOR 7613 - Pharmaceutical Economics (3 Credits)

An introduction to pharmaceutical economics with emphasis on the role of pharmaceuticals and the pharmaceutical industry, regulation, and pricing. This course will also cover modeling microeconomic data including costs and health state preferences for advanced economic evaluation using primary data sources.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHOR 7615 - Pharmacoepidemiology (2-4 Credits)

This course builds upon fundamental concepts and methods of epidemiology, applied to the study of pharmaceuticals. Topics included: the FDA approval process, mechanisms of adverse drug effects, methods and data systems for studying drug-effect relationships, and evaluating published pharmacoepidemiology studies. Crosslisted: EPID 7615.

Prereq. EPID 6630, 2-course biostatistics series (either BIOS 6601-6602 or BIOS 6611-6612) Restrictions: Consent of instructor to determine level of credit to be taken.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHOR 7620 - Applied Pharmaceutical Outcomes Research Methods (2 Credits)

Students completing this course will be able to identify and write a clinical research question; identify variables for analyses; complete intermediate statistical analyses to answer their research question; write-up their study as a scientific manuscript; and present their research orally. Prerequisite: Passed PHRD 6065 or EPID 6626 and BIOS 6601/6611) or special permission of primary instructor. Crosslisted with PHRD 7810.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHOR 7621 - Database Research Methods (2 Credits)

This course, the first of a two-course sequence, will cover theoretical and methodological foundations of database research. Topics will include observational research methods, data management and analysis considerations, and an overview of databases available for use in health services research. Restrictions: Currently enrolled in a graduate-level program of study.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHOR 7622 - Applied Database Research (3 Credits)

Course is second of two-course sequence in database research, providing students opportunity to apply theory and methods learned in PHSC7621 to develop competency in conducting research using secondary datasets. Students conduct their own database project and complete manuscript describing findings.. Prereq: PHSC 7621, BIOS 6611/6602 or approval of course director. Restrictions: Currently enrolled in a graduate-level program of study.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHOR 7911 - Pharm Outcomes Research Practicum (2 Credits)

This course focuses on team-based research in pharmaceutical outcomes, building on prior didactic courses. Specific attention is given to the procedures, methods, and measurement specific to conducting successful empirical pharmaceutical outcomes research. Research topics will vary. Prereq: EPID 6630, 2-course biostatistics series (either BIOS 6601-6602, or BIOS 6611-6612), completion of preliminary exams. Restrictions: Consent of instructor to determine completion of prerequisite coursework and readiness for practicum.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHOR 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in pharmaceutical sciences. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Pharmaceutical Sciences (PHSC)

PHSC 5025 - Applied Biological Chemistry (2 Credits)

Course builds upon student knowledge of biochemistry to explore applications of biochemistry to diseases, drug actions, and drug development. Knowledge gained from this course is used as a foundation for understanding the rationale for the therapeutic uses of drugs.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHSC 5920 - Medicinal Chemistry (3 Credits)

This course explores medicinal chemistry concepts using clinically relevant case studies, designed to examine mechanism(s) of drug action, structure-activity relationships, drug metabolism, drug resistance and other concepts related to the pharmacology and clinical use of therapeutic drugs.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 6015 - Clinical Pharmacokinetics (3 Credits)

The influence of physiological and pathophysiological factors on drug disposition is considered. Knowledge gained allows students to calculate appropriate dosing of drugs in patients and anticipate how drug doses should be adjusted in disease and the presence of other drugs. Crosslisted with PHRD 6015.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 6710 - Cannabis Therapeutics: Neurology & Mental Health (2 Credits)

The evidence-based risks and benefits of cannabis and/or FDA-approved and investigational cannabis-derived drugs will be discussed in epilepsy and movement disorders, sleep, and migraine. Cannabis use in various mental health conditions will be presented, including depression, anxiety, post-traumatic stress, and schizophrenia. Requisite: Crosslisted with PCSM 6710.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 6720 - Cannabis Therapeutics: Pain, Oncology, At-Risk Populations (2 Credits)

The evidence-based risks and benefits of cannabis and/or FDA-approved and investigational cannabis-derived drugs will be discussed in management of various types of pain, and their supportive role in oncology. Patient safety considerations, including drug-cannabis interactions, and at-risk populations with cannabis use will be presented. Crosslisted with PCSM 6720

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 6730 - Legal & Regulatory Issues in Cannabis Medicine (2 Credits)

The legal history of cannabis and industrial hemp in the United States and the current diversity of state and federal regulations governing the sale and use of cannabis and cannabis-derived medicinal and retail products will be discussed, as well as how these regulations influence basic science and clinical research on cannabis. Crosslisted with PCSM 6730.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 6840 - Master's Research Rotation in Pharmaceutical Sciences (1-6 Credits)

This rotation provides an opportunity for MS in Pharmaceutical Sciences students to gain research experience prior to selecting a thesis laboratory.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PHSC 6856 - Master's Independent Study (1-4 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

PHSC 6950 - Master's Thesis in Pharmaceutical Sciences (1-10 Credits)

This course is for the conduct of thesis research, writing, and defense of an original research project by students in the MS in Pharmaceutical Sciences program. A minimum of 6 credits are required for program completion.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

PHSC 6990 - Capstone Project in Pharmaceutical Sciences (1-3 Credits)

Students in the MS in Pharmaceutical Sciences program will complete a capstone, literature review paper under faculty mentor guidance in their specialty area of cannabis science & medicine, clinical pharmacokinetics & pharmacodynamics, drug discovery, molecular & systems toxicology, or pharmaceutical biotechnology & drug delivery.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PHSC 7025 - Pharmacogenomics (2 Credits)

This course provides students with an understanding of how genetic factors influence drug disposition, response, and adverse effects.

Knowledge gained from this course will enhance students' ability to apply genetic information to pharmacy practice and select the most appropriate therapeutic intervention(s). Crosslisted with PHRD 7025.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7305 - Hands On Proteomics Workshop (1 Credit)

4-day intensive hands-on workshop designed to provide comprehensive view of proteomics. Appropriate for individuals with little/no experience in mass spectrometry and/or high performance liquid chromatography.

Participants learn introductory proteomics science and applicable protocols/technologies through extensive hands-on experience.

Prerequisite: IDPT 7811, IDPT 7812, IDPT 7813, IDPT 7814, IDPT 7815 and Instructor permission.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PHSC 7310 - Fundamentals of Pharmaceutical Sciences I (3 Credits)

Core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on macromolecular interactions, pharmaceuticals, pharmacokinetics, pharmacodynamics, apoptosis, signal transduction and immunology. Critical thinking and problem solving skills will be emphasized via lectures, discussions and computer-based data analyses. Crosslisted with TXCL 7310.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7312 - Fundamentals Doctoral Recitation I (1 Credit)

This is a one-credit course designed to complement PHSC 7310. While the didactic lectures of Fundamentals are essential for foundational knowledge in Toxicology and the Pharmaceutical Sciences, this course provides an opportunity for analytical and critical thinking and detailed discussion of experimental design and data interpretation. Intended to be taken the same semester as PHSC 7310 but can be taken alone by PHSC-MS students who've been admitted to the PHSC-PhD program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7315 - Fundamentals of Pharmaceutical Sciences II (3 Credits)

Core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on drug delivery and imaging systems, protein therapeutics, and the drug discovery process. Critical thinking and problem solving skills will be emphasized via lectures, discussions and computer-based data analyses. Crosslisted with TXCL 7315.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7317 - Fundamentals Doctoral Recitation II (1 Credit)

This is a one-credit course designed to complement PHSC 7315. While the didactic lectures of Fundamentals are essential for foundational knowledge in Toxicology and the Pharmaceutical Sciences, this course provides an opportunity for analytical and critical thinking and detailed discussion of experimental design and data interpretation. Intended to be taken the same semester as PHSC 7315 but can be taken alone by PHSC-MS students who've been admitted to the PHSC-PhD program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7320 - Physical Pharmacy & Pharmaceutical Sciences (3 Credits)

This course is designed to provide students with a thorough overview of physical chemical principles vital to the Pharmaceutical Sciences; a course for someone whose research efforts will involve pharmaceutical development and/or the evaluation of drugs. Cross list with TXCL 7320.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7326 - Seminar in Clinical Pharmacokinetics & Pharmacodynamics (2 Credits)

This course will comprise discussions and presentations of contemporary journal articles, or research in progress related to clinical pharmacokinetics and pharmacodynamics. Discusses current literature and research in the pharmaceutical sciences. Requisites: Required for MS Pharmaceutical Sciences grad students in conjunction with attendance at all seminars in the Dept. of Pharmaceutical Sciences (DOPS) Graduate Program Seminar Series. Two-term course, 2 credits each term, must attend both terms to receive grade.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 4.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHSC 7328 - Computational Design in Drug Discovery (3 Credits)

This course covers the theory and application of computational modeling to drug design and development. Students will be trained in multiple computational techniques and will perform an independent drug design project to be presented at the end of the course.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHSC 7330 - Development of Drugs and Biologics (3 Credits)

A survey course designed to introduce students to pharmacokinetic and pharmacodynamics principals used in drug research and development by faculty of the Skaggs School of Pharmacy, Department of Pharmaceutical Sciences. The Phoenix Winnonlin Computer software, is used to complete homework. Offered in Fall only in even-numbered years. Crosslisted with TXCL 7330.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7340 - Molecular Biophysics and Enzymology (2 Credits)

This course will present advanced topics in thermodynamics, kinetics, macromolecular interactions, and enzymology. Underlying theory and applications as found in the literature will be discussed. It is intended for those with a specialized research interest in the subject. Prerequisite: For students in the Pharmaceutical Sciences with research interest in subject

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7345 - Nanotechnology & Drug Delivery (2 Credits)

Course presents physicochemical and biological principles of drug delivery including drug delivery system design for various applications. In addition it will address principles of nanotechnology related to the design of nanosize delivery systems intended for drug delivery, imaging and diagnosis. Offered in Spring only in odd-numbered years. Crosslisted with BIOE 7345.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7400 - Ethical Issues in Toxicology & Pharmaceutical Sciences (1 Credit)

The purpose of this course is to expose students to ethical issues in the fields of toxicology and pharmaceutical sciences. Emphasis will be placed on research conduct, animal use, and other timely issues relevant in these fields. Crosslisted: TXCL 7400.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7405 - Hands-On Metabolomics Workshop (1 Credit)

A 4-day intensive hands-on workshop that provides a comprehensive view of metabolomics. Participants will learn introductory metabolomics science and applicable protocols/technologies. Appropriate for individuals with little to no experience in mass spectrometry and who will use this technology in their research. Requisite- One year of full-time biomedical graduate study and instructor permission

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHSC 7452 - Introduction to Clinical Pharmacology (3 Credits)

The course provides students with a foundational knowledge of clinical pharmacology, including pharmacokinetics, drug metabolism, assessment of drug effects, optimizing patient therapy and drug discovery and development. It is grounded in weekly topical lectures, supplemented by readings, discussion and assignments. Requisite:

Permission of Course Director.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHSC 7565 - Applied Statistics for Pharm Science and Toxicology (2 Credits)

Students will learn several basic statistical techniques for analyzing data including when and how to use them, the appropriate assumptions for these methods, and how to clearly articulate their statistical results in the context of toxicology and pharmaceutical sciences studies. Prerequisite:

Pharmaceutical Sciences and Toxicology graduate students

Grading Basis: Letter Grade

Typically Offered: Fall.

PHSC 7568 - Seminar in the Pharmaceutical Sciences (2 Credits)

Discusses current literature and research in the pharmaceutical sciences. Requisites: Required for 1st through 3rd year MS and PhD Pharmaceutical Sciences students in conjunction with attendance at all seminars in the Dept. of Pharmaceutical Sciences (DOPS) Graduate Program Seminar Series.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHSC 7608 - Molecular Interactions (3 Credits)

Provides chemical/physical basis for protein structure, folding, function & stability; presents methods/principles of protein/peptide purification & enzyme catalysis including electron transfer & mutagenesis. The role of molecular dynamics & use of molecular simulations in the investigations of protein-ligand/protein-protein interactions. Cross listed with STBB 7608.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 7609 - Biophysics & Spectroscopy (1.5 Credits)

This course will teach fundamentals of modern molecular spectroscopies and biophysical techniques as applied to biomolecules and the structural/dynamic information they afford. Cross listed with STBB 7609.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 7619 - Biophysics and Spectroscopy Lab (1 Credit)

This course aims to provide the students hands-on training in the use of a variety of biophysical techniques for the quantification of biomolecular interactions. Coreq: STBB 7609.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 7650 - Research Rotation Pharmaceutical Sciences (1-10 Credits)

Research work in pharmaceutical sciences. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PHSC 7651 - Pharmaceutical Biotechnology (3 Credits)

Course covers role of bioengineering in development of pharmaceutical biotechnology products. In particular, the student will learn to apply solution thermodynamics as well as mass and heat transfer concepts to the stabilization/formulation of macromolecules and production of drug delivery systems. Crosslisted: CU Boulder CHEN 5900.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHSC 7653 - Protein Formulation (2 Credits)

This course will provide instruction in rational design of stable therapeutic protein formulations with emphasis on the practical and mechanistic aspects of developing aqueous solution and freeze-dried formulations. Students will read papers from the literature and participate in critical discussions.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7658 - Advanced Topics in Pharmaceutical Sciences (1-5 Credits)

Considers special topic of current interest in pharmaceutical sciences.

Course may be repeated for credit with the instructor's approval.

Restriction: Consent of Instructor.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHSC 7660 - Liposome-based Drug Delivery (2 Credits)

This literature-based course briefly reviews the fundamental physiochemical characteristics of lipid membranes and then rigorously discusses how these properties are exploited for drug delivery. This course focuses on how current liposome technology overcomes the barriers to successful delivery. Offered in Spring only in even-numbered years.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7665 - Pharmacokinetic Principles & Applications (3 Credits)

A survey course to introduce students to pharmacokinetic and pharmacodynamics principles used in drug research and development.

Taught by faculty from the School of Pharmacy, Department of Pharmaceutical Sciences. Phoenix Winnonlin Computer software will be used in the course. Cross-listed with TXCL 7665

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHSC 7667 - Population Pharmacokinetic Modeling (3 Credits)

This course will allow students to gain knowledge, expertise and experience with population pharmacokinetic (PK) and pharmacodynamic (PD) models and software used to perform data analysis. Students will have the opportunity to practice their modeling skills while being introduced to a broad range of relevant approaches. Requisite:

Prerequisite: PHSC 7665 - Pharmacokinetic Principles & Applications

Grading Basis: Letter Grade

Typically Offered: Fall.

PHSC 7700 - Cannabis Pharmacology & Physiology (3 Credits)

This course addresses the history, botany, medicinal chemistry and pharmacology of active constituents in cannabis and hemp, with particular emphasis on their interplay with endogenous cannabinoids and the endocannabinoid system of the body. FDA-approved cannabinoid products and synthetic cannabinoids will also be discussed.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHSC 7705 - Scientific Writing in Cannabis Science & Medicine (1 Credit)

This practical course will cultivate the students' ability to communicate scientific and regulatory information to appropriate audiences, ranging from the general public to the cannabis industry and state agencies who regulate cannabis.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 7710 - Chemical Analysis of Cannabis (3 Credits)

This course will review the current state of cannabis research methodologies, including the extraction of plant materials, biochemical analysis and isolation of bioactive constituents. This didactic component will also include practical considerations of cannabis chemistry and research applications.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 7711 - Chemical Analysis of Cannabis Laboratory (1 Credit)

This laboratory companion course of PHSC/PCSM 7710 will provide practical experience with the extraction of plant materials spiked with cannabinoid reference standards, separation techniques, isolation and quantification of bioactive compounds, and mass spectrometry methods for compound identification. Requisite: PHSC 7710 or PCSM 7710 must be taken first or concurrently.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHSC 7720 - Seminar in Cannabis Science & Medicine (2 Credits)

This course allows students to practice critical thinking about literature pertinent to the pharmaceutical sciences, with a focus on cannabis science and medicine. The overall goal is to broaden students' scientific knowledge and provide practical experience in the critical evaluation and discussion of current and historical literature. Requisites: Required attendance at all seminars in the Dept. of Pharmaceutical Sciences (DOPS) Graduate Program Seminar Series. Must be taken in two terms, 2 credits each term.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

PHSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in pharmaceutical sciences. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Pharmacology (PHCL)

PHCL 7600 - Frontiers in Pharmacology (1 Credit)

Course is intended to introduce students to cutting-edge pharmacology research and to the range of research opportunities available within the Pharmacology Training Program. Pharmacology Department faculty presentations will focus on cellular signaling, molecular mechanisms of drug actions, structure-based drug design.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHCL 7602 - Pharmacology Journal Club (1 Credit)

The overall goal of the course is to teach the students to read and discuss current literature in their field and to gain a comprehensive view of the directions that lead to high-impact research. Students will present and discuss papers.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring.

PHCL 7605 - Responsible Conduct of Research (1 Credit)

The Department of Pharmacology in the University of Colorado School of Medicine organizes and offers an interactive course during the fall semester entitled "Responsible Conduct of Research". The course is designed to inform students, trainees and faculty to the NIH requirements for ethical and responsible research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHCL 7606 - Receptors and Cell Signaling (3 Credits)

This elective course presents an in-depth treatment of the role of receptors and signal transduction systems in the regulation of cell functions through faculty-presented lectures and student-led discussions of current literature. Prereq: IDPT 7811, 7812, 7813, 7814, 7815.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHCL 7609 - Statistical Methods in Pharmacology (3 Credits)

Introduction to basic statistical methods utilized to analyze scientific data. The goal of course is to provide students in the biological/health sciences with the knowledge/skills necessary to analyze/interpret data which is essential for communicating scientific results. Restriction: Restricted to Pharmacology PhD Students. Crosslisted with BIOS 6606.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHCL 7610 - Survey of Bioinformatics Methods (2 Credits)

What is Bioinformatics and why study it? How is large-scale molecular biology data generated, where and how can researchers gain access to it, and what computational analyses are possible? Crosslisted: CPBS 7710.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHCL 7611 - Bioinformatics I (4 Credits)

What is Bioinformatics and why study it? How is large-scale molecular biology data generated, where and how can researchers gain access to it, what computational analyses are possible and computational techniques for solving inference problems in molecular biology? Prereq: Bioinformatics PhD students or consent of instructor. Crosslisted: CPBS 7711.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHCL 7612 - Bioinformatics II (4 Credits)

Inference problems and computational techniques for molecular biology, with emphasis on machine learning approaches. Use of computational induction techniques on information extraction from biomedical literature, inference of biochemical networks from high-throughput data, and prediction of protein function. Prereq: CPBS 7711. Crosslisted: CPBS 7712.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHCL 7613 - Pharmacology Journal Club (1 Credit)

The overall goal of the course is to teach the students to read and discuss current literature in their field and to gain a comprehensive view of the directions that lead to high-impact research. Students will present and discuss papers.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring.

