Metropolitan State University of Denver
Curriculum, Academic Effectiveness, and Policy Development

2026-2027 Catalog Addendum

Academic Affairs

July 14, 2026
Amended August 25, 2026

2026-2027 Undergraduate Catalog

2026-2027 Graduate Catalog

This catalog addendum contains new and revised academic programs and policies. Information in this addendum is subject to change. For general University information, visit MSU Denver's website, msudenver.edu.

The programs, policies, statements and procedures contained in this publication are subject to change or correction by the University without prior notice. Metropolitan State University of Denver reserves the right to withdraw courses; revise the academic calendar; or change curriculum, graduation procedures, requirements and policies that apply to students at any time. Changes will become effective whenever the proper authorities so determine. This publication is not intended to be a contract between the student and Metropolitan State University of Denver. However, students are bound by the policies, procedures, standards and requirements stated herein, as long as they are in effect.

Administration ... 3
Board of Trustees ... 3
College and School Deans ... 3
Graduate Program Directors ... 3
Faculty ... 4
Catalog Index ... 8
Student Rights and Responsibilities (Undergraduate Catalog) ... 8
Student Complaint Policy ... 8
Student Rights and Responsibilities (Graduate Catalog) ... 8
Student Complaint Policy ... 8
College of Aerospace, Computing, Engineering, and Design ... 8
Department of Aviation and Aerospace Science ... 8
College of Business ... 13
Department of Computer Information Systems and Business Analytics ... 18
Department of Management ... 20
Department of Marketing ... 21
College of Health and Human Sciences ... 36
Department of Criminal Justice and Criminology ... 36
Department of Health Professions ... 42
Department of Human Services and Counseling ... 47
Department of Nutrition ... 54
Department of Speech, Language and Hearing Sciences ... 60
College of Letters, Arts and Sciences ... 64
Department of Art ... 64
Department of Biology ... 66
Department of Chemistry and Biochemistry ... 69
Department of Communication Studies ... 81
Department of Earth and Atmospheric Sciences ... 81
Department of Music ... 84
Department of Philosophy ... 94
Department of Physics ... 94
Department of Sociology and Anthropology ... 95
Department of Theatre and Dance ... 97
Gender Institute for Teaching and Advocacy ... 100
School of Education ... 100
Department of Elementary Education and Literacy ... 100
Department of Secondary, K-12 and Educational Technology ... 106
School of Hospitality ... 108
Rita and Navin Dimond Department of Hotel Management ... 108
Batch Changes ... 109
Course Descriptions (Undergraduate) ... 110
Course Descriptions (Graduate) ... 123

Administration

Board of Trustees

Board of Trustees	Date of First Appointment	Present Term Expires
Russell Noles, M.B.A.	2019	2026
Ryan Frazier, M.S.	2024	2028
Emily Renwick Garnett, J.D. Vice Chair	2020	2027
Jerry Glick, B.S., Chair	2023	2026
Kristin Hultquist, M.P.P., Chair	2019	2027
Rachel Kaygi, B.A.	2024	2027
Olivia Mendoza, M.P.A., J.D.	2023	2027
Marissa Molina, B.A.	2019	2026
Mona Mocanasu, Ph.D., Faculty Trustee	2025	202~~6~~7
Amber Mozet, B.S., Alumni Representative	2024	202~~5~~7
Laura Pinnie, B.S.	2024	2027
~~Maria Garcia~~ Stefy Calero, Student Trustee	202~~5~~6	202~~6~~7
David Fine, Esq.	General Counsel and Secretary to the Board of Trustees	

College and School Deans

College of Aerospace, Computing, Engineering, and Design (Interim)	"Ted" Jinseup Shin, M.F.A.
College of Business	Ethan Waples, Ph.D.
College of Health and Human Sciences (Interim)	Jess Retrum, Ph.D.
College of Letters, Arts and Sciences	John Masserini, DMA
School of Education	Rosemarie Allen, Ed.D.
School of Hospitality	Lynn Minnaert, Ph.D.

Graduate Program Directors

Master of Business Administration	Rey Hernandez-Julian, Ph.D.
Master of Science in Clinical Behavioral Health, Emphasis in Addictions Counseling	Patrick Griswold, M.S., M.Ed.
Master of Education in Curriculum and Instruction	Brittany Lane, Ph.D.
Master of Science in Cybersecurity	~~LiYing Li, Ph.D.~~ Henry Jackson, Ph.D.
Master of Health Administration	Garrett Chism, MBA
Master of Science in Nutrition and Dietetics	Jesse Lunsford, Ph.D.
Master of Professional Accountancy	~~Letitia Pleis, Ph.D.~~ Gregory Clifton, J.D., LL.M.
Master of Social Work	Kristen N. Atkinson, Ph.D.

Master of Speech-Language Pathology	Kathryn Hardin, Ph.D.
Master of Arts in Teaching	Brittany Lane, Ph.D.
Master of Science in Business Intelligence	Abel Moreno, Ph.D.
Master of Science in Event and Experience Management	Kiyan Shafieizadeh, Ph.D.
Master of Science in Hospitality Leadership	~~Kiyan Shafieizadeh, Ph.D.~~ Eric Olson, Ph.D.