PHCL 7614 - Membrane Biophysics (2 Credits)

Lectures and homework on ionic mechanisms and underlying cellular excitability, especially in the central nervous system. Descriptive mathematics, pharmacology and molecular biology will be stressed. An introductory application to real-life problems using the NEURON simulation environment will be taught. Prereq: NRSC 7600 or equivalent. Restrictions: 2nd year students with approval of instructor. Crosslisted: NRSC 7614.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHCL 7615 - Grant Proposals in Pharmacology (1 Credit)

We will learn principles of good grants(wo)manship and hone our skills in homework assignments and discussions. Our goal is to enable a better learning experience during comps proposal writing, by gaining the tools for optimized self-assessment. Prereq: IDPT 7811, IDPT 7812, IDPT 7813, IDPT 7814, IDPT 7815.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

PHCL 7620 - Principles of Pharmacology (6 Credits)

Lectures are provided in the general areas of pharmacokinetics, receptor theory, structure-activity relationships, drug metabolism, basic pharmacological mechanisms with a particular emphasis on systems such as the nervous system and cardiovascular system, as well as cancer and microbial chemotherapy. Prereq: IDPT 7811, 7812, 7813, 7814, 7815. Restriction: Consent of Course Directors.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

PHCL 7622 - Principles of Pharmacology for MSTP Students (1 Credit)

Lectures are provided in the general areas of pharmacokinetics, receptor theory, structure-activity relationships, drug metabolism, and basic pharmacological mechanisms with a particular emphasis on systems such as the nervous system and cardiovascular system, as well as cancer and microbial chemotherapy. Prereq: IDPT 7811, 7812, 7813, 7814, 7815, PHCL 6000. Restriction: Consent of course directors.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHCL 7630 - Molecular Bio Lab Tech PHCL (3 Credits)

Grading Basis: Letter Grade

PHCL 7650 - Research in Pharmacology (1-5 Credits)

Research work in pharmacology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 99.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PHCL 7660 - Advanced Topics in Pharmacology (1-5 Credits)

An in-depth discussion-oriented course for advanced students focusing each term on specific topics associated with pharmacological studies including new insights about drug addiction, alcohol actions and alcoholism memory models and LTP, rational approaches to cancer chemotherapy, cardiovascular physiology. Prereq: PHCL 7600, PHCL 7606, PHCL 7609, PHCL 7620, PHCL 7650. Coreq: IDPT 7811, 7812, 7813, 7814, 7815.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

PHCL 7801 - Rigor and Reproducibility in Biomedical Research (1 Credit)

Course will integrate the concepts of rigor, repeatability, and reproducibility by combining both "wet" and "dry" lab components focused on teaching these concepts and laboratory skills.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

PHCL 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in pharmacology. Prereq: Consent of Instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Pharmacy (PHAR)

PHAR 4600 - Pharmacotherapeutics I (4 Credits)

Grading Basis: Letter Grade

PHAR 6250 - Instructional Methods II (1 Credit)

Grading Basis: Satisfactory/Unsatisfactory

PHAR 6985 - Pharmacotherapy 4 (5 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: cardiology 2, infectious diseases 1. Restrictions: Department Consent Required.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHAR 7742 - Pharmacotx -Bone Conn Tis (0.5 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with bone and connective tissue disorders. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in patient care. Prerequisites:

All students: PRDO 7700; For ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300 in addition to above courses. /Notes:Eligible Students: - NTPD New students (those admitted fall semester 2014) and later) - ITPD New students

Grading Basis: Letter Grade

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PHAR 7856 - Independent Study (2 Credits)

Grading Basis: Satisfactory/Unsatisfactory

Pharmacy Doctorate (PHRD)

PHRD 5010 - IPPE Community (2 Credits)

This is the first in a series of experiential-based courses, providing 80 hours of community pharmacy practice experience. Students will participate in all facets of community pharmacy practice, with a particular focus on the development of communication and professionalism skills.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PHRD 5020 - Rx Essentials: Introduction to Calculations and Medical Terminology (1 Credit)

This intensive 1-week course is designed to provide PharmD students with a comprehensive review of prerequisite mathematics skills essential for pharmaceutical calculations, along with an introduction to calculations and medical terminology and abbreviations commonly used in pharmacy practice.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

PHRD 5025 - Applied Biological Chemistry (2 Credits)

Course builds upon student knowledge of biochemistry to explore applications of biochemistry to diseases, drug actions, and drug development. Knowledge gained from this course is used as a foundation for understanding the rationale for the therapeutic uses of drugs.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5055 - Pharmacy Practice Fundamentals & Drug Information (4 Credits)

Course provides students with tactics necessary to perform dispensing duties in most pharmacy settings. Fundamentals of the practice of drug information are introduced. Pharmacy practice and drug information fundamentals are presented with the context of the history of pharmacy and contemporary pharmacy practice. Restrictions: Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5075 - Self-Care and Nonprescription Medications (4 Credits)

Course prepares students to be able to 1) collect appropriate patient data to make an assessment for self-care (e.g. nonprescription products), 2) conduct a patient-centered assessment, and 3) design, implement, evaluate and adjust a patient-centered self-care plan. Restriction: Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5920 - Medicinal Chemistry (3 Credits)

This course explores medicinal chemistry concepts using clinically relevant case studies, designed to examine mechanism(s) of drug action, structure-activity relationships, drug metabolism, drug resistance and other concepts related to the pharmacology and clinical use of therapeutic drugs.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 5925 - Pharmaceutics (4 Credits)

Students introduced to biophysical and chemical considerations in development of pharmaceutics and products and compounding various dosage forms, principles of parenteral drug preparation and administrations. Knowledge gained allows students to understand formulation development and optimize dosage forms for individual patients. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 5935 - Pharmacology & Toxicology (4 Credits)

Using the nervous systems as a model, the course introduces students to the mechanisms by which drugs produce therapeutic effects and side effects. The mechanisms of drug toxicity and how toxicity can be prevented and treated will be explored. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 5965 - Patient-Centered Communication (4 Credits)

Students develop skills to communicate effectively with patients, caregivers and healthcare providers to facilitate optimal patient outcomes. These courses cover all aspects of professional communication, including gathering, organizing, conveying and documenting patient-related information.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 5985 - Pharmacotherapy 1 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: pulmonology, OBGYN, ED, dermatology ophthalmology, otic diseases. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6015 - Clinical Pharmacokinetics (3 Credits)

The influence of physiological and pathophysiological factors on drug levels is considered. Knowledge gained allows students to calculate appropriate dosing of drugs in patients and anticipate how drug doses should be adjusted in disease and the presence of other drugs. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6065 - Evidence-based Medicine & Literature Evaluation (3 Credits)

An introduction and step-wise approach to evidence-based medicine. Students understand commonly-used statistical tests and evaluate statistical results for statistical versus clinical significance. Students demonstrate by answering short drug information questions, presenting a journal club and writing a drug information paper. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6085 - Pharmacotherapy 2 (5 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Cardiology. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6095 - Pharmacotherapy 3 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: endocrinology, renal. Department Consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 6910 - IPPE Health System (2 Credits)

This experiential-based course provides 80 hours of health-system pharmacy practice, focusing on the delivery of patient care and systems used to provide care to multiple patients. Course further develops professionalism, communication, and skills needed for advanced experiential training.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PHRD 6945 - Public Health & Health Outcomes (3 Credits)

This course in public health will cover how to use clinical, patient-centered, socioeconomic, and economic research to assess health care interventions. These skills can be used to critically assess health care policy that will affect you as a professional pharmacist. Restriction:

Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6965 - Clinical Problem Solving Skills (2 Credits)

This course builds upon the principles and skills from PHRD 5055/6065 and includes application inside and outside the classroom of drug information, effective search strategies and literature evaluation, critical appraisal of scientific literature, and applying evidence in clinical practice.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6985 - Pharmacotherapy 4 (5 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: infectious diseases. Restriction: Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 6995 - Pharmacotherapy 5 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: psychiatry, neurology. Restriction: Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7015 - Seminar Research (1 Credit)

Students will apply their ability to retrieve, evaluate, and utilize professional information in a critical and scientific manner. Students independently determine how to best solve a pharmacy-related question using scientific principles, and present their findings to a large audience. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7025 - Pharmacogenomics (2 Credits)

Course provides students with an understanding of how genetic factors influence drug efficacy. Knowledge gained from this course enhances students' ability to select the most effective therapeutic intervention. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7055 - Pharmacy Management (2 Credits)

The course provides an introduction to management in community pharmacy practice, hospital pharmacy management, and other business and management skills needed to be successful in a variety of different practice settings. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7085 - Pharmacotherapy 6 (4 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Immunology, gastro intestinal, rheumatology, transplantation, osteoporosis. Department consent required.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7095 - Pharmacotherapy 7 (3 Credits)

This 7 course series includes pathophysiology, pharmacology, and therapeutics of a range of system based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: oncology. Department consent required

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7808 - Introduction to the Pharmaceutical Industry (2 Credits)

Course provides a broad background on the pharmaceutical industry. Reviews of major pharmaceutical company functions will be covered, Emphasis will be placed on clinical development and areas of opportunity for those with a pharmacy or pharmaceutical sciences background.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7810 - Applied Pharmaceutical Outcomes Research Methods (2 Credits)

Students completing this course will be able to identify and write a clinical research question; identify variables for analyses; complete intermediate statistical analyses to answer their research question; write-up their study as a scientific manuscript; and present their research orally.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7812 - Seminar in Pharmaceutical Sciences (2 Credits)

Provides practical experience in the evaluation and discussion of research literature. Students will prepare a seminar and participate in scientific discussions. Students who are interested in broadening knowledge in pharmaceutical science, drug delivery, and improving their speaking skills will benefit.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHRD 7815 - Physical Assessment/Examination in Pharmacy (2 Credits)

This course is designed to provide students with functional knowledge and skills in the area of physical assessment and will aid students in enhancing the assessment of disease and drug therapy in a variety of practice settings.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7828 - Advanced Diabetes Management (2 Credits)

This elective focuses on advanced diabetes management and utilization of technology and digital health tools. The course provides learners hands-on, simulated experiences with diabetes technology and digital health tools to successfully optimize diabetes care and make clinical decisions remotely.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7830 - Infectious Diseases Elective (2 Credits)

This course will address the pharmacology and appropriate clinical use of agents used in the treatment and management of selected infectious diseases. The course will also focus on pharmacodynamics of antimicrobial agents, antibiotic stewardship, antibiotic resistance, and statistics.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7835 - Advanced Cardiovascular Pharmacotherapy (2 Credits)

The purpose of this course is to provide a more comprehensive and in-depth background in cardiovascular pharmacotherapy for students interested in, or planning to practice in, settings where the care of patients with cardiovascular disease is emphasized.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PHRD 7842 - Medical Use of Cannabis (2 Credits)

Course will address the pharmacology and appropriate medical use of cannabis used in the treatment and management of selected disease states. Course will also focus on the pharmacokinetics, pharmacodynamics, legal aspects, special populations and patient information (safety) of cannabis.

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7844 - Special Topics in Compounding (2 Credits)

Course will provide students with an understanding of principles and practices involved in clinical aspects of pharmacy compounding. Students will utilize readings, case studies, class discussion, outside-class assignments, and written evaluation to learn how pharmacy compounding may solve medication-related problems. Department Consent Required

Grading Basis: Letter Grade

Typically Offered: Fall.

PHRD 7850 - Geriatric Pharmacy Elective (2 Credits)

This course is intended to provide the student with an advanced understanding of pharmacotherapy in older adults as well as common medical, psychological, and social issues encountered when caring for older adults. Prerequisite: P3 status.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7855 - Independent Study (1-4 Credits)

Independent Study Prerequisite: P3 status. Per Department Chair approval.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 4.

Typically Offered: Fall, Spring.

PHRD 7856 - Independent Study (2 Credits)

Prerequisites: P3 status. Per Curriculum Committee approval.

Grading Basis: Satisfactory/Unsatisfactory

Typically Offered: Fall, Spring.

PHRD 7857 - Compounding Pharmacy Elective (2 Credits)

An elective course to offer compounding skills for pharmacy students. Prereq: P1-P3 status.

Grading Basis: Letter Grade

Typically Offered: Spring.

PHRD 7860 - Special Topics in Integrated Health & Medicine (2 Credits)
This course is designed to develop a broad knowledge base in the field of Integrated Health and Medicine. This course will cover common vitamins and minerals, herbal products, and bio-identical hormones, and core domains and discussions of regulatory issues. Prerequisite: P1-P3 status.

Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

PHRD 7870 - Pediatric Pharm Practice (2 Credits)
This course will be offered to students interested in developing and fostering their knowledge and assessment of childhood diseases and pharmacotherapy. Clinical pharmacy specialists and staff from the Children's Hospital of Denver will teach this course. Prerequisite: P3 status.

Grading Basis: Letter Grade
Typically Offered: Spring.

PHRD 7882 - Drugs of Abuse (2 Credits)
Course will explain pharmacological, physical, and psychological effects of drugs of abuse on the body relevant to real-world pharmacy practice. Course aims to develop clinical skills for use in emergency situations, proper prescribing of drugs of abuse, and understanding of the process of addiction/abuse in order to identify and mitigate potential harm.

Grading Basis: Letter Grade
Typically Offered: Spring.

PHRD 7885 - Acute Care Pharmacotherapy (2 Credits)
Pharmacology and appropriate clinical use of agents used in the treatment of selected acute disorders found in hospitalized patients. The course will also focus on the comprehensive nature of these acute disorders. Recent advances in pharmacotherapy, patient-specific management strategies, and controversial issues will be included and emphasized. Prerequisite: P3 status.

Grading Basis: Letter Grade
Typically Offered: Spring.

PHRD 7890 - Advanced Oncology Pharmacy (2 Credits)
Students will learn pathophysiology and treatment of solid organ and hematologic malignancies, practical use of antineoplastic agents, and provision of supportive care for patients of cancer. Prerequisite: PHRD 6750.

Grading Basis: Letter Grade
Typically Offered: Spring.

PHRD 7895 - Beginning Medical Spanish (2 Credits)
This Beginning Medical Spanish course, tailored for pharmacy students, is designed to allow students to become comfortable with conversational Spanish and medical vocabulary in various pharmaceutical contexts. Language learning is both academic and experiential. Prerequisite: P3 status.

Grading Basis: Letter Grade
Typically Offered: Fall, Spring.

PHRD 7896 - Intermediate Med Spanish (2 Credits)
This intermediate medical Spanish course, tailored for pharmacy students, is designed to allow students to become comfortable with intermediate conversational Spanish and medical vocabulary in various pharmaceutical context. Language learning is both academic and experiential. Prerequisite: P3 status.

Grading Basis: Letter Grade
Typically Offered: Fall, Spring, Summer.

PHRD 7905 - Advanced IPPE (6 Credits)
Students are placed in a 6-week, full-time (40 hours per week) patient care experience in which they can begin to apply their didactic knowledge. In this advanced IPPE students demonstrate competency to meet pre-APPE core performance domains and abilities. Requirements: Department consent required

Grading Basis: Letter Grade
Typically Offered: Spring.

PHRD 7945 - Pharmacy Law and Regulatory Standards (3 Credits)
Course explores pharmacy laws and regulations. Students are able to carry out their intern duties in accordance with professional guidelines and regulatory standards. The course also explores how to apply ethical and professional principles in various healthcare settings.

Grading Basis: Letter Grade with IP
Typically Offered: Spring.

PHRD 7995 - Clinical Capstone (6 Credits)
Course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning, and holding students accountable for prior learning in an integrated manner using complex patient scenarios. Requirements: Department Consent required

Grading Basis: Letter Grade
Typically Offered: Spring.

PHRD 8055 - AdvPharPracExp - Elective (6 Credits)
Six week rotation; 40 hrs weekly. This experience will take place in various practice settings. Students may participate in various activities that focus on medication-related problems dealing with various populations, with or without direct patient contact. Requirement: Department consent required

Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 6.
Typically Offered: Fall, Spring, Summer.

PHRD 8056 - APPE Elective International (6 Credits)
Six week rotation; 40 hrs weekly. This pharmacy practice experience is an opportunity for students to train in various international clinical practice environments.

Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 12.
Typically Offered: Fall, Spring, Summer.

PHRD 8065 - AdvPharPracExp - Ambulatory Care (6 Credits)
Six week rotation; 40 hrs weekly. This experience will take place in an ambulatory care, multidisciplinary practice setting. Practice sites may include hospital-based clinics, physician group practices, and community or public health clinics that provide health care directly to patients. Requirement: Department consent required.

Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 6.
Typically Offered: Fall, Spring, Summer.

PHRD 8075 - AdvPharPracExp - Community (6 Credits)
Six week rotation; 40 hrs weekly. This experience will take place in a community pharmacy practice setting. Practice sites include independent, large chain or retail pharmacies that provide a variety of services, including administration of immunizations and health/wellness screenings. Requirement: Department Consent required

Grading Basis: Letter Grade with IP
Repeatable. Max Credits: 6.
Typically Offered: Fall, Spring, Summer.

PHRD 8085 - AdvPharPracExp - Hospital/Health-System Pharmacy (6 Credits)

Six week rotation; 40 hrs weekly. This experience will take place in an inpatient practice setting. Students will be exposed to adult patients with a variety of disease states, and participate in other institutional activities related to clinical pharmacy services. Requirement: Department consent required

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

Pharmacy Doctorate (PRDI)

PRDI 7000 - US Pharmacy Prac Fund (2 Credits)

This course provides students with the tactics necessary to perform dispensing duties in most US pharmacy settings and systems. The fundamentals of the practice of drug information are introduced.

Prerequisites: Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 7100 - Pt Centered Clin Comm (2.5 Credits)

This course is designed to help students develop skills to communicate effectively with patients, caregivers and healthcare providers to facilitate the achievement of optimal patient outcomes. Prerequisites: Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 7150 - Med Term & Lab Interp (0.5 Credits)

This course provides a review of medical terminology and laboratory interpretation with an emphasis on US pharmacy and medical terms and abbreviations. Students will also review the top 100 medications prescribed in the United States. Prerequisites: Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 7300 - Intro Phcy Pract Exp I (2.5 Credits)

Course designed to provide students with opportunities to practice skills and knowledge acquired from courses and apply them in various practice settings and with various professional groups. Prerequisites: Eligible Students: ITPD

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDI 7350 - Mid-Curricular IPPE Hours (0.5 Credits)

This course provides students with opportunities to practice skills and knowledge acquired from didactic courses and apply them in various pharmacy practice settings and with various professional groups. It comprises 60 IPPE hours and picks up from those offered in PRDI 7300 IPPE-I, and occurs prior to PRDI 7920 advIPPE. Requisite: PRDI 7000 – US Pharmacy Practice Fundamentals PRDI 7100 – Patient Centered and Clinical Communications PRDI 7150 – Medical Terminology and Lab Interpretation PRDI 7300- Introduction to Pharmacy Practice Experience

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDI 7470 - US Phcy Leadership Mgmt (2 Credits)

Course provides students with an overview of fundamental principles of leadership. Attributes of effective leaders will be identified and discussed. An emphasis will be placed on identifying and cultivating personal leadership qualities to use throughout their pharmacy education and career. Prerequisites: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300. / Notes: Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 7480 - US Phcy Law & Reg Stds (1.5 Credits)

Legal and ethical issues in US pharmacy practice are presented in this course in lectures, case studies and discussion group formats.

Prerequisites: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300. /Notes:

Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 7770 - US Pt Centered Self-Care (2 Credits)

This course will prepare the student to be able to 1) collect appropriate patient data to make an assessment for self-care (e.g. nonprescription products), 2) conduct a patient-centered assessment, and 3) design, implement, evaluate and adjust a patient-centered self-care plan.

Prerequisites: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300 and

PRDO 7700./Notes: Eligible Students: ITPD.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDI 7900 - Prof Skills Dev (1 Credit)

Course intended to review and assess a broad range of skills necessary for current and future pharmacy practice. Designed to integrate and apply essential knowledge, skills and attitudes from didactic portion of curriculum are required for a successful professional career. Prerequisites: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300, PRDO 7800, and All Pharmacotherapy (except Oncology, ID, electives)./Notes: Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 7910 - Prof Skills Portfolio (1.5 Credits)

This course is a longitudinal course, with the goal to prepare students for the Professional Skills Development course. Students will be expected to practice and refine a variety of skills through collaborative and individual activities and demonstrations. Prerequisites: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300 /Notes: Eligible Students: ITPD.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.5.