Faculty

Akrabova, Maria
~~Associate~~ Professor-Spanish
M.A., Sofia University; Ph.D., University of Kansas

Ambre, Shailesh
~~Assistant~~ Associate Professor-Chemistry and Biochemistry
B.S., Sadar Patel University; M.S., Maharaja Sayajiro University of Baroda; Ph.D., University of Georgia

Anderson, Rashad
Professor-Secondary Education and Director of CMM
B.S., South Carolina State University; MME, Ph.D. University of South Carolina-Columbia

Atkinson, Kristen
~~Assistant~~ Associate Professor-Social Work
MSW, San Francisco State University, Ph.D., University of Illinois, Chicago, Illinois

Bailey, Cassandra
~~Assistant~~ Associate Professor-Psychology
M.A., Sam Houston State University, Ph.D., Sam Houston State University

Baker, Biff
~~Assistant~~ Associate Professor-Marketing
M.B.A., Webster University, DBA, Colorado Technical University, Colorado Springs, CO

Banerji, Devika
~~Assistant~~ Associate Professor-Communication Studies
B.A., Hindu College, Delhi University-India; M.S., North Carolina State University; Ph.D., Purdue University

Boodrookas, Alex
~~Assistant~~ Associate Professor-History
Ph.D., New York University

Botyarov, Michael
~~Assistant~~ Associate Professor-Aviation & Aerospace
M.S., Embry-Riddle Aeronautical University, Ph.D., Colorado State University, Ft. Collins, CO

Bouwmeester, Henricus M.
~~Associate~~ Professor of-Mathematics
B.S., Colorado Mesa University; M.S., Colorado State University; Ph.D., University of Colorado-Denver

Buckley, Pamela Charlie
~~Associate~~ Professor-Special Education
B.S., M.S., Colorado State University; Ph.D., University of Northern Colorado

Chorley, Sarah K
~~Associate~~ Professor-Communication Studies
A.A. Tulsa Community College; B.A., University of Oklahoma; M.A. University of Arkansas; Ph.D., University of Colorado

Clark, Michele M.
~~Associate~~ Professor-Management
B.A., Williams College; M.P.A., University of Colorado-Denver; J.D., University of Colorado-Boulder

Colton, Carrie
~~Associate~~ Professor-Theatre
B.F.A., Southern Utah University; M.F.A., Florida State University

Danhoff, Kristin L.
~~Associate~~ Professor-Social Work
B.A., University of Nebraska-Lincoln; M.S.W., University of Nebraska-Omaha; Ph.D., Colorado State University

Feldman, Joseph
~~Assistant~~ Associate Professor-Anthropology/Sociology
MA, University of Florida, Ph.D., University of Florida

Ficsor, Philip
~~Assistant~~ Associate Professor-Music
MM, University of Michigan, MM, Yale University School of Music, DMA, Boston University

Fine, Caitlin
~~Assistant~~ Associate Professor-Elementary Education
M.A., George Mason University, Ph.D., University of Colorado-Boulder

Greathouse, Tanya
~~Associate~~ Professor-Social Work
B.A., University of Colorado-Boulder; M.S.W., University of Denver; Ph.D., Smith College

Hardin, Kathy
Professor-Speech, Language, Hearing Sciences
B.A., St. Olaf College; M.A., University of Colorado-Boulder; Ph.D., University of Colorado-Anschutz School of Medicine

Jia, Di
~~Associate~~ Professor-Criminal Justice and Criminology
B.S., Hebei University; M.A., Chinese People's Public Security University; Ph.D., Sam Houston State University

Jo, Jangwoo
~~Assistant~~ Associate Professor-Hospitality, Tourism & Events
M.S. Texas Tech University, Ph.D., University of Mississippi

Luiz, Jade
~~Assistant~~ Associate Professor-Anthropology
M.S., Boston University, Ph.D., Boston University

Lunsford, Jesse
~~Assistant~~ Associate Professor-Nutrition
B.A., Colorado State University; M.S., North Dakota State University; Ph.D., Rush University

Melnick, Adam
~~Assistant~~ Associate Professor-Management
M.S., Yale University, J.D., Elisabeth Haub School of Law at Pace University

Merriam, David
~~Assistant~~ Associate Professor-Biology
B.S., Metropolitan State College, Ph.D., University of California, Davis

Mitchell, Julia
Associate Professor-Theatre
B.A., Howard University; M.F.A., National Theatre Conservatory

Moore, Daniel
~~Assistant~~ Associate Professor-Secondary Education
B.A., University of Nevada; M.Ed., University of Nevada; Ph.D., University of Colorado

Prestridge, Paris
Associate Professor-Health Professions
B.A., University of Hawaii at Manoa; N.D., Southwest College of Naturopathic Medicine

Prundeanu-Thrower, Andreea Mica
~~Assistant~~ Associate Professor-French
M.A., Eastern Michigan University, Ph.D., Michigan State University

Quijada, Maria Alejandra
~~Assistant~~ Associate Professor-Management
M.S. Stanford University, PhD., Massachusetts Institute of Technology

Rief, John
~~Associate~~ Professor-Communication Studies
B.A., Regis University; M.A., Ph.D., University of Pittsburgh

Russo Garrido, Anahi
Chair and ~~Associate~~ Professor-Gender, Women, and Sexualities Studies
B.S., University of Montreal; M.A., Concordia University; Ph.D., Rutgers University

Schuetz, Logan
~~Assistant~~ Associate Professor-Human Performance & Sport
M.A., Indiana University-Bloomington, Ph.D., University of Northern Colorado

Shafieizadeh, Kiyan
~~Assistant~~ Associate Professor-Hospitality, Tourism & Events
M.S. Tabataba'i University, Ph.D., Oklahoma State University

Shapland, Dorothy L.
~~Associate~~ Professor-Early Childhood Education
B.A., Muhlenberg College; M.A., University of Denver; Ed.D., University of Colorado-Denver

Singh, Smita
~~Assistant~~ Associate Professor-Hospitality, Tourism & Events
Ph.D., Iowa State University

Stock, Michala K.
~~Associate~~ Professor-Sociology and Anthropology
B.A., Northwestern University; M.A., New York University; Ph.D., University of Florida

Valipour, Mohammad
~~Assistant~~ Associate Professor-Environmental Engineering
M.S. University of Tehran, Iran, Ph.D., Sari University, Iran

Walton, Andrew
~~Assistant~~ Associate Professor-Early Childhood Education
M.S., Trinity University, Ph.D., University of Texas-San Antonio

Yee, David
~~Assistant~~ Associate Professor-History
B.A., Temple University; M.A., City College of New York; Ph.D., State University of New York at Stony Brook

Emeritus Faculty

Alfaro, Daniel
Professor – Student Teaching

C de Baca, Vincent
Associate Professor – History

Bertelsen, Susan, Ed.D
Professor – Exercise and Sport Sciences

Boxer, Phillip
Dean

Branch, Charlie
Professor – Education and Human Services

Brinker, Orason
Associate Professor – Mathematical Sciences

Brooke, George
Professor – Teacher Education

Capehart, Melvin
Professor – Electrical Engineering Technology

Cisneros, Ernest
Associate Professor – Mathematics

Clementson, Gerhardt
Professor – Computer and Management Science

Cohen, Robert
Professor – Biology

Colles, Colleen, Ed.D
Professor – Exercise and Sport Sciences

Cook, W. Thomas
Professor – Communication Arts and Sciences

Cunningham, Eldon
Professor – Art

Dormer, Cynthia Gillette, Ph.D.
Lecturer - Nutrition

Drake, James
Assistant Professor – Hospitality, Tourism and Events

Farkas, Paul
Associate Professor – English

Flemon, Wilton
Professor – Chemistry

Garza, Jennifer
Associate Professor – History

Gilmore, Don, Ed.D.
Professor - Mathematics

Griffin, Joan
Professor – English

Hamilton, William
Professor - English

Harvey, Mark
Professor – Human Performance, Sport and Leisure Studies

Hinde, Elizabeth, Ph.D.
Dean

Huggins, Kenneth
Professor – Finance

Jordan, Stephen
President

Kleinfeld, Elizabeth, Ph.D.
Professor - English

Kober, Jane
Assistant Professor – Human Performance, Sport and Leisure Studies

Lang, Rodger
Professor - Art

Lundy, Jean
Associate Professor – Speech Communication

Mayes, Timothy
Professor - Finance

McInerney, Thomas
Professor - History

McKinney, Keats
Dean

Middlemist, George
Chief Financial Officer

Milligan, Merle
Professor - Mathematics

Nees, Harol
Professor – Criminal Justice and Criminology

Noel, Rachel
Professor – African American Studies and Sociology

Odden, Arthur
Associate Professor – Management

Olmsted, Conway
Associate Professor – Spanish

Olsen, David
Associate Professor – Physics

Pook, Laszlo
Professor – Computer Information Systems

Rollins, Wayne
Assistant Professor – English

Ruch, David, Ph.D.
Professor – Mathematics

Sawaya, Mary Alice, Ph.D.
Professor - Nursing

Schiff, Jean
Professor - Art

Scott, C
Professor – Management

Smilnak, Roberta
Professor – Earth and Atmospheric Sciences

Stephen, Joyce
Professor – Criminal Justice and Criminology

Tucker, Patricia
Professor – Mathematical and Computer Science

Wall, Donald
Professor – History

Wetzel, JoyLynn
Professor – History and Women's Studies

White, Cottee
Professor – African American Studies

Wilson, Jackie
Professor – Criminal Justice and Criminology

Yamauchi, Elyse
Student Judicial Officer

Catalog Index

Jump to: A B C D E F G H I L M N O P R S T U W

Student Rights and Responsibilities (Undergraduate Catalog)

Student Complaint Policy

Students are encouraged to first address concerns and conflicts directly with the relevant faculty or department/program staff. ~~If resolution at this level is not possible, see~~ See MSU Denver's Student Complaint Policy.

Students must complete Metropolitan State University of Denver's internal complaint process. If the issue remains unresolved, they may then file a complaint with the Colorado Department of Higher Education (CDHE) by following the instructions provided on their website.

Student Rights and Responsibilities (Graduate Catalog)

Student Complaint Policy

Students are encouraged to first address concerns and conflicts directly with the relevant faculty or department/program staff. ~~If resolution at this level is not possible, see~~ See MSU Denver's Student Complaint Policy.

Students must complete Metropolitan State University of Denver's internal complaint process. If the issue remains unresolved, they may then file a complaint with the Colorado Department of Higher Education (CDHE) by following the instructions provided on their website.

College of Aerospace, Computing, Engineering, and Design

Department of Aviation and Aerospace Science

Program Modification

Aerospace Systems and Mission Design Major, B.S.

Department of Aviation and Aerospace Science

Available Program Format(s): Hybrid

College of Aerospace, Computing, Engineering, and Design

CIP Code: 29.0402

Students who attain a Bachelor of Science degree with a major in Aerospace Systems and Mission Design will be equipped with a solid foundation in technical and operational concepts along with associated technology to support a career working with aerospace systems. The curriculum is underpinned with a comprehensive foundation of scientific principles to support students interested in overall space mission conceptualization, design and integration of space systems, and spaceflight mission operations and support throughout the entirety of the life cycle.

Student Outcomes

1. Students will develop a comprehensive understanding of aerospace systems along with professional technical and scientific communication skills using current technologies to conduct systems analysis.
2. Students will possess the knowledge, ethical principles, and expertise necessary to make a positive impact, effectively communicating complex information and solving problems within the aerospace domain.

3. Students will develop critical thinking skills, planning, decision-making, and effective communication abilities, integrating technical and scientific knowledge to address challenges in a professional context.
4. Students will evaluate and integrate the significance of regulatory compliance, understanding its influence on global aerospace operations while addressing interconnected technical, environmental, and human factors.
5. Students will apply innovative approaches to ensure long-term sustainability, emphasizing the responsible use of resources in the aerospace domain.