Typically Offered: Fall, Spring, Summer.

PRDI 7911 - Professional Skills Portfolio I (1 Credit)

First of two courses dedicated to the longitudinal Professional Skills Development portfolio. The goal of this course is to address students' individual and home country/community educational and practice needs, assess pharmacy educational competencies and document skill application. Prerequisites: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150. Eligible Students: ITPD

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

PRDI 7912 - Professional Skills Portfolio II (0.5 Credits)

Second of two courses dedicated to the longitudinal Professional Skills Development portfolio. The goal of this course is to address students' individual and home country/community educational and practice needs, assess pharmacy educational competencies and document skill application. Prerequisites: PRDI 7000, PRDI 7100, PRDI 7300, PRDI 7150, PRDI 7911. Eligible Students: ITPD

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Spring, Summer.

PRDI 7920 - Adv Intro Phcy Prac Exp (3 Credits)

Course designed to provide students with introductory exposure to higher level patient care experiences, engagement in clinical pharmacy practice in a clinical setting, immersion in a clinical environment, and experiences to increase student confidence in their ability to learn. Prerequisites: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300, PRDO 7800, PRDI 7470, PRDI 7470, PRDI 7480, PRDO 7490, PRDI 7770 and all Pharmacotherapy (except Oncology, ID, electives)./Notes: Eligible Students: ITPD.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDI 8050 - International APPE (1-6 Credits)

This advanced pharmacy practice experience is an opportunity for international students to train in various clinical practice environments.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

Pharmacy Doctorate (PRDO)

PRDO 7323 - Pharmacotherapy- Critical Care Elective (1 Credit)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for critical care patients. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in providing patient care. Prerequisites: PRDO 7700.

Notes: Eligible Students: Elective for NTPD and ITPD students.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

Typically Offered: Summer.

PRDO 7331 - Pharmacotherapy Pediatrics Elective (1 Credit)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for disorders and issues of pediatric patients. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in providing patient care.

Prerequisites: PRDO 7700. Notes: Eligible Students: Elective for NTPD students and ITPD students.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

PRDO 7361 - ADMS 6-1 Endocrine Dis (1 Credit)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with endocrinology disorders. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in providing patient care. Prerequisites: PRDO 7700; Notes: Eligible Students: NTPD Continuing students (those admitted prior to Fall semester 2014).

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7440 - Evid-based Med & Lit Ev (3 Credits)

This course provides an introduction and step-wise approach to evidence-based medicine. Knowledge gained from this course allows students to search for and understand published medical studies, research designs and statistical tests, and their application to clinical practice. Prerequisites: NTPD students: PRDO 7400; ITPD Students: PRDI 7000, PRDI 7100, PRDI 7150, and PRDI 7350 in addition to above courses.

Notes: Eligible Students: NTPD students and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7490 - Healthcare Informatics (1 Credit)

This course will focus on fundamentals of pharmacy informatics such as pharmacy automation technology and information systems in various pharmacy settings. Requirements: ITPD Students: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300. NTPD Students: PRDO 7700. Eligible Students: NTPD and ITPD students

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

PRDO 7492 - Healthcare Informatics II (1 Credit)

This course will focus on fundamentals of pharmacy informatics with an emphasis on data management, methods and medication-related applications. Prerequisite: ITPD Students: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300, PRDO 7490. NTPD Students: PRDO 7700, PRDO 7490. Eligible Students: NTPD and ITPD

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7495 - Innovation Entrepreneurship (1 Credit)

This goal of this course is to introduce the student to thinking differently. During the course, the learner will have the opportunity to gain an understanding and recognize their creative abilities, promote innovation in themselves and others, and demonstrate productive thinking.

Upon completion the student should have a better understanding.

Requisite: ITPD Students: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300, PRDO 7490. NTPD Students: PRDO 7700, PRDO 7490. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7560 - Instructional Met & Sem (2 Credits)

Provides the pharmacist with basic skills in lecture development and presentation. Presentations include development of PowerPoint slides, one short presentation, and a videotaped presentation. Prerequisites: PRDO 7240, PRDO 7460, and 7.5 cr hrs of ADMS Courses/ Notes: Eligible Students: NTPD Continuing students (those admitted prior to Fall semester 2014).

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

Typically Offered: Fall, Spring, Summer.

PRDO 7561 - Instructional Methods (1.5 Credits)

This course is designed to advance the presentation and teaching skills of participants. It focuses on the development of essential components of formal presentations, including learning objectives, outlines, and delivery skills. Prerequisites: NTPD: PRDO 7700, PRDO 7440 and 5 credit hours Pharmacotherapy; ITPD: PRDI 7000, PRDI 7100, PRDI 7300, PRDI 7150, PRDO 7700, PRDO 7440, and 5 credit hours Pharmacotherapy. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7562 - Instructional Methods (1 Credit)

This course is designed to advance the presentation and teaching skills of participants. It focuses on the development of essential components of formal presentations, including learning objectives, outlines, and delivery skills. Eligible Students: NTPD and ITPD students. Prerequisites: NTPD: PRDO 7700, PRDO 7440 and 5 credit hours Pharmacotherapy; ITPD: PRDI 7000, PRDI 7100, PRDI 7300, PRDI 7150, PRDO 7700, PRDO 7440, and 5 credit hours Pharmacotherapy.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDO 7601 - Public Health (1 Credit)

The purpose of this course is to provide an overview of the US healthcare system with insight into global health issues, their key components and their functional relationships. Requisites: Prerequisites: ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150. Eligible Students: NTPD and ITPD students

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7602 - Health Economics (1 Credit)

This course will cover economic evaluation techniques for pharmaceutical care, and how to use economic, clinical and humanistic outcomes research to understand and assess health care interventions and health care systems. ITPD students: PRDI 7700, PRDI 7100, PRDI 7150 and PRDI 7300. Prerequisites: NTPD students: PRDO 7601. ITPD students: PRDI 7000, PRDI 7100, PRDI 7150, PRDI 7300, and PRDO 7601. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

PRDO 7621 - Interprofessional Collaborative Practice (0.5 Credits)

This course develops core competencies in teamwork & collaboration for incoming health professions students. Students will learn in IP teams coached by IP faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve IP collaboration. Notes: Eligible Students: - NTPD students. ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDO 7622 - Interprof Healthcare Ethics & Health Equity (0.5 Credits)

This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice. It integrates interprofessional collaboration and teamwork to teach students ethical theory and reasoning, professional ethics and approaches to healthcare decision-making. Notes: Eligible Students: - NTPD students. ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: .5.

Typically Offered: Fall, Spring, Summer.

PRDO 7700 - Clin Skills Foundations (2 Credits)

Combines three components that provide foundation for ADASM courses: 1) orientation to patient assessment and skills development; 2) pharmacokinetics and pharmacodynamics; 3) advanced disease statement management for fluids, electrolytes, and acid-base disorders.

Prerequisites: All students: PRDO 7700 ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7701 - Special Topics in Pharmacokinetics & Pharmacodynamics (1 Credit)

This course provides a history and overview of the profession. Students will also focus on pharmacokinetics and pharmacodynamics through both theory and application. Prerequisites: ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7702 - Clinical Skills Foundations-Introduction to Pharmaceut (1 Credit)

This course provides the foundation for core clinical skills that the PharmD student will utilize throughout the profession. The essential elements of the pharmacist's patient care process (PPCP) through both theory and application. Prerequisites: All students: PRDO 7701 ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7710 - Pharmacotherapy-CV/Renal (2.5 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with common cardiovascular and renal disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge in providing patient care. Prerequisites: All students: PRDO 7700 ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: NTPD and ITPD students

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7716 - Cardiology (3.5 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with common cardiovascular disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge in providing patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDO 7720 - Pharmacotherapy-GI/Nutr (2.5 Credits)

Course combines pathophys, advanced pharmacotherapeutics management, drug-specific pharmacokinetics, patient assessment, & professional skills development for patients with gastrointestinal and nutrition disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge.

Prerequisites: All students: PRDO 7700 ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: NTPD and ITPD students

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7726 - Immunology - PT (Imm, Rheum/Osteo, Tplant, GI and Nutrition/Obesity) (2 Credits)

Course combines pathophys, advanced pharmacotherapeutics management, drug-specific pharmacokinetics, patient assessment, & professional skills development for patients with transplants, immunology, and GI and nutrition disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDO 7730 - Pharmacotherapy-Inf Dis (2 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, basic patient assessment, & professional skills development for patients with infectious diseases. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in providing patient care.

Prerequisites: All students: PRDO 7700 ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7741 - Pharmacotherapy-Oncology (2 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, basic patient assessment, & professional skills development for oncology disorders. The course incorporates the principles of active learning using lecture and interactive formats.

Prerequisites: All students: PRDO 7700; PRDO 7010 or PRDO 7011 strongly recommended ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7742 - Pharmacotx -Bone Conn Tis (0.5 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with bone and connective tissue disorders. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in patient care. Prerequisites: All students: PRDO 7700; ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7743 - Oncology II (1 Credit)

This elective course will build on foundational oncology concepts. The course will cover advanced pharmacotherapeutic management for disorders commonly seen in oncology patients. Prerequisites:

All students PRDO 7700; For NTPD: PRDO 7741; For ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300 in addition to above courses. Eligible Students: Elective for NTPD and ITPD students

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7745 - Palliative Care Pharmacotherapy (1 Credit)

Palliative Care - This course is designed to introduce the student to palliative care and hospice pharmacy practice. Students will learn the pathophysiology, pharmacotherapeutics, patient assessment, and communication skills necessary to manage pain and other complex symptoms in patients living with serious illness. Requisite: PRDO/PRDM 7700, strongly suggest PRDO/PRDM 7741.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7750 - Pharmacotx-Ger/Neur/Psy (3 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for geriatric, psychiatric, and neurological disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge in providing patient care.

Prerequisites: All students: PRDO 7700; For ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7755 - Pharmacotherapy V - Geriatrics, Neurology, Psychiatry (2.5 Credits)

This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, and basic physical assessment skills, and professional skills development for neurologic and psychiatric, and geriatric disorders. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. The major topics in geriatrics are physiologic changes with aging; Alzheimer's disease and other dementias. The major topics in neurology include seizure disorders; multiple sclerosis; headache; chronic pain; Parkinson's disease; traumatic brain injury; and coma. Psychiatry addresses major affective disorders; anxiety; sleep disorders; schizophrenia; attention deficit disorders; substance abuse and brief toxicology section addressing general principles of poison control, use of antidotes and management of common overdoses. Prerequisite: All students: PRDO 7700; For ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDO 7760 - PhtxEndoHemePulmUroGyn (3 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with endocrinology, hematology, pulmonology and gynecology/urologic disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge in patient care. Prerequisite: All students: PRDO 7700; ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses. Eligible Students: NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7761 - Pharmacotherapy- Pulmonary, OB/GYN, Women and Men's Health, Otic, Ophthalmology, Dermatology (2.5 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with pulmonology, gynecology/urologic, otic, ophthalmic, and dermatologic disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge in patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDO 7763 - Endocrine Renal (3 Credits)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for patients with common endocrine and renal disorders. Course may include case-based, team-based learning to provide opportunities for application of clinical skills & knowledge in providing patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDO 7775 - Integrative Health & Medicine (1 Credit)

Elective course designed to develop a broad knowledge base in the field of Complementary and Alternative Medicine (CAM). Course will cover common vitamins and minerals, herbal products, and bio-identical hormones, touching on core CAM domains and discussions of regulatory issues. Prerequisites: All students: PRDO 7700 ITPD students: PRDI 7000, PRDI 7100, PRDI 7300, and PRDI 7150 in addition to above courses.

Eligible Students: Elective for NTPD and ITPD students.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7777 - COAST-IT Elective (1 Credit)

Connecting Older Adults with Students Through Interprofessional Telecare is a program where students are paired with an older adult partner (OAP) with whom to make social phone/video calls, to help reduce isolation and loneliness of the OAP, and improve conversation skills and awareness of geriatric issues for the student.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDO 7780 - Pharmacogenomics (1.5 Credits)

This course provides students with an understanding of how genetic factors influence drug disposition, response, and adverse effects. Knowledge gained from this course enhances students' ability to apply genetic information to pharmacy practice and select the most appropriate therapeutic intervention(s). Prerequisites: For NTPD students: PRDO 7700, PRDO 7400, PRDO 7440, PRDO 7710. For ITPD students: PRDI 7000, PRDI 7100, PRDI 7150, and PRDI 7300 in addition to above courses.

Eligible Students: NTPD and ITPD students

Grading Basis: Letter Grade

Typically Offered: Summer.

PRDO 7800 - Clinical Problem Solving Skills (2 Credits)

This course builds on principles and skills taught and gained in prerequisite courses, such as drug information, identification/use of optimal resources, effective literature search and evaluation strategies, critical scientific literature appraisal and applying evidence in clinical practice. Prerequisites: For NTPD students: PRDO 7700, PRDO 7440, PRDO 7710, at least ONE of the following: PRDO 7720, PRDO 7750, or PRDO 7760. For ITPD students: PRDI 7000. PRDI 7100, PRDI 7150, and PRDI 7300 in addition to above courses. Eligible Students: NTPD and ITPD students

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7850 - Clinical Capstone (3 Credits)

This course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning and hold students accountable for prior learning in an integrated manner using complex patient scenarios. Prerequisites: For NTPD students: PRDO 7700, PRDO 7400, PRDO 7440, PRDO 7710, PRDO 7800 at least TWO of the following; PRDO 7720, 7750 or 7760.

For ITPD students: PRDI 7000, PRDI 7100, PRDI 7150 and PRDI 7300 in addition to above courses. /Notes: Eligible Students: - NTPD New students (those admitted fall semester 2014 and later) and - ITPD New students

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PRDO 7851 - Clinical Capstone (3.5 Credits)

Clinical Capstone -- This course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning and hold students accountable for prior learning in an integrated manner using complex patient scenarios. Required prerequisites: PRDO 7150, PRDO 7700, PRDO 7400, PRDO 7621, PRDO 7622, PRDO 7561, PRDO 7440, PRDO 7800.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.5.

Typically Offered: Fall, Spring, Summer.

PRDO 8401 - APPE - Ambulatory Care (6 Credits)

Requisite: All didactic coursework (ITPD and NTPD), both live sessions (ITPD), PRDO 7411 (NTPD), PRDI 7911 (ITPD), Immunization Training completed through APHA or Canadian Province, and a cumulative professional 2.0 GPA.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PRDO 8402 - Ambulatory Care- Credit-By-Challenge (6 Credits)

This credit-by-challenge portfolio will cover current and contemporary experiences obtained in an ambulatory care, multidisciplinary practice setting. Practice experiences may include hospital-based clinics, physician group practices, and community or public health clinics that provide health care directly to patients. Challenges will meet or exceed 240 hours of experience equivalency.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PRDO 8501 - APPE Hospital/Health System (6 Credits)

This experience will take place in an inpatient practice setting. Students will be exposed to adult patients with a variety of disease states, and participate in other institutional activities related to clinical pharmacy services. Requisite: All didactic coursework (ITPD and NTPD), both live sessions (ITPD), PRDO 7411 (NTPD), PRDI 7911 (ITPD), Immunization Training completed through APHA or Canadian Province, and a cumulative professional 2.0 GPA.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PRDO 8502 - APPE Health System Credit-By-Challenge (6 Credits)

This credit-by-challenge portfolio will cover current and contemporary experiences obtained in an inpatient practice setting. Practice experiences will include exposure to adult patients with a variety of disease states, and participation in other institutional activities related to clinical pharmacy services. Challenges will meet or exceed 240 hours of experience equivalency.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PRDO 8601 - Advanced Pharmacy Practice Experience-Community (6 Credits)

This experience will take place in a community pharmacy practice setting. Practice sites include independent, large chain, or retail pharmacies that provide a variety of services, including administration of immunizations and Health/Wellness screenings. Requisite: All didactic coursework (ITPD and NTPD), both live sessions (ITPD), PRDO 7411 (NTPD), PRDI 7911 (ITPD), Immunization Training completed through APHA or Canadian Province, and a cumulative professional 2.0 GPA.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PRDO 8602 - APPE Community Credit-By-Challenge (6 Credits)

This credit-by-challenge portfolio will cover current and contemporary experiences obtained in a community pharmacy practice setting. Practice experiences include independent, large chain, or retail pharmacies that provide various services, including administration of immunizations and health/wellness screenings. Challenges will meet or exceed 240 hours of experience equivalency.

Grading Basis: Pass/Fail with IP

Typically Offered: Fall, Spring, Summer.

PRDO 8701 - APPE Elective Rotation (6 Credits)

Requisite: All didactic coursework (ITPD and NTPD), both live sessions (ITPD), PRDO 7411 (NTPD), PRDI 7911 (ITPD), Immunization Training completed through APHA or Canadian Province, and a cumulative professional 2.0 GPA.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

PRDO 8702 - APPE Elective Credit-By-Challenge (6 Credits)

This credit-by-challenge portfolio will cover current and contemporary experiences obtained in various practice settings. Students may participate in multiple activities that focus on medication-related problems dealing with diverse populations, with or without direct patient contact. Challenges may also include project-based experiences, management, board certification, additional degrees, etc. Challenges will meet or exceed 240 hours of experience equivalency.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 6.

Typically Offered: Fall, Spring, Summer.