Program Requirements

- A total of 120 semester hours are required for graduation.
- A grade of D- or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.
- A grade of "C-" or better is required in all upper division courses listed as part of the major, whether or not they are AES prefixed courses, including electives. Students should note that programs differ in the minimum grade required. This requirement does not apply to General Studies classes.
- Students must maintain a minimum cumulative GPA of 2.0 or higher in the Bachelor of Science degree with a major in Aerospace Systems and Mission Design.
- A minor IS NOT required for this program.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
    - **Recommended**: It is recommended that students fulfill this requirement with MTH 1110 - College Algebra for Calculus, which is required by the Aerospace Systems and Mission Design major.
- Arts and Humanities (6 credits)
    - **Recommended:** It is recommended that students partially fulfill this requirement with PHI 3370 - Computers, Ethics, and Society.
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
    - **Recommended:** It is recommended that students fulfill this requirement with PHY 2311 - General Physics I, PHY 2321 General Physics I Laboratory, and AES 1050 - Introduction to Space, which are required by the Aerospace Systems and Mission Design major.
- Social and Behavioral Sciences (6 credits)
    - **Recommended:** It is recommended that students partially fulfill this requirement with CET 3120 - Engineering Economy.
- Global Diversity (0 or 3 credits**)

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.
- Many programs include courses that meet this requirement. Students should consult with their advisor to determine what program courses may fulfill this requirement.

Required Ancillary Courses: 40 credits

- CHE 1800 - General Chemistry I **Credits:** 4
- CS 1050 - Computer Science 1 **Credits:** 4
- CSS 2751 - Principles of Cybersecurity **Credits:** 3
- EET 2000 - Electric Circuits and Machines **Credits:** 3
- GIS 2250 - Geographic Information Systems **Credits:** 4

- GIS 4840 - Remote Sensing **Credits:** 3
- JMP 2610 - Introduction to Technical Writing **Credits:** 3
- MTH 1110 - College Algebra for Calculus **Credits:** 4
- MTH 1120 - College Trigonometry **Credits:** 3
- MTH 1410 - Calculus I **Credits:** 4
- PHY 2311 - General Physics I **Credits:** 4
- PHY 2321 - General Physics I Laboratory **Credits:** 1

Required Courses: 34 credits

- AES 1050 - Introduction to Space **Credits:** 3
- AES 2607 - Introduction to Aerospace Systems Simulation **Credits:** 3
- AES 2630 - Spacecraft Mission Operations I **Credits:** 3
- AES 3600 - Space Flight Operations I **Credits:** 3
- AES 3620 - Aerospace Systems Project and Mission Scheduling **Credits:** 3
- AES 4601 - Space Flight Operations II **Credits:** 3
- AES 4602 - Aerospace Commercialization Operations **Credits:** 3
- AES 1910 - Aerospace Industry Exploration and Analysis **Credits:** 3
- AES 3640 - Fundamentals of Aerospace Systems Analysis and Design **Credits:** 4
- AES 4640 - Aerospace Model-Based Systems Analysis **Credits:** 3
- AES 4650 - Aerospace Software and Mission Visualization Tools **Credits:** 3

Electives: 18 credits

Select 18 credit hours from the following.

- AES 1040 - Introduction to Unmanned Aircraft Systems **Credits:** 3
- AES 1950 - Aerospace Digitalization: Technology and Processes **Credits:** 3
- AES 1960 - Aerospace Workforce Analysis and Strategic Development **Credits:** 3
- AES 2050 - Aviation and Aerospace History and Development **Credits:** 3
- AES 3530 - Aerodynamics **Credits:** 3
- AES 3607 - Orbital Mechanics and Aerospace Systems Simulations **Credits:** 3
- AES 3610 - Elements of Spacecraft Design I **Credits:** 3
- AES 3630 - Spacecraft Mission Operations II **Credits:** 3
- AES 3980 - Internship in Aviation and Aerospace Science **Credits:** 1-15
- AES 4620 - Elements of Spacecraft Design II **Credits:** 3
- AMS 3010 - Additive Manufacturing Stratasys Certification Preparation **Credits:** 3
- CET 3120 - Engineering Economy **Credits:** 3
- CS 2050 - Computer Science 2 **Credits:** 4
- IND 1450 - Technical Drawing and CAD **Credits:** 3
- IND 2810 - Technology and Design: Global Perspectives **Credits:** 3
- IND 3000 - Design Thinking **Credits:** 3
- MET 4000 - Project Engineering **Credits:** 3
- MTH 3210 - Probability and Statistics **Credits:** 4
- PHI 3370 - Computers, Ethics, and Society **Credits:** 3

Senior Experience: 3 credits

- AES 4603 - Aerospace Operations Systems Analysis and Design **Credits:** 3

Summary of Requirements

General Studies Requirement	33 credits
ESSJ Requirement	0-3 credits
Additional Requirements (Ancillary Courses)	40 credits
Major Requirements	34 credits
Elective Courses	18 credits
Senior Experience Course	3 credits
Unrestricted Electives	0-7 credits
Total for the Aerospace Systems and Mission Design Major, B.S.	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Program Modification

Aviation Management Minor

Department of Aviation and Aerospace Science

College of Aerospace, Computing, Engineering, and Design CIP Code: 49.0101

About the Program

The Aviation Management Minor is designed to afford majors in other disciplines the opportunity to develop an understanding of the aviation and aerospace industries. It supports careers that integrate the business venues of aerospace and space commercialization with many areas of management in aeronautics.

Program Requirements

- This minor is a total of 18-19 credits.
- A cumulative 2.0 GPA is required for this program.

Required Courses: 6-7 credits

- AES 1010 - Introduction to Aviation and Aerospace Management **Credits:** 3
  or
- AES 1100 - Private Pilot Ground **Credits:** 4
- AES 3220 - Aviation and Aerospace Law **Credits:** 3

Elective Courses: 12 credits

Select 12 credits from the following list:

- AES 3230 - Airline Management **Credits:** 3
- AES 3240 - Airline Planning **Credits:** 3
- AES 3850 - Human Factors and Physiology of Flight **Credits:** 3
- AES 4200 - Airport Planning and Management I **Credits:** 3

- AES 4210 - Airport Planning and Management II **Credits:** 3
- AES 4230 - General and Business Aviation Operations **Credits:** 3
- AES 4240 - Air Cargo Industry **Credits:** 3
- AES 4870 - Aviation Safety Program Management **Credits:** 3
- AES 4910 - Aviation and Aerospace Strategic Planning **Credits:** 3

Summary of Requirements

Required Courses	6-7 credits
Elective Courses	12 credits
Total for the Aviation Management Minor	**18-19 credits**

Program Modification

Unmanned Aircraft Systems Certificate

Department of Aviation and Aerospace Science

College of Aerospace, Computing, Engineering, and Design CIP Code: 49.0101

About the Certificate

This certificate prepares the student with a strong foundation for career development in the commercial unmanned aircraft ~~aerial~~ systems industry as a 14 CFR Part 107 Remote Pilot. It also expands opportunities for those currently employed in the industry seeking a better understanding of how to leverage and manage UAS-based resources for enhancing commerce and exploring new entrepreneurial opportunities.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared.

- Requirements for Certificates

Program Requirements

- A student must possess the FAA Part 107 Remote Pilot Certificate before graduation with this certificate.
- Students seeking the Unmanned Aircraft Systems Certificate must earn a grade of "C" or better for each class required in the program.

Required Courses: 17 credits

- AES 1040 - Introduction to Unmanned Aircraft Systems Credits: 3
- AES 2040 - Unmanned Aircraft Systems Flight and Control Credits: 4
- AES 3040 - Unmanned Aircraft Systems Data Collection and Analysis Credits: 4
- FAA Part 107 Remote Pilot Certificate
- AES Approved Elective Credits: 6

  Choose 6 Credits from AES Approved Elective Course List
- AES 1010 - Introduction to Aviation and Aerospace Management Credits: 3
- AES 1050 - Introduction to Space Credits: 3

- AES 1100 - Private Pilot Ground Credits: 4
- AES 1400 - Aviation Weather Credits: 3
- AES 2050 - Aviation and Aerospace History and Development Credits: 3
- AES 2220 - Flight Dispatch and Load Planning Credits: 3
- AES 4230 - General and Business Aviation Operations Credits: 3

Summary of Requirements

Required Courses	17 credits
Total for the Unmanned Aircraft Systems Certificate	**17 credits**

College of Business

New Program

Master of Business Administration

The College of Business at MSU Denver offers a General Master of Business Administration (MBA) with a prescribed, 30-hour requirement. The Master of Business Administration (MBA) with a concentration requires the 27-hour core and 9 hours from ONE selected concentration: Accounting, Business Analytics, Finance, Human Resource Management, or Strategic Management.

Mission of the MSU Denver MBA Program

We transform students into effective business professionals. We do this by providing an accessible, flexible, and high-quality MBA education made possible through excellence in teaching, individualized attention, and hands-on experiences, all at an exceptional value.

MBA Program Goals

The goals of the MSU Denver MBA Program support the missions of the University and the College of Business.

Graduates of the MSU Denver MBA Program will develop and demonstrate competence in written, oral, and collaborative communication skills (LG1). MSU Denver MBA graduates will be effective problem solvers with a practical, real-world focused perspective supported by familiarity with decision making models and analytical tools (LG2). Finally, MSU Denver MBA graduates will possess both functional and cross-functional business knowledge (LG5) reinforced with an appreciation of the ethical (LG3) and global issues (LG4) that permeate contemporary business practices.

Accreditation

In addition to the distinction of being the value leader in the Denver metro area the MSU Denver MBA program is accredited as part of the MSU Denver College of Business's AACSB accreditation. AACSB is world-recognized as the leading accreditor of colleges and schools of business. Less than 5% of all business programs worldwide have earned the prestige of AACSB accreditation.

MBA Program Admission

Admission Criteria

Applicants, at a minimum, who hold a bachelor's degree from a regionally accredited college or university in any discipline may apply. Most students are advised to gain two or more years of work experience before enrolling in the MBA program. All admission decisions will be made by an MBA admissions committee.

To apply, begin by choosing the pathway that best fits your academic and professional background:

1. GMAT Waiver
   - Applicants in this pathway first request a GMAT score waiver. Please go to our website for specific waiver processes.*
2. Traditional Admission
   - Applicants in this pathway take the GMAT/GRE, submit official test scores, and are then subsequently reviewed by the Admissions Committee.*
3. Previous Graduate Degree
   - Applicants in this pathway have earned a graduate degree from an accredited college or university.*

4. Professional Portfolio
    - Applicants in this pathway typically have at least five years of significant and progressive business and management experience. Documentation through a portfolio concisely illustrates your upward career trajectory, skills, talents, and why you are equipped to pursue an MBA at MSU Denver.*

**For all pathways, specific processes for applying, and all materials required for a complete application are found on our website.*

Leveling Requirements

Leveling may be required. Please consult with our admissions team.

International Applicants

Additional documentation is required. Please visit the International Student Admissions webpage.

Non-degree Seeking Students

Non-degree seeking students have the option to take up to 9 credit hours of MBA coursework on a space available basis. Admission requirements for a non-degree seeking student are found on our website.

If a non-degree seeking student would like to become degree-seeking, the student must apply to become degree-seeking and must have earned an average GPA of 3.0 or above in the MBA program courses they have completed.

Advancement to Candidacy

All students accepted into the Master of Business Administration program must adhere with the following MBA Program academic policies:

- Students in the MBA program must complete the degree with a cumulative GPA of 3.0 or higher. No more than two (2) grades of C-, C, or C+ will count toward the degree requirements, and no grade lower than a C- will count toward the degree. All grade records remain on the master's transcript and count toward the cumulative GPA. A student who receives three grades of less than a "B-" will be suspended from the program for one academic semester. Upon return from suspension, subsequent grades below a "B-" will result in program dismissal.

- Students must complete the MBA Capstone (MBA 6500) with a minimum grade of B-.

- Students may enroll in no more than fifteen (15) credit hours per semester. Students who wish to take over 15 credits are required to seek approval. For more information, please contact the Associate Dean or MBA Advisor at 303-615-0643 or mba@msudenver.edu.

- Master's students are considered full-time if they are registered for six (6) credit hours, half-time if registered for three (3) credit hours, and less than half-time if registered for two (2) or fewer credit hours.