Pharmacy Doctorate (PRDZ)

PRDZ 5000 - Interprofessional Collaborative Practice (IPCP) (1 Credit)

A one-semester course required of health professions students from the dental, medical, nursing, pharmacy, physical therapy, and physician assistant programs on the Anschutz Medical Campus. This course develops core competencies in teamwork & collaboration for incoming health professions students. Students will learn in Interprofessional Teams (IP) teams coached by IPE faculty, develop essential communication skills and processes for simultaneous and sequential teams, and provide feedback on individual and team performance to improve IP collaboration. Students will engage with foundational knowledge and basic practical teaming and communication skills which contribute to patient care and team development. Through team activities, discussion boards, didactic modules and clinical cases, students will explore the importance of teamwork, collaboration and quality improvement for patient centered care delivery, patient, and health care system outcomes. Students will reflect on professional roles/responsibilities and demonstrate interprofessional collaboration. The course takes place over 7 modules in the spring that involve individual, and team paced active learning. Each module includes approximately 2.5 hours of individual or team-paced activities. Both learners and teams are assessed during the sessions. Canvas is used for course content, communication, and administration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

PRDZ 5010 - IPPE- Community (80 hours) (2 Credits)

This is the first in a series of experiential-based courses, providing 80 hours of community pharmacy practice experience. Students will participate in all facets of community pharmacy practice, with a particular focus on the development of communication and professionalism skills. PRDZ 5965 Patient-Centered Communication is a pre-requisite to this course. Prerequisite: PRDZ 5965. Only open to ITPD students.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

PRDZ 5020 - Rx Essentials: Introduction to Calculations and Medical Terminology (1 Credit)

This 1-credit hour course is designed to provide PharmD students with a comprehensive review of prerequisite mathematics skills essential for pharmaceutical calculations, along with an introduction to calculations and medical terminology and abbreviations commonly used in pharmacy practice.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

PRDZ 5055 - Pharmacy Practice Fundamentals and Drug Information (4 Credits)

The course provides students with the tactics necessary to perform dispensing duties in most pharmacy settings. Fundamentals of the practice of drug information are introduced. Pharmacy practice and drug information fundamentals are presented in the context of the history of pharmacy and contemporary pharmacy practice.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 5075 - Self-Care and Nonprescription Medications (4 Credits)

This Course prepares students to be able to 1) collect appropriate patient data to make an assessment for self-care (e.g. nonprescription products), 2) conduct a patient-centered assessment, and 3) design, implement, evaluate, and adjust a patient-centered self-care plan. This course is a pre-requisite to PRDZ 5965- Patient-Centered Communication.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 5965 - Patient-Centered Communication (4 Credits)

Students develop skills to communicate effectively with patients, caregivers, and healthcare providers to facilitate optimal patient outcomes. These courses cover all aspects of professional communication, including gathering, organizing, conveying, and documenting patient-related information. This course will include a live, on-campus evaluation period. PRDZ 5075- Pharmacotherapy: Self-Care is a pre-requisite to this course; PRDZ 5985- Pharmacotherapy 1 is a co-requisite.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 5985 - Pharmacotherapy 1: Pulmonary, OBGYN, Urology, ED, Otic, Ophthalmology, Dermatology (4 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: pulmonology, OBGYN, ED, urology, dermatology, ophthalmology, and otic diseases. This course will include a live, on-campus evaluation period. Prerequisites: PRDZ 5965- Patient-Centered Communication is a co-requisite to the course.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 6000 - Interprofessional Healthcare Ethics and Health Equity (IPHE) (1 Credit)

A one-semester course required of health professions students from the dental, medical, nursing, pharmacy, physical therapy, and physician assistant programs on the Anschutz Medical Campus. This course develops foundational knowledge and basic practical skills to identify, analyze, and resolve ethical and health equity issues in clinical practice. This course integrates interprofessional collaboration and teamwork to teach students ethical theory and reasoning, professional ethics and its historical origins, and approaches to health care decision-making. Through team activities, discussion boards, didactic modules and clinical cases, students will practice navigating ethical dilemmas and identifying social, structural, and systemic issues that impact healthcare access, delivery of care, and patient outcomes. Students will reflect on professional roles and responsibilities and demonstrate interprofessional collaboration.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

PRDZ 6015 - Clinical Pharmacokinetics (3 Credits)

The influence of physiological and pathophysiological factors on drug levels is considered. Knowledge gained allows students to calculate the appropriate dosing of drugs in patients and anticipate how drug doses should be adjusted in disease and the presence of other drugs.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 6065 - Evidence-Based Medicine and Literature Evaluation (3 Credits)

An introduction and stepwise approach to evidence-based medicine. Students understand commonly used statistical tests and evaluate statistical results for statistical versus clinical significance. Students demonstrate by answering short drug information questions, presenting a journal club, and writing a drug information paper.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 6085 - Pharmacotherapy 2: Cardiology (5 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Cardiology.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 6095 - Pharmacotherapy 3: Endocrinology, Renal (4 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: endocrinology and renal.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 6096 - Pharmacotherapy: Endocrinology (3 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: endocrinology. Restrictions: Open only to ITPD students.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 6910 - IPPE- Health System (80 hours) (2 Credits)

This experiential-based course provides 80 hours of health-system pharmacy practice, focusing on the delivery of patient care and systems used to provide care to multiple patients. Course further develops professionalism, communication, and skills needed for advanced experiential training. Restriction: Open to ITPD students only.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDZ 6945 - Public Health and Health Outcomes (3 Credits)

Introduces students to health care delivery systems and discusses the social, political, and economic factors that influence these systems. Students will link various medication use systems to their role in development and participation in health promotion, disease prevention, and public health policy.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 6965 - Clinical Problem-Solving Skills (2 Credits)

This course builds upon the principles and skills from PRDZ 5055/6065 and includes application inside and outside the classroom of drug information, effective search strategies and literature evaluation, critical appraisal of scientific literature, and applying evidence in clinical practice.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 6985 - Pharmacotherapy 4: Infectious Diseases (5 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: infectious disease.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 6995 - Pharmacotherapy 5: Psychiatry, Neurology (4 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: infectious disease.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 7015 - Seminar Research (1 Credit)

Students will apply their ability to retrieve, evaluate, and utilize professional information in a critical and scientific manner. Students independently determine how to best solve a pharmacy-related question using scientific principles and present their findings to a large audience.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

PRDZ 7025 - Pharmacogenomics (2 Credits)

The course provides students with an understanding of how genetic factors influence drug efficacy. Knowledge gained from this course enhances students' ability to select the most effective therapeutic intervention.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7055 - Pharmacy Management (2 Credits)

This course introduces management in community pharmacy practice, hospital pharmacy management, and other business and management skills needed to be successful in a variety of different practice settings.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7085 - PT 6: Immunology, GI, Rheumatology, Transplantation, Osteoporosis (4 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Immunology, Rheum/transplant/osteoporosis, and GI.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7095 - PT 7: Oncology (3 Credits)

This course is part of a 7-course series that includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions. Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Oncology

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7096 - Pharmacotherapy: Transplant (1 Credit)

This 7-course series includes pathophysiology, pharmacology, and therapeutics of a range of system-based physiological conditions.

Standards of care, controversial issues, pharmacotherapy advances, and patient management are covered. Areas covered in this course: Transplant Restrictions: Open to ITPD students only.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7331 - Pharmacotherapy- Pediatrics Elective (1 Credit)

Course combines pathophysiology, advanced pharmacotherapeutics management, patient assessment, & professional skills development for disorders and issues of pediatric patients. Course may include case-based, team-based learning to provide opportunities for the application of clinical skills & knowledge in providing patient care.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

PRDZ 7765 - Advanced Diabetes Management - 1 (1 Credit)

This elective course focuses on advanced diabetes management including the utilization of technology and digital health tools. This course is specifically tailored to address pattern management and complex diabetes cases. Learners will engage in comprehensive didactic approach of 12 individual modules, complex patient cases, and exposure to diabetes technology and digital health tools to successfully optimize diabetes care and make clinical decisions. We will expand upon foundational diabetes and communication knowledge, skills, and abilities.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

PRDZ 7775 - Integrative Health and Medicine (1 Credit)

This course is designed to develop a broad knowledge base in the field of Integrated Health and Medicine. This course will cover common vitamins and minerals, herbal products, bio-identical hormones, core domains, and discussions of regulatory issues.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

PRDZ 7808 - Pharmaceutical Industry Fundamentals (2 Credits)

The course provides a broad background on the pharmaceutical industry. Reviews of major pharmaceutical company functions will be covered; Emphasis will be placed on clinical development and areas of opportunity for those with a pharmacy or pharmaceutical sciences background.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7818 - Pharmaceutical Industry Fundamentals (1 Credit)

Course provides a broad background on the pharmaceutical industry, with a focus on 7 key topic areas of interest to practicing pharmacists, including fundamental areas, such as clinical development, medical affairs and commercial topics. Students will complete an additional topic of their choice to meet their professional needs.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

Typically Offered: Fall, Spring, Summer.

PRDZ 7828 - Advanced Diabetes Management (2 Credits)

This elective course focuses on advanced diabetes management and the utilization of technology and digital health tools. Learners will engage in hands-on, simulated experiences with diabetes technology and digital health tools to successfully optimize diabetes care and make clinical decisions remotely. We will expand upon foundational diabetes and communication knowledge, skills, and abilities established from the completion of PRDZ 5965 Patient-Centered Communication and PRDZ 6095 Pharmacotherapy 3. Prerequisites: PRDZ 5965 and PRDZ 6095

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 7830 - Infectious Diseases (2 Credits)

This course will serve as a review of infectious diseases fundamentals including clinical microbiology, antimicrobial spectrum, PK/PD, ADRs, and DDIs. This course will also cover new ID content about antimicrobial stewardship principles, antibiotic resistance, and management of select infectious diseases. Recent advances in pharmacotherapy, patient-specific management strategies, and controversial issues will be included and emphasized. This course meets the requirement for an advanced elective course. Prereq or Coreq: PRDO or PRDM 7730.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

PRDZ 7835 - Advanced Cardiovascular Therapy (2 Credits)

This course will address the pharmacology and appropriate clinical use of drug therapy for selected acute and chronic cardiovascular disorders. Recent advances in pharmacotherapy, patient-specific management strategies, and controversial issues will be included and emphasized. This course meets the requirement for an advanced elective course.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

PRDZ 7842 - Medical Use of Cannabis (2 Credits)

The course will address the pharmacology and appropriate medical use of cannabis used in the treatment and management of selected disease states. The course will also focus on the pharmacokinetics, pharmacodynamics, legal aspects, special populations, and patient information (safety) of cannabis. This course meets the requirement for an advanced elective course.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

PRDZ 7850 - Geriatric Pharmacotherapy (2 Credits)

This course is an interdisciplinary course that expands on the curriculum of the SSPPS and provides practical instruction for pharmacists in geriatric care. This course is intended to provide the student with a glimpse into the interdisciplinary care model for geriatric patients, as well as common medical, psychological, and social issues encountered when caring for older adults. It is also intended to provide students with opportunities to further develop problem-solving skills for use in an interdisciplinary setting. This course meets the requirement for an advanced elective course.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 7852 - Clinical Capstone 2 (2.5 Credits)

This course reviews and assesses a broad range of skills necessary for current and future pharmacy practice. It builds on skills gained during the 3.5 credit clinical capstone course (PRDO 7851) and ties experience gained in the Advanced Introductory Pharmacy Practice Experience (AIPPE) for further peer and faculty feedback, mentorship and assessment. Prerequisite: Open only to ITPD students.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

PRDZ 7860 - Integrative Health and Medicine (2 Credits)

This course is designed to develop a broad knowledge base in the field of Integrated Health and Medicine. This course will cover common vitamins and minerals, herbal products, bio-identical hormones, core domains, and discussions of regulatory issues.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

PRDZ 7870 - Pediatric Pharmacotherapy (2 Credits)

This course will be offered to students interested in developing and fostering their knowledge and assessment of childhood diseases and pharmacotherapy. Clinical pharmacy specialists and staff from the Children's Hospital of Denver will teach this course. This course meets the requirement for an advanced elective course. This course meets the requirement for an advanced elective course.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Summer.

PRDZ 7882 - Drugs of Abuse (2 Credits)

This course will explain the pharmacological, physical, and psychological effects of drugs of abuse on the body relevant to real-world pharmacy practice. The course aims to develop clinical skills for use in emergency situations, proper prescribing of drugs of abuse, and understanding of the process of addiction/abuse in order to identify and mitigate potential harm. This course meets the requirement for an advanced elective course.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

PRDZ 7885 - Acute Care Pharmacotherapy (2 Credits)

This course will address the pharmacology and appropriate clinical use of agents used in the treatment of selected acute disorders found in hospitalized patients. The course will also focus on the comprehensive management of these acute disorders. Recent advances in pharmacotherapy, patient-specific management strategies, and controversial issues will be included and emphasized. This course meets the requirement for an advanced elective course.

Grading Basis: Letter Grade with IP

Typically Offered: Spring, Summer.

PRDZ 7905 - Advanced IPPE (240 hours) (6 Credits)

Students are placed on a 6-week, full-time (40 hours per week) patient care experience in which they can begin to apply their didactic knowledge. In this advanced IPPE students demonstrate competency to meet pre-APPE core performance domains and abilities. This course must be taken in the same semester (just prior to) PRDZ 7995- Clinical Capstone. Prerequisite: Open to ITPD students only.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring.

PRDZ 7945 - Pharmacy Law and Regulatory Standards (3 Credits)

Legal and ethical issues in US pharmacy practice are presented in this course in lectures, case studies, and discussion group formats.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 7995 - Clinical Capstone (6 Credits)

The course is designed to be a capstone that integrates essential core pharmacy practice topics. The philosophy of this course is to facilitate student learning and hold students accountable for prior learning in an integrated manner using complex patient scenarios. This course builds on PRDZ 7905- Advanced Introductory Pharmacy Practice Experience. Therefore, completion of PRDZ 7905, just prior to it, is a pre-requisite to it. Pre-requisites to this course include all Pharmacotherapy courses and PRDZ 6965 Clinical Problem-Solving Skills. Prerequisites: PRDZ 7905, PTDZ 6965, PRDZ 5985, PRDZ 6085, PRDZ 6095 (or 6096), PRDZ 6985, PRDZ 6995, PRDZ 7085 (or 7086), PRDZ 7095.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

PRDZ 8055 - APPE- Elective (240 hours) (6 Credits)

Six-week rotation; 40 hours weekly. This experience will take place in various practice settings. Students may participate in various activities that focus on medication-related problems dealing with various populations, with or without direct patient contact.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDZ 8056 - APPE- Elective International (240 hours) (6 Credits)

Six-week rotation; 40 hours weekly. This pharmacy practice experience is an opportunity for students to train in various international clinical practice environments.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDZ 8065 - APPE- Ambulatory Care (240 hours) (6 Credits)

Six-week rotation; 40 hours weekly. This experience will take place in an ambulatory care, multidisciplinary practice setting. Practice sites may include hospital-based clinics, physician group practices, and community or public health clinics that provide health care directly to patients.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDZ 8075 - APPE- Community (240 hours) (6 Credits)

Six-week rotation; 40 hours weekly. This experience will take place in a community pharmacy practice setting. Practice sites include independent, large chain, or retail pharmacies that provide a variety of services, including administration of immunizations and health/wellness screenings.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

PRDZ 8085 - APPE Hospital/Health-System (240 hours) (6 Credits)

Six-week rotation; 40 hours weekly. This experience will take place in an inpatient practice setting. Students will be exposed to adult patients with a variety of disease states, and participate in other institutional activities related to clinical pharmacy services. Section 1 is Health System- Institutional and Section 2 is Health System- Acute Care/Gen Med.

Grading Basis: Letter Grade with IP

Typically Offered: Fall, Spring, Summer.

Pharmacy Integrative Health Medicine (PIHM)

PIHM 7440 - Evidence-based Medicine in IHM (3 Credits)

This course provides an introduction and step-wise approach to evidence-informed medicine. Knowledge gained from this course allows students to search for and understand published medical studies, commonly-used research designs and statistical tests, and their application to clinical practice.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PIHM 7441 - Evidence Based Medicine in IHM (1.5 Credits)

This course provides an introduction and step-wise approach to evidence-informed medicine, covering topics such as study design, asking clinical questions and statistical methods. This course serves as the foundation to evidence-based medicine in the application of IHM literature in PIHM 7442.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.5.

Typically Offered: Fall, Spring, Summer.

PIHM 7442 - Applied Evidence Based Medicine in IHM (1.5 Credits)

This course continues from PIHM 7441. It provides students knowledge and skills to search for and evaluate published IHM-related clinical studies and/or information, identify and evaluate commonly-used research designs and statistical tests, and apply this to clinical IHM practice. Pre-Requisite: PIHM 7441 IHM Evidence-based Medicine I or PRDO 7440 Evidence-based Medicine or PHRD 6065 Evidence-based Medicine

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.5.

Typically Offered: Fall, Spring, Summer.

PIHM 7670 - Pharmacology of Natural Supplements (2 Credits)

This course describes the science of botanical products used to treat human disease. It will examine active compound structures and their naturally occurring derivatives, including structure-activity relationships, known molecular targets, and modes of action.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PIHM 7680 - Integrative Health in Common Clinical Diseases (2 Credits)

This course describes the science of botanical products used to treat human disease. It will examine active compound structures and their naturally occurring derivatives, including structure-activity relationships, known molecular targets, and modes of action.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PIHM 7775 - Introductory & Applied IHM I (1 Credit)

This course introduces core Integrated Health and Medicine domains, familiarizes students with the most common herbal products utilized by consumers, discusses regulatory issues and strategies for identifying good sources of products, and touches on popular therapies including bio-identical hormones.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

PIHM 7778 - Introductory & Applied IHM II (1 Credit)

This course develops a broad knowledge base in the field of Integrative Health & Medicine (IHM) which combines conventional western medicine with complementary and alternative medicine (CAM), with focus on aromatherapy, homeopathy, chiropractic medicine and mindfulness medicine. Pre-Requisite: PIHM 7775

Grading Basis: Letter Grade

Typically Offered: Fall, Spring, Summer.

Philosophy-CSU (PHLY)**PHLY 5640 - Seminar in Animal Rights (3 Credits)**

Contemporary issues concerning nature and moral status of nonhuman animals.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PHLY 6660 - Science and Ethics (3 Credits)

Science, skills, and beliefs directed at the maintenance and improvement of health for all people.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Physical Medicine (PHMD)**PHMD 8000 - Physical Med & Rehab (4-8 Credits)**

Max:4. This elective provides experience in the diagnosis and treatment of patients with pathology of the neurologic and musculoskeletal systems. 4 different locations (VA, Denver Health, University Hospital, The Children's Hospital) allow treatment of a variety of conditions related to rehabilitation.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PHMD 8100 - PHMD Elective Away (4-8 Credits)

This Physical Medicine and Rehabilitation elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2or 4 weeks. Prereq: 800

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PHMD 8600 - Research Physical Med (4-24 Credits)

2-12 wks. Written evaluation must be sent by individual instructor, with course director responsible for final grade. Prereq: PHMD 8000. Obtain departmental approval and all arrangements made at least one month in advance and prior approval from Associate Dean for Student Affairs.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Physical Therapy Doctorate (DPTR)**DPTR 5001 - Clinical Anatomy I (5 Credits)**

This course follows a regional approach to gross anatomy of the musculoskeletal, circulatory and nervous systems of the upper and lower extremities, thorax and head and neck. Supplemented by cross sectional anatomy, radiographic and digital imaging.

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 5011 - Neuroscience (3 Credits)

This course provides a framework for understanding the structural and functional organization of the human nervous system. Principles and applications of neurophysiology, neuroanatomy and functional correlates are included. Finally, diseases and dysfunctions of the nervous system that are relevant to current practice are introduced.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5101 - Movement Science I (3 Credits)

This course investigates movement science with emphasis on foundational biomechanical principles related to human posture and movement. Qualitative and quantitative movement analysis is presented with emphasis on clinical application.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5111 - Exercise Science (2 Credits)

This course will provide students with the current state of knowledge in the physiology of exercise. A systems approach will be used to provide a thorough understanding of the acute and chronic adaptations to exercise training, with an emphasis on the mechanisms underlying these adaptations.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5141 - Human Growth & Development (2 Credits)

This course addresses functional movement across the life span in healthy individuals. Emphasis is on stages in life when the greatest changes in motor behavior occur and the factors that influence those changes. Developmental changes in all systems and their contributions to functional movement will be explored.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5151 - Motor Control & Motor Learning (2 Credits)

This course presents the foundation of motor learning and control as it applies to optimal movement across the lifespan. Emphasis is on variables related to the individual task composition, the environment and augmented information that enhance practice of motor skills. These principles are applied to physical therapist practice.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 5161 - Psychosocial Aspects of Care I (1 Credit)

This course is focused from the perspective of the practitioner as a person. General psycho-emotional issues and specific theories related to: practitioner self-awareness, emotions, spirituality, grief-loss-mourning, psych factors associated with the experience of pain will be presented. Introduction to motivational interviewing is included

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5162 - Psychosocial Aspects Care II (2 Credits)

Builds on knowledge, skills and attitudes gained in DPTR 5161 with additional focus on general issues and theories related to: changing behaviors, depression and anxiety, sexuality in rehabilitation, suicidal behavior, addiction in society, stress management and conflict resolution.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

DPTR 5171 - Health Promotion and Wellness I (1 Credit)

Disease prevention and health promotion are recognized as integral aspects of physical therapist practice. In this first of two courses, students will use current models of behavior change, disability, and population health to understand the multiple determinants of health and wellness. Using oneself as the client, students will complete an individual health assessment, identify areas of growth, and generate a plan to promote their own health and wellness.