- Students must complete the master's degree within six (6) calendar years from the semester of initial enrollment.

- Students not enrolled for three (3) consecutive semesters (including summer) must submit a re-admission application. Students requesting re-admission must be in good academic standing and must submit their application for re-admission to the master's program in which they have been enrolled.

- The Student Code of Conduct will apply to all MSU Denver students, regardless of level. Access the Student Code of Conduct.

- Students must adhere to MSU Denver's residency requirement for graduate students.

MBA Program Requirements

- **General MBA.** General MBA students will complete 30 credit hours. This includes 27 credit hours of the MBA core and 3 additional hours, typically MBA 5502. The Director of the MBA, in concert with the MBA Advisor and student, will consider deviations from this recommended course on a case by case basis.

- **MBA with Concentration.** Students will complete 27 credit hours of required MBA Core courses, and a 9 credit hour area of concentration. An MBA concentration is comprised of at least 9 credit hours in a particular discipline, allowing students to develop more in-depth expertise. The overall MBA program requires a minimum total requirement of 36 credit hours.

General MBA (30 credit hours)

MBA Core (27 credit hours)

All MBA students complete course work in each of the major functional areas of business. The MBA core develops and reinforces the functional and cross-functional knowledge component of the MBA program. Once all MBA Core coursework is successfully completed, students take an integrative capstone course that reinforces cross-functional thinking and problem solving.

If student selects to take MBA 5710 - Global Business Management Experience, one core course, at the discretion of the Program Director, is held equivalent to MBA 5710. See 'Optional International Immersion' section.

- MBA 5105 - Accounting Concepts **Credits:** 3
- MBA 5201 - Managerial Analysis and Decision-Making **Credits:** 3
- MBA 5205 - Information Systems Strategy Planning **Credits:** 3
- MBA 5305 - Managerial Economics **Credits:** 3
- MBA 5405 - Corporate Finance **Credits:** 3
- MBA 5510 - Operations and Supply Chain Management **Credits:** 3
- MBA 5580 - Leading through Complexity **Credits:** 3
- MBA 5605 - Marketing Analysis and Planning **Credits:** 3
- MBA 6500 - Integrative and Strategic Perspectives of Organizations **Credits:** 3 (prerequisite: completion of MBA Core)

Subtotal for MBA Core: 27 credit hours

Optional International Immersion Experience (0-3 credit hours)

The MSU Denver MBA strongly recommends international experiences as a component of the MBA. Depending on the trip offered, MBA 5710 may substitute for one of the core MBA courses. Please speak with the Director of the MBA and your MBA Advisor.

- MBA 5710 - Global Business Management Experience **Credits:** 3

MBA General Prescribed Elective (3 credit hours)

If completing the 30 credit hour General MBA, one additional 3 credit hour course completes the MBA degree.

- MBA 5502 - Strategic Project Navigation **Credits:** 3

Total for General MBA: 30 credits

MBA Core (27 credit hours) + MBA General Prescribed Elective (3 credit hours)

MBA with Concentration (36 credit hours)

Students electing to have a concentration complete the MBA Core (27 credit hours) and ONE of the concentrations below.

MBA Core (27 credit hours)

- MBA 5105 - Accounting Concepts **Credits:** 3
- MBA 5201 - Managerial Analysis and Decision-Making **Credits:** 3
- MBA 5205 - Information Systems Strategy Planning **Credits:** 3
- MBA 5305 - Managerial Economics **Credits:** 3
- MBA 5405 - Corporate Finance **Credits:** 3
- MBA 5510 - Operations and Supply Chain Management **Credits:** 3
- MBA 5580 - Leading through Complexity **Credits:** 3
- MBA 5605 - Marketing Analysis and Planning **Credits:** 3
- MBA 6500 - Integrative and Strategic Perspectives of Organizations **Credits:** 3 (prerequisite: completion of MBA Core)

Subtotal for MBA Core: 27 credit hours

MBA Area of Concentration (9 credit hours)

The MBA area of concentration allows students to develop more in-depth expertise based on their interests and career aspirations.

Accounting Concentration

Select three of the following courses. Note that some of these courses may have pre-requisites that must be satisfied prior to enrollment.

- ACCM 5070 - Taxation for Decision Makers **Credits:** 3
- ACCM 5100 - Financial Accounting and Reporting **Credits:** 3
- ACCM 5400 - Strategic Cost Management **Credits:** 3
- ACCM 5600 - Fraud Examination Awareness Seminar **Credits:** 3
- ACCM 5800 - Governance and Risk Assurance Theory **Credits:** 3
- ACCM 5901 - Risk Assurance and Advisory Engagements **Credits:** 3

Subtotal for Accounting Concentration: 9 credits

Business Analytics Concentration

Select three of the following courses:

- MBA 5210 - Knowledge Discovery using Business Analytics **Credits:** 3
- MBA 5220 - Practical Business Analytics **Credits:** 3
- MBA 5230 - Data Mining for Business Intelligence **Credits:** 3
- MBA 5640 - Analytics and Statistics for Marketing Decisions **Credits:** 3

Subtotal for Business Analytics Concentration: 9 credits

Digital Marketing Concentration

Take the following three courses:

- MBA 5615 Digital Content Creation **Credits: 3**
- MBA 5640 Analytics and Statistics for Marketing Decisions **Credits: 3**
- MBA 5685 Digital Marketing Strategy **Credits: 3**

Finance Concentration

Take the following three courses:

- MBA 5460 - Investment Theory and Analysis **Credits:** 3
- MBA 5470 - Advanced Portfolio Analysis **Credits:** 3
- MBA 5480 - Strategic Finance **Credits:** 3

Subtotal for Finance Concentration: 9 credits

Human Resource Management Concentration

Take the following three courses:

- MBA 5550 - Employee and Labor Relations **Credits:** 3
- MBA 5560 - Human Resources: Strategic Talent Management **Credits:** 3
- MBA 5570 - Realizing Competitive Advantage through Human Resource Management **Credits:** 3