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 5201 - Examination & Evaluation I (2 Credits)

This course introduces the physical therapist's examination of the patient. This course will familiarize the student with the ICF framework and emphasize foundational examination skills including communication, manual muscle testing, goniometry, and surface palpation.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 5202 - Examination and Evaluation II (2 Credits)

This course emphasizes developing a process of hypothesis generation to direct clinical decision making during the examination part of the patient encounter. Skill development includes examination techniques of the integumentary, cardiovascular/pulmonary, neuromuscular, and musculoskeletal systems, including analysis of human movement.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 5211 - Foundations of Intervention I (2 Credits)

This course introduces basic intervention principles, including fundamentals of tissue healing and adaptation. Intervention techniques including posture and positioning, basic mobility with and without assistive devices, and thermal physical agents for improving functional mobility and for managing a variety of clinical populations are introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 5212 - Foundations of Intervention II (2 Credits)

Further introduction and advancement of foundational intervention principles and techniques including soft tissue mobilization, physical agents and electrotherapeutic modalities. Emphasis is on the application of exercise as an intervention for improving functional mobility and for managing a variety of clinical problems.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 5301 - Medical Conditions I (4 Credits)

This course highlights the physical therapy management of patients with cardiovascular, pulmonary and metabolic disorders across the lifespan and healthcare settings. Physiology, medical management, diagnostic testing, clinical decision making and medical screening are covered with implications for physical therapist's practice.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5401 - Musculoskeletal Conditions I (4 Credits)

This course covers the examination, clinical reasoning, and physical therapy management of musculoskeletal disorders across the lifespan, focusing on conditions affecting the lower quarter, including the lumbopelvic region, hip, knee, foot, and ankle. Medical management principles such as radiology and pharmacology are also covered, with implications for physical therapy management.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 5501 - Neuromuscular Conditions I (3 Credits)

Clinical decision-making frameworks are discussed for management of people with neurologic conditions with an emphasis on stroke and cerebral palsy. Clinical skills are taught for examination, evaluation and intervention across the lifespan and across settings. Evidence based practice and manual guidance are emphasized for intervention.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 5621 - Evidence Based Practice (3 Credits)

This course covers and applies concepts and steps of evidence-based practice to a variety of clinical settings, including: searching; selection; and appraisal of the literature. Emphasis is on searching the literature to answer clinical questions regarding physical therapy tests and measures, interventions, and patient prognosis.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5631 - Clinical Reasoning I (1 Credit)

This introductory course teaches students to integrate current evidence with critical reasoning in the ICF framework to facilitate patient-centered decision making in the examination, prognosis, and intervention for elementary patient cases across a variety of clinical practice settings.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5711 - Professional Development I (2 Credits)

This course is the first in a series of courses on professional development. Students will explore self and begin the journey of becoming a physical therapist. This course emphasizes reflecting on personal and professional values, examining professional communication behaviors, and developing foundational writing skills.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DPTR 5731 - Healthcare Delivery I (1 Credit)

This course provides a basic overview of the American health system and all payer types. Impact of regulation on therapists and support personnel supervision will be discussed with a focus on the Colorado State Practice Act, state and federal laws. Key concepts of Quality Improvement and Safety will be introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 5841 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPTR 5842 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 5843 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 5901 - Integrated Clin Experience I (1 Credit)

Short-term clinical education experience providing initial foundation and understanding of clinical practice with emphasis on integration of didactic and clinical learning while working in a student team.

Prerequisites: DPT Program students only

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 6002 - Clinical Anatomy II (3 Credits)

This course follows a regional approach to gross anatomy of the systems of the abdomen and pelvis and supplemented by cross sectional anatomy radiographic and digital imaging. An in-depth study of upper and lower extremity arthrology through whole-body donor dissection is included.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

DPTR 6102 - Movement Science II (2 Credits)

Application of movement science in physical therapy practice with emphasis on human movement related to aging, clinical analysis, tests & measures, and prosthetics & orthotics. The prosthetic & orthotic unit is designed to build student competency in clinical management of individuals who require use of common prosthetic & orthotic devices

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 6302 - Medical Conditions II (2 Credits)

This course continues the physical therapy management of patients with varied medical conditions (cancer; rheumatic) occurring across the lifespan and health care settings. Physiology, medical management, diagnostic testing, clinical decision making and medical screening are covered with implications for physical therapist's practice.

Grading Basis: Letter Grade

Typically Offered: Fall.

DPTR 6303 - Medical Conditions III (3 Credits)

This course continues the physical therapist management of medical conditions. Integumentary, endocrine, transplant, geriatric and ICU care are emphasized. Physical therapist's clinical decision-making and differential diagnosis are advanced while integrating physiology, medical and pharmacological management and diagnostic testing.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 6402 - Musculoskeletal Conditions II (2 Credits)

This course continues the examination, clinical reasoning, and physical therapy management of musculoskeletal disorders across the life span, focusing on conditions affecting the cervical and thoracic regions. Medical management principles such as radiology and pharmacology are also covered, with implications for physical therapy management.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

DPTR 6403 - Musculoskeletal Conditions III (2 Credits)

This course continues the examination, physical therapy management and clinical reasoning necessary for the management of individuals with musculoskeletal (MSK) disorders across the life span, focusing on upper extremity conditions. MSK medical management, radiology and pharmacology are covered with implications for physical therapy management.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 6404 - Musculoskeletal Conditions IV (2 Credits)

This course covers the examination, clinical reasoning, and physical therapy management of musculoskeletal disorders across the life span, focusing on temporomandibular disorders, pediatric orthopedics, adolescent orthopedics, pelvic health, working adults, and geriatric orthopedics within the continuum of care. Medical management principles such as radiology and pharmacology are also covered, with implications for physical therapy management.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

DPTR 6502 - Neuromuscular Conditions II (2 Credits)

This course includes an in-depth exploration of people with neurodegenerative conditions across the lifespan, specifically as related to tests and measures, prognoses, and intervention approaches. Radiology and pharmacology as related to neuropathy are included.

Grading Basis: Letter Grade

Typically Offered: Summer.

DPTR 6503 - Neuromuscular Conditions III (4 Credits)

This course progresses and synthesizes clinical skills, decision-making and reasoning using frameworks and evidence applied the physical therapy management for people with neurological conditions across the lifespan. Primary topics include vestibular disorders, traumatic/acquired brain injury, developmental and genetic disorders, and spinal cord injury.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

DPTR 6632 - Clinical Reasoning II (1 Credit)

This advanced course teaches students to integrate current evidence with critical reasoning in the ICF framework to facilitate patient-centered decision making in the examination, prognosis, and for intervention for complex patient cases across a variety of clinical practice settings.

Grading Basis: Letter Grade

Typically Offered: Fall, Summer.

DPTR 6633 - Clinical Reasoning III (2 Credits)

This course requires students to integrate evidence, patient values, and clinical expertise with the ICF model of clinical decision making for actual patient cases. Students will identify and answer focused questions regarding examination, intervention, and prognosis through literature searches and online collegial discussion forums. Requirement: DPT Students only

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 6712 - Professional Development II (2 Credits)

Professional Development II expands conversations regarding our professional identity to consider what it means to be a health professional. We will explore our obligations to our patients, our profession, and society and consider the future of physical therapist practice. During the second half of the course we will turn our attention toward professional development, including licensure, practice settings, and post-professional career opportunities.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DPTR 6713 - Professional Development III (1 Credit)

Introduction to leadership in healthcare including leadership styles/characteristics. Explores preparation for professional development opportunities following licensure including continuing education, consideration of salary/benefits/debt/etc., and the first position as a new professional. Discussion about career expectations, moving through the continuum of novice to expert, debate, and developing one's professional identity/potential.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

DPTR 6732 - Healthcare Delivery II (3 Credits)

This course covers the organization, financing, and delivery of physical therapy services within the United States healthcare system. Topics include business concepts relevant to providing care and managing a practice (marketing, human resources, risk management, financial management), and legal and regulatory issues (licensure, fraud/abuse laws, Americans with Disabilities Act, supervision of support staff). Additional content includes comparisons between the US system and other countries, and professional issues like interviewing, negotiating job offers, and selecting positions after graduation.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 6851 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue study and learning content of their own choosing or a special clinical interest under guidance of a faculty mentor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DPTR 6852 - Independent Study (1-3 Credits)

This course provides students with an opportunity to pursue content of their own choosing under guidance of a faculty mentor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 6853 - Independent Study (1-5 Credits)

This course provides students with an opportunity to pursue content of their own choosing under guidance of a faculty mentor.

Grading Basis: Letter Grade

Typically Offered: Spring.

DPTR 6902 - Integrated Clinical Experience II (1 Credit)

ICE II occurs in the middle of the fall semester and focuses on the broader roles that physical therapists have within patient and local community groups. It also continues the integration of classroom and clinical learning while student teams are placed in a new clinical setting (as compared to ICE I). ICE II allows immersion in activities focused on professional formation, advanced clinical problem solving, community engagement, and further development of cognitive, psychomotor and affective skills.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DPTR 6931 - Clinical Education I (5 Credits)

Eight-week, full time clinical experience providing students with the opportunity to take on responsibilities of the professional physical therapist, including beginning to manage a caseload and participating in a healthcare team. Requirements: DPT Students only.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall, Summer.

DPTR 6932 - Clinical Education II (6 Credits)

This is a 10-week, full-time supervised clinical experience. Experience with emphasis on increasing independence in management of patients, becoming an integral member of the healthcare team and using self-assessment for professional development.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DPTR 7112 - Applied Exercise Science (3 Credits)

This course will focus on functional capacity and performance testing, as well as exercise prescription, for individuals with multi-system involvement. Emphasis will be placed on clinical decision-making to tailor evidence-informed, patient-centered rehabilitation interventions, optimizing and enhancing each individual's functional abilities.

Additionally, the course will address overcoming multilevel barriers to both the prescription and execution of exercise interventions, as part of comprehensive rehabilitation care aimed at promoting health and function in medically complex populations.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DPTR 7171 - Health Promotion and Wellness II (3 Credits)

Students will apply fundamental concepts learned in HPWI to further understand individual, social and structural determinants of health. Equipped with this knowledge, they will work to design interventions and programs that promote health at the individual and community level.

Grading Basis: Letter Grade with IP

A-GRAD Restricted to graduate students only.

Typically Offered: Summer.

DPTR 7212 - Elective (1 Credit)

Various topics: provides students with the opportunity to explore selected topics, related to clinical practice, in depth or topics that are outside of the scope of the set curriculum. DPT students only.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 1.

Typically Offered: Summer.

DPTR 7213 - National Physical Therapy Examination Preparation (1 Credit)

This course provides a structured and comprehensive review of key concepts covered on the National Physical Therapy Examination (NPTE). Students will engage with interactive lectures, structured study plans, and practice examinations designed to simulate the NPTE testing format and environment. Emphasis is placed on test-taking strategies, time management, and problem-solving skills. Content review areas may include the musculoskeletal, neuromuscular, cardiovascular, pulmonary, and integumentary systems, with a focus on clinical reasoning and application of foundational knowledge. Additional resources, including question banks and study guides, will be provided to reinforce learning. Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Summer.

DPTR 7641 - Integrated Practice (2 Credits)

A synthesis of curricular content applied to highly complex situations illustrative and inclusive of clinical practice across the lifespan. Through retrospective and prospective reasoning, students will analyze and articulate decisions based on reasoning, evidence, and contextual realities with colleagues across health care professions. Requirement: DPT Student Enrollment Only
Grading Basis: Letter Grade with IP
Typically Offered: Summer.

DPTR 7651 - Clinical Reasoning Capstone (4 Credits)

Final course in the clinical reasoning sequence requires students to articulate and defend their clinical decision-making process in the exam, eval, management, and outcome assessment for a selected patient. Students will synthesize and integrate the evidence to inform decision making throughout each aspect of the patient mgmt process. Requirement: DPT Student Enrollment Only
Grading Basis: Letter Grade
Typically Offered: Summer.

DPTR 7861 - Independent Study (1-3 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP
Repeatable. Max Credits: 6.
Typically Offered: Summer.

DPTR 7862 - Independent Study (1-5 Credits)

Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DPTR 7933 - Clinical Education III (10 Credits)

Terminal clinical experience with emphasis on professional identity formation and functioning as an entry-level clinician within the complexities of the healthcare system. Students will develop a deeper understanding of the role of the physical therapist within the profession and broader society. First phase of the yearlong internship. Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

Political Science-CSU (POLS)

POLS 6650 - Public Policy Analysis (3 Credits)

Course will help students develop skills that allow them to define and critically analyze policy issues/problems, specify how decisions will be made regarding analysis of problems, evaluate alternative methods/solutions, and assess the means and costs of implementing policies. Prerequisite: Previous or concurrent coursework in statistics. Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only. Additional Information: Colorado State University.
Typically Offered: Spring.

POLS 6700 - Politics of the Environment and Sustainability (3 Credits)

This course addresses the following questions: What is the relationship between nature and society? What interventions/strategies are proposed? How are the two related? Included is the discussion of the different approaches to managing/governing nature. Prerequisites: Statistics and introductory biology required
Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only. Additional Information: Colorado State University.
Typically Offered: Fall.

Population Mental Health Wellbeing (PMHW)

PMHW 6601 - Mental Health (3 Credits)

This course examines mental health and substance abuse recognizing that the promotion of well-being by preventing mental health disorders and substance addictions is as important as intervention and treatment. Etiology, prevalence, and impact of mental health and substance abuse disorders by culture, ethnicity and gender are discussed. Cross-listed with CBHS 6630
Grading Basis: Letter Grade
Typically Offered: Spring.

PMHW 6620 - Mental Health Systems and Policy (3 Credits)

This course will examine existing policies related to behavioral health, compare structures of behavioral healthcare delivery, and explore innovations in the field of behavioral health and integrated care models. Grading Basis: Letter Grade
Typically Offered: Fall.

PMHW 6621 - Mental Health and Wellbeing Promotion (3 Credits)

Understanding the basis of the field of positive psychology and its role in public health, key dimensions of well-being and their implications to physical and mental health outcomes, mental health and well-being research and practice, strategies to enhance well-being and prevent and/or treat mental health and substance use disorders. Grading Basis: Letter Grade
Typically Offered: Spring.

PMHW 6622 - Opioid Use, Overdose and Public Health (1 Credit)

This course will discuss the physiologic and behavioral effects of opioid use and opioid use disorder, factors contributing to the modern opioid epidemic in the U.S., and diverse public health interventions and policy approaches to preventing harm from opioid use. Grading Basis: Letter Grade
A-PUBH1 Graduate students and public health certificate students only. Typically Offered: Fall.

PMHW 6625 - Substance Use: A Public Health Perspective (3 Credits)

Introduces substance use epidemiology, policies, prevention interventions, treatment approaches and innovations in substance use research as well as examining factors influencing health disparities in substance use outcomes. Grading Basis: Letter Grade
Typically Offered: Fall.

PMHW 6627 - Mental Health and Technology (1 Credit)

This course will examine the use of technology and methods to evaluate applications of technology to mental health and substance use treatment and prevention, ethical issues associated with technological applications in mental health, methods for enhancing user engagement, technology options for application in this area of public health.

Grading Basis: Letter Grade

Typically Offered: Summer.

PMHW 6670 - Special Topics: Population Mental Health Wellbeing (1-3 Credits)

Special interest areas of population mental health and wellbeing are analyzed in depth. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

Typically Offered: Fall, Spring, Summer.

Preventative Medicine (PRMD)

PRMD 6642 - Legislative Health Care Policy (2 Credits)

Grading Basis: Letter Grade

PRMD 8003 - Specialty Preventive Med (4-8 Credits)

4 wks. Max:4. Designed for students interested in exploring the field of preventive medicine. Tailored educational experiences in the Denver area in a variety of settings. Speak with course director to design this elective. Prereq: Course director approval required to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

PRMD 8100 - PRMD Elective Away (8 Credits)

This Preventive Medicine elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PRMD 8600 - Research Preventive Med (4-24 Credits)

2, 4, 8 or 12 wks. Designed for students interested in preventive medicine research. Tailored research experiences in the Denver area can be established in a variety of settings. Speak with the course director to design this elective. Prereq: Course Director and Associate Dean for Student Affairs approval required to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

PRMD 8630 - PRMD Research Away (4-16 Credits)

This Preventive Medicine elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 6 or 8 weeks.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

PRMD 9000 - Intercampus Spec Topics (1-10 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 10.

Psychiatry (PCHY)

PCHY 5150 - Womens Health (3 Credits)

Grading Basis: Letter Grade

Additional Information: Colorado State University.

PCHY 5160 - Pub Hlth Prac-History (1 Credit)

Grading Basis: Letter Grade

Additional Information: Colorado State University.

PCHY 5161 - Pub Hlth Pract-Oversight (1-18 Credits)

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

Additional Information: Colorado State University.

Psychiatry (PSYM)

PSYM 8000 - Advanced Inpatient Psychiatry (8-12 Credits)

Students take responsibility as primary provider for seriously ill patients, work closely with treatment team directed by an attending psychiatrist.

Students assume responsibilities for care of patients that interns typically assume: performing H&Ps, writing orders, giving "bad news" when appropriate.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

PSYM 8003 - Elective in Psychiatry (4-8 Credits)

Students in conjunction with the office of psychiatry medical student education, choose to work with patients on an inpatient psychiatry ward, outpatient clinic or other psychiatric units as a member of a treatment team.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PSYM 8004 - Advanced Child and Adolescent Inpatient Psychiatry (8-12 Credits)

4 or 6 wks. This Sub-I course DOES NOT meet the UC SOM requirement for graduation. Evaluate and manage adolescents with psychiatric disorders. Students will be members of multidisciplinary team learning about psychopathology, psychopharmacology, psychotherapy, family therapy and other treatment modalities. Students will learn about systems of care. Restrictions: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8006 - Clinical PSYM Consultation/Liaison (8-12 Credits)

Consultation-Liaison Psychiatry a unique discipline within the field of psychiatry which combines knowledge of medical illnesses, psychotherapy and psychopharmacology with an ability to forge liaisons within the medical community. Evaluate and help manage patients with psychiatric disorders within medical settings. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8007 - Clinical PSYM Emergency Services (8-12 Credits)

Learn elements of crisis intervention, and to make psychiatric diagnoses and evaluate lethality. Students will evaluate and help treat a broad range of psychiatric difficulties, and encounter the psychiatric and psychosocial problems they will see in their practices. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8008 - Forensic and Correctional Psych (4-8 Credits)

Introduction to the interface of criminal law and psychiatry. Students will be involved in the evaluation of people entering pleas of incompetency to stand trial and not guilty by reason of insanity as well as the treatment and restoration process. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8009 - Clinical PSYM Addiction (8-12 Credits)

Learn the essentials of identification, assessment, and treatment of patients with substance use disorders. Emphasis on screening and brief intervention techniques. Learn principles of detoxification for alcohol, opioids, and cocaine; interpretation of drug testing results; proper prescribing practices. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8010 - Clinical PSYM Eating Disorders (8-12 Credits)

Evaluate and manage patients with eating disorders under the direction of fellows and attendings. Student will gain specific knowledge of classification, epidemiology, etiology, psychology, and treatment of eating disorders. Prerequisites: Contact coordinator to confirm availability.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8015 - Perinatal and Infant Mental Health (8 Credits)

Students will learn about maternal mental health during pregnancy and the first year postpartum, and gain understanding of infant mental health and the mother-baby relationship. Students will work in the following settings: outpatient mom-baby group therapy, psychiatric outpatient clinic, NICU, integrated mental health in OB/GYN and Young Mother's Clinic (pediatric primary care).

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

PSYM 8100 - PSYM Elective Away (4-8 Credits)

This Psychiatry elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

PSYM 8600 - Research in Psychiatry (4-24 Credits)

2-12 wks. Research electives in various areas of Psychiatry. Contact Randy Ross, MD or Sharon Hunter, PhD for menu of research options.

Prereq: The student must receive prior approval from the Associate Dean for Student Affairs and the course director to add course.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Psychology-CSU (PSCY)

PSCY 5150 - Women's Health (3 Credits)

Current issues in women's health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

PSCY 5170 - Perspectives in Global Health (3 Credits)

Science, skills, and beliefs directed at the maintenance and improvement of health for all people. Students can only receive credit for one of the following courses: PSCY 5170, ANTP 5710, CBHS 6619

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

PSCY 5950 - Independent Study - {Psychology (1-18 Credits)

Independent study in psychology.

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PSCY 6000 - Health Psychology (3 Credits)

This course will examine the connections between humans' cognitions, emotions, and behaviors and their mental and physical health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PSCY 6530 - Methods of Research in Psychology II (4 Credits)

Students will develop a strong understanding of the general linear model and learn how to use the model to answer substantive questions in their field of research. The course will include statistical analyses.

Prerequisite: BIOS 6601 or equivalent

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

Public Health - General (PUBH)

PUBH 5910 - Race, History and Health in Brazil (3 Credits)

Brazil has a long and extensive history of African enslavement, and in the coastal city of Salvador, African influences are strong and palpable. A large diaspora from different regions of Africa was formed during the colonial period, and this has led to the constant expression—and celebration—of an African heritage in Salvador. Today, Afro-Brazilian cultural elements in music, religion, and capoeira, an Afro-Brazilian art form, are now realities around the world. Brazil's legacies of slavery, colonialism, and segregation, along with its stark socio-economic inequalities, have disproportionately affected the health and well-being of its Afro-Brazilian communities. At the same time, the country is known for its leadership in universalizing access to healthcare, including life-saving HIV treatments. Grassroots activists and organizations operate both alongside of and in opposition to state responses to ongoing epidemics, including COVID-19. Brazil's therapeutic landscape is further complicated by a sophisticated system of traditional medicine that serves as alternative and complementary treatments to widespread biomedical options. The country—and especially the city of Salvador—is thus a critical location for the study of race, history, and health. This course is a 10-day study abroad program in which students will be immersed in the history, culture, and everyday lives of Afro-Brazilians in Salvador, Brazil. The program combines homestays with Brazilian families with classroom and field experiences. Guest lectures from Brazilian experts will discuss topics such as the nation's history, health, politics, music, religion, education, and Carnival. Activities will focus on the interplay of race and health to better understand the lived experiences and rich past of Afro-Brazilians.

Grading Basis: Letter Grade

Typically Offered: Spring.

PUBH 6600 - Foundations in Public Health (2 Credits)

This course examines the historical and conceptual bases of public health, the key issues and problems faced by the public health system, and the tools available for the protection and enhancement of the public's health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6606 - MPH Practicum (2 Credits)

All MPH concentrations require students to successfully complete a practicum in which the student demonstrates competencies and integrates knowledge. It is intended to enrich student's experience by providing an opportunity to apply theory and skills in a public health setting. Prereq: PUBH 6600 and successful completion of 3 additional core courses. Student must be in good academic standing to enroll. Only open to MPH Students. Instructor consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6615 - Public Health & Social Work Integrative Seminar (2 Credits)

This course provides a foundation for understanding, embracing and communicating about Public Health and Social Work as an integrated profession. It integrates theory and skills of the social work and public health professions and engages students in critical thinking about their potential for promoting social justice and health equity.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Summer.

PUBH 6625 - Anti-Oppressive Practice and Research in Public Health (2 Credits)

This course provides an overview of systems of oppression and situates public health as an institution that inadvertently maintains these systems. Students will develop skills to be anti-oppressive in their work as public health researchers and practitioners to disrupt systems of oppression.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

PUBH 6640 - Clinical Experience for MD-MPH Students (1 Credit)

MD-MPH students work in the clinic of an academic physician-scientist who specializes in a clinical area of interest to the student. The goals of this course are to maintain and further the clinical skills learned during medical school. Requisite: This course is only open to MD-MPH joint degree students. Instructor Consent Required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 3.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6650 - Practical Training for International Students (0.5 Credits)

Students complete a minimum of 45 hours of field work in a public health setting. The student's field placement must be approved through International Student & Scholar Services. Credit for this course cannot be applied to a degree. Requisite: This course is restricted to international students only.

Grading Basis: Non-Graded Component

Repeatable. Max Credits: 3.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6651 - MPH Research Paper (1-2 Credits)

Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data. Prereq: BIOS 6601, CBHS 6610 or CBHS 6611, EHOH 6614, EPID 6630, HSMP 6601, PUBH 6600 and permission of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 2.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6655 - Public Health Ethics (1 Credit)

This course provides a short introduction to public health ethics. After addressing several fundamental concepts and approach to the field, the remainder of the course focuses on ethical problems that arise out of the three core functions of public health. This framing ensures broad coverage in ethical problems across public health practice and policy.

Cross-listed with HEHE 5655

Grading Basis: Letter Grade

Typically Offered: Fall.

PUBH 6670 - Special Topics: Public Health (1-3 Credits)

Special interest areas of current public health research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

Grading Basis: Letter Grade

Repeatable. Max Credits: 999.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6690 - Global Inequality and Change (3 Credits)

Major issues in global inequality and change from a historical and contemporary perspective. Prereq: SOC 500

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PUBH 6840 - Independent Study: Public Health (1-3 Credits)

Faculty directed independent study in topics related to public health.

Department permission required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6842 - DrPH Seminar (1 Credit)

This doctoral level course will address theory and practice at a level beyond that covered in Master's level courses. Students will acquire advanced skills in developing, testing, and applying theory and methods to public health problems. Restrictions: Enrollment in DrPH or permission of instructor.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6850 - DrPH Practicum (2-4 Credits)

DrPH practicum is minimum 240 hours field experience under joint direction of CSPH Faculty mentor and practicing professional in community with leadership experience in public health agency. Written report/oral presentation specifying activities/ products/outcomes of experience required upon practicum hours completion. Restriction: Permission of Instructor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Repeatable. Max Credits: 4.

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6956 - Continued MPH Studies (1 Credit)

Continuation of MPH study experience. Prereq: PUBH 6955 and permission of instructor.

Grading Basis: Satisfactory/Unsatisfactory w/IP

A-PUBH1 Graduate students and public health certificate students only.

Typically Offered: Fall, Spring, Summer.

PUBH 6991 - MPH Capstone Integration (1 Credit)

MPH Capstone Integration will focus on interaction between MPH students from across concentrations to build communication skills and facilitate the students' integration of their projects within the broader scope of public health. Prereq: BIOS 6990 or CBHS 6990 or EHOH 6990 or EPID 6990 or HSMP 6990 or PMHW 6990 with a grade of S to register for the course. Restriction: This course is restricted to students with a MPHD-MPH plan of study only.

Grading Basis: Letter Grade with IP

Prereq: BIOS 6990 or CBHS 6990 or EHOH 6990 or EPID 6990 or HSMP 6990 or PMHW 6990 with a grade of S to register for the course.

Restriction: This course is restricted to students with a MPHD-MPH plan of study only.

Typically Offered: Fall, Spring, Summer.

Public Health-CSU (PBHC)

PBHC 5160 - Public Health Foundations (2 Credits)

This course will provide students with an overview of key concepts underlying public health in historical and contemporary perspective. The course will include attention to the main functions of public health as well as ethical principles associated with public health practice.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PBHC 5200 - Healthcare Systems, Policy and Management (3 Credits)

This course provides an overview of the U.S. healthcare system, its key components and their functional relationships. Students learn about the organization and financing of the U.S. system, how health policy is developed and implemented, and key principles of leadership and management for health professionals.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

PBHC 5300 - Environmental Public Health and Policy (3 Credits)

This course provides a broad understanding of the factors that influence natural, urban, rural, and workplace environments as well as human health risks from chemical, biological, and physical agents.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

PBHC 5340 - Public Health Data Management Using SAS (3 Credits)

Students will learn how to use SAS software for data management to prepare data for analyses. Main topics include importing and exporting data, variable and dataset manipulations. Introductions to producing reports, basic statistics, figures and SAS macros are also covered.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Fall.

PBHC 5400 - One Health in Public Health (3 Credits)

This course will examine the interconnectedness of environmental, human and animal health. Issues will be addressed from the perspectives of public health, medicine, veterinary science, and ecology bearing in mind the implications for health policy.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PBHC 5500 - Social and Community Health (3 Credits)

This course reviews a wide range of behavior change theories used in public health promotion/disease prevention interventions. Development, implementation and evaluation of programs and policies to promote and sustain healthy environments and lifestyles are examined. Prerequisite: Students can only receive credit for one of the following: PBHC 5500, HESC 5560, CBHS 6610, and CHBH 5090

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

PBHC 5530 - Global Health Foundations (3 Credits)

This course is designed to provide a broad overview of global health topics and enable students to appraise the current health status in a country; describe population diversity and possible inequalities; understand and critically assess the magnitude and likely causes of various health-related conditions and assess existing and plausible solutions.

Grading Basis: Letter Grade

Typically Offered: Fall.

PBHC 5540 - Decolonizing Global Health (3 Credits)

This course aims to analyze and evaluate various sectors within Global Health and provide students with a comprehensive understanding of the disparities that exist. It focuses on the colonial influence on the global health system and its impact on creating and reinforcing power imbalances. Students will gain a deeper insight into the underlying causes of these disparities and the ways in which they can be addressed. The course is designed to empower students with the knowledge and skills necessary to work towards a more equitable and just global health system.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 5600 - Quantitative Methods in Public Health (3 Credits)

Applied biostatistical methods including descriptive and statistical inference; odds ratio and relative risk, probability theory, parameter estimation, tests for comparing statistics of two or more groups, correlation and linear regression and overviews of: multiple and logistic regression and survival analysis. Requirements: Students can only receive credit for one of the following: PBHC 5600, BIOS 6601, EDRM 6060, VSCS 6620 or CHBH 6120

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

PBHC 5700 - Epidemiology for Public Health (3 Credits)

This course will provide an introduction to descriptive and analytic methods in epidemiology and their application to research and practice in public health.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PBHC 5720 - GIS in Public Health (3 Credits)

Students will gain an understanding of how spatial thinking and geospatial technologies can add context and insight into health issues at the local to global scales. Students will acquire fundamental skills in using various geospatial technologies to map and analyze health and other relevant data. Students will know how to produce cartographic products for publication or online distribution.

Grading Basis: Letter Grade

PBHC 5730 - Exploring Social Epidemiology (3 Credits)

Social epidemiology is the study of the connection between social exposures and population health. This course focuses on both theories and epidemiological methods relevant to social epidemiology including factors such as socioeconomic status, discrimination, working conditions, historical and current policies, neighborhood characteristics, and other elements that influence population health through a social perspective.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 5750 - Epidemiological Research for Public Health (3 Credits)

Principles, concepts and methods for conducting ethical, valid and scientifically correct observational studies in epidemiological research. Lectures and practical experience reinforce hypothesis formulation, study design, data collection and management, analysis and publication strategies. PBHC 5600, PBHC 5700 and PBHC 5340 or equivalent.

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Spring.

PBHC 6200 - Developing a Practice of Public Health Leadership (1 Credit)

This course will facilitate the study of leadership theory and practice through a lens of social justice. This course will explore historical and contemporary movements and the leadership involved in creating policies, systems, and programs in public health. Students will gain skills in understanding and communicating methods of leadership in public health and will develop a vision for their own leadership practice.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 6300 - Field Methods of Disease Investigation (3 Credits)

The application of epidemiologic tools to collect, analyze, and interpret data and test results important for disease surveillance and investigation. Requisite: Once course in epidemiology.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

PBHC 6420 - One Health in Communities (3 Credits)

One Health is a transdisciplinary concept that focuses on issues at the intersection of human, environmental, and animal health. The One Healthy City Project will bring together interdisciplinary graduate and professional students with the goal of applying One Health knowledge to enhance our local community. Faculty advisors and liaisons from the City of Fort Collins will present a series of seminars that provide the context for aspects of city planning, nature in the city, and incorporation of One Health concepts suggestions that will support the development of Fort Collins as a city.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 6440 - Physical Activity and Public Health (3 Credits)

This course explores the history of physical activity in public health, basic exercise physiology and kinesiology principles, as well as how to effectively promote and measure physical activity in a variety of populations. Physical activity in various settings will be discussed as well as program planning, implementation and evaluation.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

PBHC 6450 - Team Science (3 Credits)

This course will contextualize Team Science within contemporary social, economic, and political contexts. It will explore challenges and opportunities for inter-and transdisciplinary research and cross-sectoral initiatives. It will also introduce students to tools and frameworks for collaborative science and provide opportunities for students to apply and practice knowledge gained in the course.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 6500 - Health Promotion Program (3 Credits)

Development of skills in health promotion program design, implementation and evaluation.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 6600 - Quantitative Methods in Public Health II (3 Credits)

A continuation of PBHC 5600 extending the basic principles of descriptive and inferential statistics to modeling more complex relationships using linear regression, logistic regression, and Cox regression. The statistical package SAS is used extensively. Pre-requisite: PBHC 5600

Grading Basis: Letter Grade

Additional Information: Colorado State University.

Typically Offered: Spring.

PBHC 6650 - Qualitative and Mixed Methods Evaluation (3 Credits)

This course provides an overview of evaluation techniques, focusing on qualitative and mixed-methods research. It covers research designs, data collection, and program evaluation to measure the impact of public health initiatives.

Grading Basis: Letter Grade

Typically Offered: Spring.

PBHC 6860 - CSU Public Health Practicum (2 Credits)

All MPH students are required to successfully complete a practicum in which the student demonstrates competencies and integrates knowledge. It is intended to enrich the student's experience by providing opportunity to apply theory and skills in a public health setting.

Prerequisite: PBHC 5160 or equivalent and successful completion of 3 additional core courses. Restriction: Student must be in good academic standing to enroll. Only open to MPH students. Department Consent Required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6920 - Public Health Seminar - APE (1-6 Credits)

Seminar on current public health issues; topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6921 - Public Health Seminar - EPI (1-6 Credits)

Seminar on current public health issues. Topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6922 - Public Health Seminar - GHHD (1-6 Credits)

Seminar on current public health issues. Topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6923 - Public Health Seminar - HCOM (1-6 Credits)

Seminar on current public health issues. Topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6924 - Public Health Seminar - PAHL (1-6 Credits)

Seminar on current public health issues. Topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6925 - Public Health Seminar - PHN (1-6 Credits)

Seminar on current public health issues. Topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6926 - Public Health Seminar - Public Health (1-6 Credits)

Seminar on current public health issues. Topics will vary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6950 - CSU Public Health Independent Study (1-3 Credits)

Faculty directed independent study in topics related to public health.

Instructor Permission Required.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6960 - Public Health Group Study (1-18 Credits)

Public Health Group Study at CSU - topics vary

Grading Basis: Letter Grade

Repeatable. Max Credits: 18.

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

PBHC 6980 - MPH Capstone - CSU (2 Credits)

Capstone project for CSU Master of Public Health students. Department consent required.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Radiation Oncology (RAON)

RAON 8005 - Radiation Oncology (8 Credits)

4 wks. Max: 2. The student will learn the basic tools and techniques of radiation oncology, evaluate patients before and after treatment, learn specialized exam techniques, participate in consultations and multi-modality cancer treatment planning. Students will attend and participate in multidisciplinary tumor conferences.

Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

RAON 8100 - RAON Elective Away (8 Credits)

This Radiation Oncology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks. Prereq: RAON 8005. Departmental approval must be obtained one month in advance.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 8.
Typically Offered: Fall, Spring, Summer.

RAON 8600 - Research RAD Oncology (8 Credits)

4 wks. This elective is designed to acquaint the student with current research developments, knowledge and techniques in radiation oncology. Prereq: RAON 8005. Departmental and Associate Dean of Student Affairs approval must be obtained and all arrangements made one semester in advance.

Grading Basis: Medical School HP
Repeatable. Max Credits: 24.

RAON 8630 - RAON Research Away (8-12 Credits)

This Radiation Oncology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 or 6 weeks.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 16.
Typically Offered: Fall, Spring, Summer.

Radiology (RADI)

RADI 5005 - Clinical Ultrasound (1 Credit)

Ultrasound is being used by clinicians in many different settings for many different applications. This elective will introduce students to many of the primary applications for clinician-performed ultrasound. All of the meetings times will be devoted to hands-on ultrasound scanning. The scanning sessions will be in a small group setting with no more than six students per ultrasound machine. Students will be provided with pre-scanning session didactic materials to review.

Grading Basis: Pass Fail with IP
Typically Offered: Fall, Spring.

RADI 8000 - Diagnostic Radiology (4-8 Credits)

An introduction to the interpretation of images and the role of diagnostic imaging in patient care. Clinical observation, lectures, and independent study at UH/AOP. Only 2 days of absence permitted for any reason.

Restrictions: Course not available sections 29 & 33. 4 wks. Max: 4.

Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

RADI 8001 - Radiology for Non-Radiologists (2 Credits)

Two-week course providing specialty focused radiology education, designed to help students be prepared for both internship year and their future career. Students will spend time with specific sub-specialty trained radiologists, based on interest, while reviewing foundational radiology course work.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

RADI 8002 - Nuclear Medicine (4-8 Credits)

Max: 2. Nuclear Medicine encompasses the various uses of radioactive compounds in medical diagnosis and therapy. Students participate in the supervision and interpretation of nuclear medicine procedures under the guidance of the staff/residents at the AOP. Students will attend daily conferences.

Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

RADI 8003 - Pediatric Radiology (4-8 Credits)

Students will gain an understanding of the basics of pediatric imaging and correlation with anatomy and pathology. Students will learn basic approach to performance and interpretation of all imaging modalities including: x-ray, ultrasound, fluoroscopy, CT, MRI, nuclear medicine.

Grading Basis: Medical School HP
Typically Offered: Fall, Spring, Summer.

RADI 8005 - Imaging Elective Fort Collins Branch (8 Credits)

This course is designed to build on your previously acquired basic Radiology knowledge and begin to explore more advanced Radiology topics as it is related to the field of Radiology as well as other specialties. Students will gain experience through a combination of on-site observation, self-directed independent learning, interactive ultrasound, and attendance of multi-disciplinary conferences and lectures. At the end of the rotation, you will have the opportunity to present an interesting case or imaging topic of your choosing to members of the education team and your peers.

Grading Basis: Pass Fail with IP
Typically Offered: Spring.

RADI 8007 - Interventional Radiology (4-8 Credits)

2-4 wks. Max: 3. Interventional Radiology is the treatment of disease conditions using minimally invasive means. These procedures are performed with X-rays, US, and CT guidance. The student will round with the team, participate in procedures, and attend daily conferences.

Standard student evaluation used.
Grading Basis: Medical School HP
Repeatable. Max Credits: 8.
Typically Offered: Fall, Spring, Summer.