Subtotal for the Human Resource Management Concentration: 9 credits

Strategic Management Concentration

Select three of the following courses:

- ACCM 5400 - Strategic Cost Management **Credits:** 3
- MBA 5480 - Strategic Finance **Credits:** 3
- MBA 5502 - Strategic Project Navigation **Credits:** 3
- MBA 5680 - Advanced Strategic Marketing and Analysis **Credits:** 3

Subtotal for Strategic Management Concentration: 9 credits

Total for MBA with Concentration: 36 credits

Program Modification

Nonprofit Management ~~Studies~~ Certificate

College of Business

About the Program

The Nonprofit Management Certificate Program prepares students for leadership in the nonprofit sector. Students will learn about essential nonprofit management topics, including strategic planning, governance, board relations, and volunteer engagement. Participants gain practical skills in fundraising and marketing, such as donor stewardship, campaign creation, and community outreach. The curriculum includes finance fundamentals, such as budgeting and financial reporting, to promote fiscal accountability. The program also emphasizes entrepreneurship within the nonprofit sector, encouraging innovative program design and leadership to achieve sustained impact. Students must achieve a minimum grade of C in all courses to successfully complete the certificate program. ~~This certificate of completion is intended to provide additional knowledge and skills in the area of Non-profit Studies. This certificate program is designed for working professionals and non-degree-seeking students who may or may not have a baccalaureate or master's degree or agency training in the administration and management of non-profit and public organizations.~~

Student Outcomes

1. Upon completion of the certificate, students will be able to:
2. Explain the role, purpose, and operating environment of nonprofit organizations.
3. Apply marketing strategies to advance social good initiatives and engage diverse stakeholders.
4. Develop fundraising approaches that integrate donor engagement, campaign planning, and resource development techniques.
5. Assess the roles and contributions of nonprofit staff, boards, volunteers, and partners to support effective governance and organizational performance.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared.

- Requirements for Certificates

Program Requirements

- Non-degree students may select classes that specifically meet their professional goals.
- Students are required to achieve a minimum grade of C in all courses, to successfully complete the certificate program.

Required Courses: 18 credits

- HSP 2010 - Introduction to High-Impact Nonprofit Organizations **Credits:** 3
- MKT 3190 - Marketing for Social Good **Credits:** 3
- MKT 3820 - Fundraising Strategies for Nonprofit Organizations **Credits:** 3
- MGT 3510 - The People of Nonprofits: Staff, Board, Volunteers, Clients and You **Credits:** 3
- MGT 3860 - Social Entrepreneurship **Credits:** 3

- FIN 4450 - Nonprofit Financial Management and Financing **Credits:** 3
  OR
  Any Internship (3980) of 3 hours approved by Chair.

Summary of Requirements

Required Courses	18 credits
Total for the Nonprofit Studies Certificate	**18 credits**

Department of Computer Information Systems and Business Analytics

New Program

Artificial Intelligence in Business Certificate

Department of Computer Information Systems and Business Analytics — Available Program Format(s): Hybrid

College of Business — CIP Code: 11.0102

About the Program

The Artificial Intelligence in Business Certificate provides students with the technical and analytical foundations that support modern AI and data-driven technologies used in business and organizations. The curriculum focuses on the practical tools and methods that underlie many AI applications, including programming, statistical analysis, business intelligence, data mining, and large-scale data analytics. Students learn how organizations collect and manage data, apply predictive and pattern-discovery methods, and translate analytical results into actionable insights. Through hands-on work with real data and industry software, the minor prepares students to work with the analytics, machine learning, and data science tools that power many contemporary AI systems used across business, government, and industry.

Student Outcomes

1. Students understand how organizations use information systems and data infrastructure to support analytics and artificial intelligence.
2. Students can apply structured computational problem solving and programming techniques to develop data-driven solutions.
3. Students can apply statistical methods and predictive analytics to analyze business data and support decision making.
4. Students can apply data mining and machine learning techniques to discover patterns and generate insights from large datasets.
5. Students can work with modern data science workflows that transform raw data into operational analytical solutions.
6. Students can use visualization, text analytics, and data analysis tools to extract insights from complex organizational data.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared.

- Requirements for Certificates

Program Requirements

- This certificate is a total of 18 credits.
- The minimum passing grade for all courses included in this certificate is a grade of “C”

Required Courses: 18 credits

- CIS 2010 - Foundations of Information Systems **Credits:** 3
- CIS 2110 - Structured Problem Solving in Information Systems **Credits:** 3
- CIS 2200 - Introduction to Business Intelligence **Credits:** 3
- CIS 2320 - Descriptive and Predictive Analytics **Credits:** 3
- CIS 3350 - Knowledge Discovery and Data Mining **Credits:** 3
- CIS 4370 - Data Science and Big Data Analytics **Credits:** 3

Summary of Requirements

Required Courses	18 credits

Total for the Artificial Intelligence in Business Certificate	**18 credits**

New Program

Artificial Intelligence in Business Minor

Department of Computer Information Systems and Business Analytics

College of Business CIP Code: 11.0102

About the Program

The Artificial Intelligence in Business Minor prepares students to understand, apply, and work alongside the AI systems reshaping modern business and industry. Many of the techniques that power today's AI such as predictive modeling, pattern recognition, classification, and clustering have their roots in statistics and data analytics developed decades before the term "artificial intelligence" became mainstream. What changed was scale: as data volumes exploded and computing costs dropped, these same analytical methods became the engines behind machine learning systems, recommendation algorithms, and automated decision tools. This minor builds the foundational skills that sit at the core of how real AI systems are built and operated: information systems, Python programming, statistical modeling, machine learning, and large-scale data analytics. Students move through the full analytical pipeline: collecting and preparing data, training predictive models, discovering patterns in complex datasets, and translating results into decisions that organizations can act on. The curriculum is deliberately hands-on, using real data and industry tools so graduates are ready to contribute from day one.