RADI 8100 - RADI Elective Away (4-8 Credits)

This Radiology elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. For rotation approval, students must first provide name, address, and phone number of preceptor to the course director. Students maintain sole responsibility for obtaining written evaluation. Offered 2 or 4 weeks.

Grading Basis: Pass Fail with IP
Repeatable. Max Credits: 8.
Typically Offered: Fall, Spring, Summer.

RADI 8600 - Research in Radiology (4-24 Credits)

Student must submit a research project description and the name of their preceptor to the course director prior to the start of the elective. Student is responsible for obtaining written evaluation 2 week rotation not Honors eligible.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

RADI 8630 - RADI Research Away (4-24 Credits)

This Radiology research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 8 or 12 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

Rehabilitation Sciences (RHSC)

RHSC 7000 - Foundations in Rehabilitation Science (2 Credits)

This course provides an overview of the field of Rehabilitation Science and an introduction to disablement frameworks with an emphasis on biopsychosocial models of the enabling-disabling process across the life span. Restrictions: Instructor permission required for students not enrolled in the RHSC Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7001 - Rehabilitation Science Seminar (1 Credit)

Students will attend contemporary research seminars presented by established scientists, and will participate in group discussions to assess the implications of seminar topics on the full spectrum of disablement constructs in Rehabilitation Science ranging from pathophysiology to community participation. Prerequisites: RHSC 7000 Foundations in Rehabilitation Science or Instructor Permission. Restrictions: Instructor permission required for students not enrolled in RHSC Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7002 - Professional Skills in Academia (2 Credits)

This course provides an overview of instructional methods and professional skills for academic educators and scientists. Topics include instructional methods for graduate education, and development of professional skills in communication, management, networking, and promotion for academic careers in Rehabilitation Science. Restrictions: Instructor permission required for students not enrolled in RHSC Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

RHSC 7500 - Neurophysiology of Pain (2 Credits)

This course will review neurophysiologic mechanisms involved in normal and pathologic processing of nociceptive stimuli, and their effects on human movement. Contemporary, evidence-based methods of pain assessment and management will be discussed for research and clinical applications. Prerequisites: Non-degree students must have instructor permission. Prerequisite: NRSC 5100 or NRSC 7600.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7910 - Research Practicum in Rehabilitation Science I (3 Credits)

This research practicum exposes students to a variety of experimental tools and techniques available to Rehabilitation scientists. Mentored practicum experiences are selected by each student with permission from faculty mentor(s). Prerequisites: Instructor permission. Restrictions: Instructor permission required for students non enrolled in RHSC Program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 7911 - Research Practicum in Rehabilitation Science II (3 Credits)

This research practicum exposes students to a variety of experimental tools and techniques available to Rehabilitation scientists. Mentored practicum experiences are selected by each student with permission from faculty mentor(s). Prerequisites: Instructor permission. Restrictions: Instructor permission required for students not enrolled in RHSC program.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

RHSC 8900 - Independent Study in Rehabilitation Science (1-3 Credits)

This course is designed for the advanced student to pursue one or more Rehabilitation Science topics in considerable depth. Faculty supervision is required. Prerequisites: Instructor permission. Restrictions: Instructor permission required for students not enrolled in RHSC Program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

RHSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Rehabilitation Science. Prerequisites: Instructor permission. Restrictions: Enrollment in RHSC Program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Removable Prosthodontics (DSRP)

DSRP 6031 - Clinical Removable Prosthodontics 1 (0.1-5 Credits)

Clinical rotation in removable prosthodontics.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSRP 6600 - Combined Removable Prosthodontics (0.1-5 Credits)

Acquaints the student with principles of removable partial and complete prosthodontics. Includes principles of partial denture design and fabrication as they relate to preventive dentistry and diagnosis/treatment of edentulous patients j Problems of treating geriatric patients are discussed.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRP 6601 - Combined Removable Prosthodontics Laboratory (0.1-5 Credits)

Laboratory exercises following lectures of principles of partial and complete removable prosthodontics. Students instructed in impressions, mounting casts, arrangement of artificial teeth, final waxing and familiarized with necessary steps in completing mandibular removable partial denture.

Grading Basis: Satisfactory/Unsatisfactory w/IP
Typically Offered: Fall.

DSRP 7011 - Clinical Removable Prosthodontics 2 (0.1-5 Credits)

Clinical rotation in removable prosthodontics.
Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRP 7022 - Clinical Removable Prosthodontics 3 (0.1-5 Credits)

Clinical rotation in removable prosthodontics.
Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSRP 7033 - Clinical Removable Prosthodontics 4 (0.1-5 Credits)

Clinical rotation in removable prosthodontics.
Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSRP 8011 - Clinical Removable Prosthodontics 5 (0.1-5 Credits)

Clinical rotation in removable prosthodontics.
Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRP 8022 - Clinical Removable Prosthodontics 6 (0.1-5 Credits)

Clinical rotation in removable prosthodontics.
Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRP 8812 - Implant Dentistry (1 Credit)

Grading Basis: Letter Grade

DSRP 8857 - Cln Removable Prosth II (0.1-4.5 Credits)

Grading Basis: Letter Grade

Reproductive Sciences (RPSC)

RPSC 7802 - Reproductive Development (1 Credit)

Focus of course is developmental biology of reproductive systems. Sex determination, fertilization, implantation, development of placenta and mammary glands will be covered in lectures and discussions of current literature. Course is designed to follow Endocrinology and Metabolism in Spring semester. Prereq: Core Courses IDPT 7811, 7812, 7813, 7814, 7815.

Grading Basis: Letter Grade

Typically Offered: Spring.

RPSC 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Reproductive Science. Prereq: Consent of instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Restorative Dentistry (DSRE)

DSRE 5001 - Introduction to Dentistry (0.1-5 Credits)

To introduce the beginning dental students to the program with an overview of dental concepts and procedures.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRE 5500 - Dental Anatomy (0.1-5 Credits)

Anatomical characteristics of the primary and permanent teeth in the human dentition, intra-arch relationships are considered in detail.

Grading Basis: Letter Grade

Typically Offered: Fall.

DSRE 5501 - Dental Anatomy Laboratory (0.1-5 Credits)

Waxing full crowns of each tooth type to correct anatomical form, emphasizing intra-arch relationships.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 5503 - Dental Materials 2 (0.1-5 Credits)

Course introduces materials used in the practice of dentistry. Their chemistry, physical properties, and biological interaction are discussed as well as their advantages, disadvantages, and methods of clinical use.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Summer.

DSRE 5504 - Dental Materials Science I (0.1-5 Credits)

Basic information about materials science includes physical, chemical, mechanical, and biological properties. This information provides the background for the study of specific materials used in dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 5508 - Indirect Single Tooth Restoration 1 (0.1-5 Credits)

This course in restorative dentistry teaches the treatment of lesions and defects of single teeth using indirect restorative principles and techniques. Cast gold is the restorative material taught in this course.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSRE 5520 - Introduction to Clinical Dentistry 1 (0.1-5 Credits)

Provide students with the foundational knowledge to learn/work in the school's clinical environment. Students will develop and demonstrate a competent understanding of HIPAA and the school's Infection Control rules/policies. Students will also develop an understanding of the role quality and safety in patient care and the use of x-ray.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRE 5521 - Introduction to Clinical Dentistry 2 (0.1-5 Credits)

This course will continue to prepare students for clinic. Topics covered provide a foundation for the practice of dentistry including Oral Health Literacy, Resiliency, Ergonomics and Training in 4-handed Dentistry including a Clinical Assist Session.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSRE 5522 - Introduction to Clinical Dentistry 3 (0.1-5 Credits)

This course will continue to prepare students for the clinic. Topics covered include a review and testing of head/neck and intraoral anatomy knowledge, clinical application of this knowledge, an all-day 8 hour Kaplan NBDE Part I practice exam, 4 handed dentistry, clinical assist session and introduction to clinic.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSRE 6600 - Transition Clinic 1 (0.1-5 Credits)

This course will provide second year dental students with methods and techniques for diagnosis, treatment planning, and record keeping for general dental practice and will also serve as a platform to train students in the correct use of the Axiom software.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRE 6601 - Transition Clinic 2 (0.1-5 Credits)

Provide techniques for diagnosis, treatment planning and record keeping for general dental practice. Axiom software training. Perform simple oral diagnosis appointments, periodic oral evaluations and basic operative procedures. Students will be paired together rotating between assistant and operator.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSRE 6602 - Transition Clinic 3 (0.1-5 Credits)

This is a follow on to T-Clinic 2. Students will be instructed how to complete very large amalgam and composite restorations, how to remove existing composite from natural teeth and other frequently encountered restorative issues that are seen in clinic. This will be a companion class to, but different from, previous operative courses.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSRE 6604 - Esthetic Dentistry (0.1-5 Credits)

This course is designed to present information to students about those clinical dentistry procedures or concepts which are performed primarily to enhance dental esthetics.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSRE 6606 - Indirect Single Tooth Restoration 2 (0.1-5 Credits)

Course teaches fundamental concepts, preparation, provisionalization, and restoration of single teeth with full gold crowns. Fundamental concepts, preparation and restoration of single teeth with cast gold onlays. Two onlay designs, a maxillary onlay design and a mandibular onlay design taught.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 6607 - Indirect Single Tooth Restoration 2 Laboratory (0.1-5 Credits)

Course provides practical simulated clinical experience in preparation, provisionalization, and restoration of single teeth with full gold crowns. Two onlay designs, a maxillary onlay design, and a mandibular onlay design are practiced.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 6609 - Treatment Planning (0.1-5 Credits)

Course will bridge the concepts learned in oral diagnosis, periodontics, restorative dentistry, radiology and transition clinic to help the students assimilate clinical information into clinically acceptable treatment plans that best meet patient needs. Department Consent Required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSRE 6610 - Clinical Dental Materials (0.1-5 Credits)

This course integrates knowledge of dental materials with clinical dental practice.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Spring.

DSRE 6615 - Comprehensive Patient Care Clinic A (0.1-5 Credits)

An introductory clinic for dental students. Students will provide comprehensive dental care, refining technical skills, and learning patient management skills in a large group practice setting.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSRE 6617 - Occlusion Lecture (0.5-10 Credits)

The educational goal of this course is to teach the theory and indications for treating mandibular instability with devices and equilibration. The etiology, diagnosis and Treatment of occlusal trauma and mandibular dysfunction are introduced.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRE 6618 - Occlusion Lab (0.5-10 Credits)

The laboratory portion of Occlusion Lecture, this course includes fabrication of various types of occlusal devices, equilibration exercise, and the proper mounting of study casts.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRE 6645 - Cariology (0.1-5 Credits)

The course explores the etiology and microbiology of caries, patterns of disease progression, and approaches to prevention and treatment. Didactic instruction and clinical exercises will be offered in identifying caries and methods of detection.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 5.

Typically Offered: Fall.

DSRE 7706 - Critical Appraisal of Translational Literature (0.1-5 Credits)

The purpose of this course is to develop proficiency in critical thinking and problem solving as it pertains to scientific inquiry and research methodology in translational research. Department consent required

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSRE 7711 - Advanced and Digital Prosthodontics (0.1-5 Credits)

This course will address various Advanced Prosthodontic topics; beginning with CAD/CAM dentistry and digital workflow, then removable partial denture designs, occlusal concepts, diagnosis and treatment planning, esthetics, and cementation for fixed prosthodontics restorations. Department consent required.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRE 7712 - Implant Dentistry (0.1-5 Credits)

Concepts and applications of tissue integrated prostheses are presented and discussed. Topics include prosthetic techniques, diagnosis and treatment planning, analysis of current systems, qualifications and consent and clinical applications.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 7714 - Comp Pt Care Clinic B (0.6 Credits)

Grading Basis: Letter Grade

DSRE 7717 - Comprehensive Patient Care Clinic B (0.1-5 Credits)

Continuation of Comprehensive Patient Care Clinic A with additional emphasis on the treatment of pediatric, orthodontic, geriatric, and endodontics cases.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 7718 - Critical Thinking and Patient Care Seminar (0.1-5 Credits)

This course will provide the student with a practical application of the practice of evidence-based dentistry, critical thinking, formulation of clinical questions, critical appraisal of the literature and the translation of the biologic and social sciences to clinical patient care. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRE 7719 - Comprehensive Patient Care Clinic C (0.1-5 Credits)

Comprehensive patient care activities with a focus on independence, student preparedness, technical skills, patient management and professionalism.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRE 7721 - Comprehensive Patient Care Clinic D (0.1-5 Credits)

Continuation of Comprehensive Patient Care C with emphasis on effective practice management.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSRE 7935 - Treatment Planning and Case Presentation I (0.1-5 Credits)

Treatment planning concepts and presentation formats, focused on multidisciplinary approach, key tooth analysis, phased treatment plans and case presentation format and technique. Department consent required.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 7936 - Treatment Planning and Case Presentation 2 (0.1-5 Credits)

Treatment planning concepts and presentation formats, focused on multidisciplinary approach, key tooth analysis, phased treatment plans and case presentation format and technique. Requisite: Department consent required.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRE 8806 - Critical Appraisal of Translational Literature II (0.1-5 Credits)

The purpose of this course is to develop proficiency in critical thinking and problem solving as it pertains to scientific inquiry and research methodology in translational research. It provides a continued foundation for discussion of clinical events occurring in the student's clinical practice w/ emphasis on evidence-based dentistry. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRE 8817 - Comprehensive Patient Care Clinic E (0.1-5 Credits)

Advanced comprehensive patient care including applied principles of practice management.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSRE 8827 - Comprehensive Patient Care Clinic F (0.1-13 Credits)

Continuation of advanced comprehensive patient care activities for DS 4 dental students not registered for Integrated Care Clinic Dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSRE 8837 - Comprehensive Patient Care Clinic G (0.1-15 Credits)

Continuation of advanced comprehensive patient care activities for DS 4 dental students not registered for Integrated Care Clinical Dentistry.

Grading Basis: Letter Grade with IP

Typically Offered: Summer.

DSRE 8945 - Treatment Planning and Case Presentation (0.1-5 Credits)

Treatment planning concepts and presentation formats, focused on multidisciplinary approach, key tooth analysis, phased treatment plans and case presentation format and technique. Department Consent Required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSRE 8946 - Treatment Planning and Case Presentation 4 (0.1-5 Credits)

Treatment planning concepts and presentation formats, focused on multidisciplinary approach, key tooth analysis, phased treatment plans and case presentation format and technique. Department Consent Required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

Social Research Met-UNC (SRMS)

SRMS 6000 - Introduction to Graduate Research (3 Credits)

Principles of research, design and analysis. Read and critique published research. Required of all first year graduate students except in those departments with substitutes. Taught every semester.

Grading Basis: Letter Grade

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall, Spring, Summer.

SRMS 6650 - Data Analysis for Decision-Making (3 Credits)

This course focuses on the data-based decision-making process including identification of problems that can be addressed with data; articulating appropriate project goals/objectives; selection, collection, and management of data; data analysis and visualization; report writing and presentation of findings to relevant stakeholders. CHBH 6120, BIOS 6601 or PBHC 5600

Grading Basis: Letter Grade

Additional Information: Univ of Northern Colorado.

Typically Offered: Fall.

Social Work-CSU (SOWK)

SOWK 5300 - Anti-Oppressive Social Work Practice (3 Credits)

Developing anti-oppressive practice with a focus on multiculturalism and social justice advocacy. Critically evaluate personal traits, attitudes and values regarding diversity and identity formation while exploring theoretical frameworks for understanding oppression. Analyze the relationships among power, privilege and oppression.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Sociology-CSU (SOCO)

SOCO 5620 - Sociology of Food Systems and Agriculture (3 Credits)

This course is designed to explore how agricultural choices generate intended and unintended consequences for human communities and the natural environment.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring.

SOCO 6620 - Sociological Policy Analysis (3 Credits)

The main objective of this course is to develop an understanding of (1) the processes by which societies come to perceive of particular issues as social problems and formulate policies in response to these perceptions; and (2) the factors that affect these processes. Prerequisite: One course in sociology

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

SOCO 6950 - Independent Study - Sociology (1-6 Credits)

Independent study in sociology.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall, Spring, Summer.

Speech Communication-CSU (SPCM)

SPCM 5380 - Relating and Organizing for Health (3 Credits)

Organizational, interpersonal, and intercultural dimensions of communicating in public health clinical settings.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Spring.

SPCM 6320 - Theory of Interpersonal Communication (3 Credits)

Theories of communication in development, maintenance and deterioration of friendship, couple, family, group and business relationships.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

SPCM 6390 - Communication Theory (3 Credits)

Examination of communication philosophies and perspectives; analysis of modern theories of face-to-face communication.

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

Statistics-CSU (STAS)

STAS 5110 - Design and Data Analysis for Researchers (4 Credits)

Statistical methods for experimenters and researchers emphasizing design and analysis of experiments using R software. Requisite: Statistics Course

Grading Basis: Letter Grade

A-PUBH1 Graduate students and public health certificate students only.

Additional Information: Colorado State University.

Typically Offered: Fall.

Structural Biology & Biochemistry (STBB)

STBB 7608 - Molecular Interactions (3 Credits)

Provides chemical/physical basis for protein structure, folding, function & stability; presents methods/principles of protein/peptide purification & enzyme catalysis including electron transfer & mutagenesis. The role of molecular dynamics & use of molecular simulations in the investigations of protein-ligand/protein-protein interactions. Cross-listed with PHSC 7608.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7609 - Biophysics & Spectroscopy (1.5 Credits)

This course aims to provide the students with a deep understanding of the application of different biophysical techniques to study interactions of biomolecules with each other or with small molecules. The course will supply the students with the needed tools to be able to design their own biophysical experiments to tackle a particular question.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7610 - Biophysics and Spectroscopy Lab (1 Credit)

This course aims to provide the students hands-on training in the use of a variety of biophysical techniques for the quantification of biomolecular interactions. Must be taken with STBB 7609. Corequisite: STBB 7609

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7620 - Advanced Genome Analysis (2 Credits)

Introduction to genomics emphasizing gaining familiarity with: analysis, utilization of genomic data. Topics: sequencing, mapping genomes, transcriptomics, human genome, evolution, genomic disorders, bioinformatics, statistics, population variation, epigenomics, proteomics, metagenomics, Crosslisted Course: HMGP 7620, CPBS 7620, and MICB 7620 microbiome analysis, functional genomics, ethics.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7621 - Genome Analysis Workshop (3 Credits)

A tutorial of skills needed to process genomics data sets and visualize their results. Taught experimentalists with practical goals (e.g. to interpret the results of an experiment and gain biologically meaningful insight). Course is designed to closely mirror HMGP 7620. Restrictions: Students cannot have previously taken MOLB 7620. Cross listed with MOLB 7621.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

STBB 7631 - Molecular Structure A (1.5 Credits)

Gain an in-depth understanding of the underlying principles of an NMR experiment, so that student can turn NMR theory into NMR practice for their research.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7632 - Molecular Structure B (1.5 Credits)

Understand the theory and practice of structural determination using x-ray crystallography.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7633 - Molecular Structure C (1.5 Credits)

The purpose of this course is to provide students with a concise understanding of biological mass spectrometry and its application to study and characterize various classes of biomolecules in state of the art research. Course is 7.5 weeks.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 7634 - Molecular Structure D (1.5 Credits)

The course will provide an introduction to conceptual and practical aspects of macromolecular cryo-electron microscopy (cryo-EM). A combination of lectures and hands-on experiences will give students a working understanding of cryo-EM and its application for structural analysis of biological macromolecules.

Grading Basis: Letter Grade

Typically Offered: Fall.

STBB 7650 - Research in Structural Biology & Biochemistry (1-10 Credits)

Research work in Structural Biology and Biochemistry. 2 laboratory hours per week per credit.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

STBB 7660 - Structure Seminar (1 Credit)

Seminar series provides a forum for the presentation of scientific experiments and information in structural biology by faculty, postdoctoral fellows and graduate students.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

STBB 7670 - Independent Study in Structural Biology and Biochem (1-3 Credits)

This course is listed for the benefit of the advanced student who desires to pursue one or more topics in Structural Biology and Biochemistry in considerable depth. Supervision by a full-time faculty member is necessary.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

STBB 7807 - Structural Biol & Biophysics Core Course II (2 Credits)

Provide first year students enrolled in the core course the opportunity to obtain or review background material in the fields of structural biology and biophysics.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

STBB 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in Structural Biology and Biochemistry.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Surgery (SURG)

SURG 5005 - Introduction to Surgery (1 Credit)

Intro to general surgery & a variety of surgical specialties with an emphasis on foundational skills & knowledge development.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring.

SURG 5094 - Department of Surgery Summer Research Program (12 Credits)

Department of Surgery Mentored Summer Research Program. You will be paired with a faculty mentor for a specific scholarly research project, guided through the completion of the project, and culminate in a research symposium.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

SURG 5660 - Career Elective In UROL (1 Credit)

Students will be exposed to the diverse spectrum of urologic practice through shadowing residents and attending's in clinic and observation in the OR. Students will spent 12.5 hours of observation in Urology with a faculty member split between the clinic and operating room. Students may be assigned to faculty at the University of Colorado Hospital or Denver Health. Students will be responsible for scheduling their observations times with the attending physician. Requirement: Must contact Course Director or Coordinator within the first two weeks of the course to arrange schedule after adding this elective.

Grading Basis: Pass Fail with IP

Typically Offered: Summer.

SURG 8000 - Gen Surg Univ AI (8-24 Credits)

4-12 wks. Max:4. This course can meet Sub-I qualifications. Students perform intern responsibilities on General Surgical Service at University of Colorado Hospital. Students alternate night call, write orders on assigned patients and participate in preoperative, operative and postoperative care of inpatients.

Grading Basis: Medical School HP

Repeatable. Max Credits: 24.

SURG 8001 - Gen Surg DHMC AI (8-12 Credits)

4 or 6 wks. Max:3. This course can meet Sub-I qualifications. Join an Acute Care Surgery Team at a Level 1 Trauma Center. Course emphasizes pre-operative evaluation, operating room decisions and postoperative care outside the ICU. Student will attend clinics, rounds, conferences and surgical procedures.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

Typically Offered: Fall, Spring, Summer.

SURG 8002 - Gen Surg St Joseph's AI (8 Credits)

Held at Exempla St. Joseph Hospital with emergency & elective surgery. Emphasize pre- and postoperative care. Graduated operating room experience and exposure to skills lab. Active participation in surgery clinic. Housestaff team assignments with assigned faculty mentors. Active daily conferences, including Grand Rounds and M&M.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8004 - Multidisciplinary Breast Care (4-8 Credits)

Participating students will rotate with specialists in breast imaging, breast surgery, medical and radiation oncology, plastic surgery, and pathology to gain a 360-degree perspective on the evaluation and management of breast cancer. Students will attend the multidisciplinary breast cancer conferences to develop an understanding of how specialists work as a team to develop the optimal treatment plan.

Grading Basis: Pass Fail with IP

Typically Offered: Fall, Spring, Summer.

SURG 8008 - Advanced Cardiothoracic Surg (8 Credits)

4 wks. Max:2. This course can meet Sub-I qualifications. Adult cardiac and general thoracic surgery and critical care monitoring on the Cardiothoracic Service at UH and Denver VAMC. Students will participate in preoperative, operative and postoperative care.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8010 - Burn Critical Care/Surg (4-8 Credits)

4 or 6 wks. Max:1. This course can meet Sub-I qualifications. Acting sun-intern on Burn Service, working with Burn and related Surgical Critical Care cases. A high level of patient care responsibility, including bedside procedures, burn care and line charges. Work with attending faculty, and gain a multidisciplinary approach to burns.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

SURG 8011 - Hand Surgery (8 Credits)

Max:1. The students will participate in all aspects of the hand service including the emergency room, outpatient clinics, inpatient/outpatient operative and non-operative treatment. Emphasis is on acute hand and upper extremity diseases, trauma, their treatment and rehabilitation.

Grading Basis: Medical School HP

SURG 8012 - Urology Acting Internship (8-16 Credits)

4 wks. Max:4. This course can meet Sub-I qualifications. All students are required to rotate at hospitals, participate and perform physical exams, follow-up, clinic and surgeries. All Urology Conferences are mandatory. The Chief Resident, under supervision of the Attending, guides educational experiences.

Grading Basis: Medical School HP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

SURG 8015 - Pediatric Surgery (4-12 Credits)

2,4, or 6 wks. Max:1. Student will assume major clinical responsibility for pediatric surgical patients, will work with housestaff, share patient care and work-ups, act as liaison to families, attend operations and teaching conferences, and actively participate in the surgical management of infants and children.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

SURG 8019 - Plastic Surgery (8 Credits)

Max:1. Students learn basic principles of wound healing, care, and management; management and reconstruction of maxillofacial trauma; head and neck cancer; congenital anomalies; tissue transplantation; cosmetic surgery; and plastic/reconstructive management of post-burn and post-surgical patients. Prereq: IDPT 7050.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8021 - Surgical Critical Care AI (8-12 Credits)

4 wks. Max:2. Assigned to surgical ICU, work with critical care residents, fellow and staff. Students gain experience in resuscitation, hemodynamic monitoring, mechanical ventilation, nutritional support, bedside ultrasound and all aspects in care of critically ill surgical patients.

Grading Basis: Medical School HP

Repeatable. Max Credits: 12.

SURG 8030 - Transplant Surgery (8 Credits)

2-4 wks. Max:3. Medical student will round with transplant team, which includes: Surgeons, Nephrologists, and Hepatologists. They will be exposed to all aspects of transplant care including preoperative work up, donor surgery, transplant surgery, post-operative care.

Grading Basis: Medical School HP

Repeatable. Max Credits: 8.

Typically Offered: Fall, Spring, Summer.

SURG 8032 - Vascular Surgery AI (8 Credits)

Students perform intern level responsibilities on the Vascular Surgery Service at UCH and Outpatient Based Lab. Students participate in pre, operative, and post-operative care for patients by scrubbing in on aortic reconstructions, carotid endarterectomies, lower extremity bypass, amputations, dialysis access, and peripheral endovascular cases.

Grading Basis: Medical School HP

Typically Offered: Fall, Spring, Summer.

SURG 8100 - Surg Elective Away (4-8 Credits)

This Surgery elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 4 weeks.

Grading Basis: Pass Fail with IP

Repeatable. Max Credits: 16.

Typically Offered: Fall, Spring, Summer.

SURG 8600 - Research in Surgery (4-24 Credits)

2-12 wks. Contact department for further course information. Prereq: The student must receive prior approval from the Associate Dean for Student Affairs and course director to add course.

Grading Basis: Pass/Fail with IP

Repeatable. Max Credits: 24.

SURG 8630 - SURG Research Away (4-24 Credits)

This Surgery research elective will be held at a site in Colorado, another state, or internationally. Students must obtain departmental approval one month prior to the start. Additionally, international sites must be preapproved by Student Affairs. Offered 2, 4, 8 or 12 weeks.

Grading Basis: Pass/Fail with IP

Repeatable. Max Credits: 24.

Typically Offered: Fall, Spring, Summer.

Surgical Dentistry (DSSD)

DSSD 5101 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 5102 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 5103 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSSD 5501 - Clinical Correlations (0.1-5 Credits)

This course provides an overview of the major pathologies associated with each human body system, and possible oral manifestations and dental treatment considerations associated with these pathologies.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSSD 5502 - Lifelong Learning in Dentistry (0.1-5 Credits)

This course focuses on decision making in dentistry, the concepts section of the course will be presented and discussed segmentally through presentation of a research report on current hot topics. Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 5503 - Introduction to the Electronic Health Record (0.1-5 Credits)

This course will enable students to demonstrate a basic proficiency of the use of the electronic health record (axiUm). Department consent required.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 5505 - Introduction to Clinical Dentistry 2 (0.1-5 Credits)

This course will continue to prepare students for clinic. Topics covered provide a foundation for the practice of dentistry including Oral Health Literacy, Resiliency, Ergonomics and Training in 4-handed Dentistry including a Clinical Assist Session.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 6101 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 6102 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 6103 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSSD 6600 - Clinical Dental Pharmacology (0.1-5 Credits)

Integration of basic drug mechanisms with fundamentals of clinical pharmacology and patient care.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 6604 - Pain Control 1 (Local Anesthesia) (0.1-5 Credits)

The anatomy of the nerve supply to the teeth and associated structures is covered. The techniques for administration of local anesthesia to the maxilla and mandible are demonstrated by the faculty and performed by the student.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSSD 6608 - Prevention and Management of Medical Emergencies (0.1-5 Credits)

The prevention, diagnosis, and management of medical emergencies are presented.

Grading Basis: Letter Grade with IP

Typically Offered: Spring.

DSSD 6610 - Pain Control 2 (Nitrous Oxide Analgesia) (0.1-5 Credits)

Pharmacological indications and contraindications and prevention and treatment of complications relating to use of nitrous oxide is presented.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSSD 6612 - Orofacial Pain (0.1-5 Credits)

This course is designed to acquaint the student with the evaluation, diagnosis, management, and pathology of the temporomandibular joint. Emphasis is on the multidisciplinary nature of treating disorders of the TMJ.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 7101 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 7102 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 7103 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

DSSD 7712 - Dental Pain and Emergencies (0.1-5 Credits)

This course covers the diagnostic and treatment consideration for the management of the patient in pain and other emergency problems encountered in general dentistry. Independent study assigned by course director.

Grading Basis: Letter Grade with IP

Typically Offered: Fall.

DSSD 8011 - Clinical Emergencies 1 (0.1-5 Credits)

The patient who presents with oral pain is evaluated and relief of discomfort is provided by the student under the supervision of the dental faculty.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 8101 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Fall.

DSSD 8102 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Spring.

DSSD 8103 - Individualized Study in Dentistry (0.1-10 Credits)

Individualized course instruction to meet the needs of student.

Grading Basis: Satisfactory/Unsatisfactory w/IP

Typically Offered: Summer.

Systems Engineering (SYSE)

SYSE 5810 - Humanitarian Engineering (3 Credits)

This course introduces engineering skills in the context of solutions for developing communities, with emphasis placed on a system approach. Methods and implementation used in Humanitarian Engineering, including relevant community development methodologies, appropriate design, development strategy, sustainable community guidelines, emergency response, and design for vulnerable communities.

Grading Basis: Letter Grade

Toxicology (TXCL)

TXCL 7310 - Fundamentals of Pharmaceutical Sciences I (3 Credits)

This core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on macromolecular interactions, pharmacetics, pharmacodynamics, apoptosis, signal transduction and immunology. Critical thinking and problem solving skills will be emphasized via lectures discussion, and computer-based data analyses. Crosslisted: PHSC 7310.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7312 - Fundamentals Doctoral Recitation I (1 Credit)

This is a one-credit course that is designed to complement TXCL 7310 (Fundamentals). While the didactic lectures of Fundamentals are essential for foundational knowledge in Toxicology and the Pharmaceutical Sciences, this course provides an opportunity for and detailed discussion of experimental design and data interpretation. Intended to be taken the same semester as TXCL 7310 but can be taken alone by PHSC-MS students who've been admitted to the TXCL-PhD program.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

TXCL 7315 - Fundamentals of Pharmaceutical Sciences II (3 Credits)

Core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on drug delivery and imaging systems, protein therapeutics, and the drug discovery process. Critical thinking and problem solving skills will be emphasized via lectures, discussions and computer-based data analyses. Crosslisted with TXCL 7315.

Grading Basis: Letter Grade

Repeatable. Max Credits: 3.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7317 - Fundamentals Doctoral Recitation II (1 Credit)

This is a one-credit course designed to complement TXCL 7315. While the didactic lectures of Fundamentals are essential for foundational knowledge in Toxicology and the Pharmaceutical Sciences, this course provides an opportunity for analytical and critical thinking and detailed discussion of experimental design and data interpretation. Intended to be taken the same semester as TXCL 7315 but can be taken alone by PHSC-MS students who've been admitted to the PHSC-PhD program.

Grading Basis: Letter Grade

Repeatable. Max Credits: 1.

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7320 - Physical Pharmacy & Pharmaceutical Sciences (3 Credits)

This course is designed to provide students with a thorough overview of physical chemical principles vital to Pharmaceutical Sciences; a course for someone whose research efforts will involve pharmaceutical development and/or the evaluation of drugs. Cross listed with PHSC 7320.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7321 - Careers in Toxicology (1 Credit)

This course builds upon and expands student knowledge relating to career trajectories within the toxicological sciences. Knowledge and experiences gained from this course will enable the student to make a more informed decision regarding the career choices available to them.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7322 - Molecular and Target Organ Toxicology (3 Credits)

This course is designed to provide a foundation in molecular mechanisms of toxicity. Biochemical mechanisms underlying toxicity will be analyzed and integrated with discussions of reactive metabolites, oxidative stress, signal transduction, cell death and organ specific toxicity. Prereq: Discussion with and consent of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7323 - Environmental and Target Organ Toxicology (3 Credits)

The course is designed to provide a fundamental understanding of environmental-related toxicants (e.g. solvents, pesticides, metals, radiation) with emphases on the molecular mechanisms underlying their organ specific toxicity and on risk assessment. Prereq: Discussion with and consent of instructor.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Spring.

TXCL 7325 - Current Topics in Toxicology Research (1 Credit)

This is a mandatory 2-credit hour course for Toxicology program PhD students and MS in Pharmaceutical Sciences students in the Molecular & Systems Toxicology track. Each student is expected to lead one discussion per year, papers discussed will be authored by the upcoming Toxicology seminar series speaker. Grade given after Spring semester. Requisites: Required attendance at all seminars in the Dept. of Pharmaceutical Sciences (DOPS) Graduate Program Seminar Series.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 15.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

TXCL 7330 - Development of Drugs and Biologics (3 Credits)

A survey course designed to introduce students to pharmacokinetic and pharmacodynamics principals used in drug research and development by faculty of the Skaggs School of Pharmacy, Department of Pharmaceutical Sciences. The Phoenix Winnonlin Computer software, is used to complete homework. Offered in Fall of odd-numbered years. Crosslisted with PHSC 7330.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7353 - Immunology: Immunotoxicology and Immunopharmacology (2 Credits)

This course is designed to introduce students to basic immunology principles used in drug research and development, and provide essential knowledge on the immune response, its diagnosis and its modification by drugs and chemicals.

Grading Basis: Letter Grade

Typically Offered: Fall.

TXCL 7400 - Ethical Issues in Toxicology and Pharmaceutical Sciences (1 Credit)

The purpose of this course is to expose students to ethical issues in the fields of Toxicology and Pharmaceutical Sciences. Emphasis will be placed on research conduct, animal use, and other timely issues relevant to these fields.

Grading Basis: Letter Grade

Repeatable. Max Credits: 2.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7452 - Introduction to Clinical Pharmacology (3 Credits)

The course provides students with a foundational knowledge of clinical pharmacology, including pharmacokinetics, drug metabolism, assessment of drug effects, optimizing patient therapy and drug discovery and development. It is grounded in weekly topical lectures, supplemented by readings, discussion and assignments. Requisite: Permission of Course Director. (crosslisted with PHSC 7452)

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring.

TXCL 7475 - Advanced Topics in Toxicology (1-6 Credits)

Considers special topic of current interest in toxicology. Course may be repeated for credit with instructor's consent. Prereq: Consent of Instructor/Program Director.

Grading Basis: Letter Grade

Repeatable. Max Credits: 13.

Typically Offered: Fall.

TXCL 7564 - Environmental Risk Assessment and Applied Toxicology (2 Credits)

Provides students with experience in risk assessment, environmental toxicology for public health and regulatory decision making. Topics include comprehensive human health risk assessments, baseline/probabilistic statistics, ecological risk assessment activities associated with emergency action, medical monitoring, role toxicology plays in courtroom.

Grading Basis: Letter Grade

Typically Offered: Spring.

TXCL 7565 - Applied Statistics for Pharm Science and Toxicology (2 Credits)

Students will learn several basic statistical techniques for analyzing data including when and how to use them, the appropriate assumptions for these methods, and how to clearly articulate their statistical results in the context of toxicology and pharmaceutical sciences studies. Prerequisite: Pharmaceutical Sciences and Toxicology graduate students

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7650 - Research Rotation in Toxicology (1-5 Credits)

Research work in toxicology.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Typically Offered: Fall, Spring, Summer.

TXCL 7665 - Pharmacokinetic Principles & Applications (3 Credits)

A survey course to introduce students to pharmacokinetic and pharmacodynamics principles used in drug research and development. Taught by faculty from the School of Pharmacy, Department of Pharmaceutical Sciences. Phoenix Winnonlin Computer software will be used in the course. Cross-listed with PHSC 7665

Grading Basis: Letter Grade

Typically Offered: Spring.

TXCL 7750 - Proteomics & Metabolomics for Biomarker Discovery (3 Credits)

An introduction to mass spectrometry followed by a focus on quantitative metabolomics or proteomics workflows. Workflows comprise sample preparation, data acquisition, and data analysis. Additional topics include imaging mass spectrometry, lipidomics, post-translational modification analysis, and clinical applications. Offered odd years.

Grading Basis: Letter Grade

A-GRAD Restricted to graduate students only.

Typically Offered: Fall.

TXCL 7751 - Neurotoxicology (2 Credits)

Neurotoxicology offers a specialization in neuroscience-related toxicology; Topics (basic and applied) include: neuropharmacology (affect of ethanol/drugs), neurophysiology (metabolic poisons), developmental neurotoxicology (pesticides and neurodevelopmental disorders, radiation), and behavioral toxicology (cognitive function).

Grading Basis: Letter Grade

Typically Offered: Spring.

TXCL 8990 - Doctoral Thesis (1-10 Credits)

Doctoral thesis work in toxicology. Prereq: Consent of the instructor.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 10.

A-GRAD Restricted to graduate students only.

Additional Information: Report as Full Time.

Typically Offered: Fall, Spring, Summer.

Translational Research on Alzheimer's Disease (TRAD)

TRAD 6210 - Translational Research - Alzheimer's Disease/Dementias (4 Credits)

The course will facilitate a solid understanding of translational research in Alzheimer's Disease and Alzheimer's Disease Related Dementias, including neuropsychological and neuropathological disease features, genetic risk factors, biomarkers and brain imaging tools, statistical analyses, therapeutic approaches and clinical trial design.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

TRAD 6211 - Research/Development in Alzheimer's Disease/Dementias (1 Credit)

The course will discuss with industrial experts a wide variety of issues in connection with research and developments on Alzheimer's Disease and Alzheimer's Disease Related Dementias in an industrial setting.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

TRAD 6212 - Mini-Rotations AD/ADRD Translational Research (1 Credit)

The course will facilitate short three week mini-rotations in facilities that conduct translational research connected with Alzheimer's Disease or Alzheimer's Disease Related Dementias in academic or industrial settings.

Grading Basis: Letter Grade

Typically Offered: Fall, Spring.

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