This minor provides students with the analytical and technical foundations needed to understand and apply modern artificial intelligence and data-driven decision systems in business environments.

Student Outcomes

1. Evaluate how organizations use information systems and data infrastructure to support analytics and artificial intelligence.
2. Apply structured computational problem solving and programming techniques to develop data-driven solutions.
3. Use statistical methods and predictive analytics to analyze business data and support decision making.
4. Apply data mining and machine learning techniques used in many artificial intelligence systems to discover patterns and generate insights from large datasets.
5. Implement end-to-end data science workflows that transform raw data into operational analytical solutions.
6. Use visualization, text analytics, and network analysis tools to extract insights from complex organizational data.

Program Requirements

- This minor is a total of 18 credits.
- The minimum passing grade for this program is "D".

Required Courses: 18 credits

- CIS 2010 - Foundations of Information Systems **Credits:** 3
- CIS 2110 - Structured Problem Solving in Information Systems **Credits:** 3
- CIS 2200 - Introduction to Business Intelligence **Credits:** 3
- CIS 2320 - Descriptive and Predictive Analytics **Credits:** 3
- CIS 3350 - Knowledge Discovery and Data Mining **Credits:** 3
- CIS 4370 - Data Science and Big Data Analytics **Credits:** 3

Summary of Requirements

Required Courses	18 credits
Total for the Artificial Intelligence in Business Minor	**18 credits**

Department of Management

Program Modification

Business Minor

Department of Management

College of Business CIP Code: 52.0201

Student Outcomes

Upon completion of the Business Minor, students will be able to:

1. Explain fundamental concepts across core business disciplines.
2. Analyze business problems using data to support informed decision-making.
3. Apply business principles to evaluate organizational strategies.

Program Requirements

- This minor is a total of 18 credits.
- A grade of "C-" or better is required for each course in this program to count toward the Bachelor's degree.
- Students earning a B.S. in a degree awarded by the College of Business, a B.A. in Entrepreneurship, or a B.A. in Global Business Studies may not minor in Business.

Required Courses: 18 credits

- ACC 1010 - Fundamentals of Accounting **Credits:** 3
  or
- ACC 2010 - Principles of Accounting I **Credits:** 3

- CIS 2010 - Foundations of Information Systems **Credits:** 3
- ECO 2020 - Principles of Microeconomics **Credits:** 3

- FIN 2220 - Small Business Financing **Credits:** 3
  or
- FIN 3010 - Financial Markets and Institutions **Credits:** 3

- MGT 3000 - Organizational Management **Credits:** 3
- MKT 3000 - Principles of Marketing **Credits:** 3

Summary of Requirements

Required Courses	18 credits
Total for the Business Minor	**18 credits**

International Business Major, B.S.

Department of Management

Available Program Format(s): In-Person, Hybrid, Online

College of Business

Department of Marketing

Program Modification

Advertising and Promotion Minor

Department of Marketing

College of Business

CIP Code: 52.1401

About the Program

This minor is intended for students who have a non-marketing major and who want to add some study of business from a marketing perspective to their degree program. This minor introduces students to the elements of integrated marketing communications, such as advertising, sales promotions, personal selling, direct selling, and public relations. This minor will give students the opportunity to develop practical skills in advertising and promotional strategies.

Student Outcomes

Upon completion, students will be able to:

1. Understand and analyze advertising and promotional concepts and techniques to effectively manage all marketing communications.
2. Evaluate an advertising and promotional campaign and strategy, considering ethical and technological factors, to make effective marketing decisions.
3. Develop a creative strategy and plan for delivering messages across various promotional platforms.

Program Requirements

- This minor is a total of 18 credits.
- Students must have a minimum cumulative GPA in the minor of 2.0.
- The courses cannot be taken pass/fail.
- Some courses in the minor have prerequisites which must be satisfied.
- At least nine credit hours of the required courses for this minor must be completed in residency at MSU Denver.

Required Courses: 12 credits

**Courses may have prerequisites that must be satisfied.*

- MKT 3000 - Principles of Marketing **Credits:** 3
- MKT 3110 - Advertising and Promotion Management **Credits:** 3
- MKT 4110 - Brand Management **Credits:** 3
- MKT 4300 - Social Media Marketing **Credits:** 3

Subtotal: 12 credits

Elective Courses: 6 credits

**Courses may have prerequisites that must be satisfied.*

- MKT 3190 - Marketing for Social Good **Credits:** 3
- MKT 3250 - Professional Selling **Credits:** 3
- MKT 3300 - Marketing of Services **Credits:** 3
- MKT 3310 - Consumer Behavior **Credits:** 3
- MKT 3710 - International Marketing **Credits:** 3
- MKT 3750 - Ethnic Representations in Marketing **Credits:** 3
- MKT 3980 - Internship in Marketing **Credits:** 1-15
- MKT 4200 - Content Marketing **Credits:** 3
- MKT 4520 - Student Marketing Agency **Credits:** 1-6

Alternate Courses
Students may take one of the following courses (3 credits) to replace one elective course.

- ART 1531 - Art Studio: 4D **Credits:** 3
- CDES 2222 - Fundamentals of Communication Design **Credits:** 3
- CDES 2602 - Interface Design and Development **Credits:** 3
- CDES 3625 - Animation Practices **Credits:** 3
- JMP 1000 - Introduction to Journalism and Mass Media **Credits:** 3
- JMP 2430 - Introduction to Media Production **Credits:** 3
- JMP 2700 - Fundamentals of Public Relations **Credits:** 3
- MKT 3200 - Digital Marketing Fundamentals **Credits:** 3

Summary of Requirements

Required Courses	12 credits
Elective Courses	6 credits
Total for the Advertising and Promotion Minor	**18 credits**

Program Modification

Business Administration Major, B.S.

Department of Marketing

Available Program Format(s): In-Person, Online

College of Business

CIP Code: 52.0201

About the Program

The B.S. in Business Administration is a general business degree that enables students to build cross-functional expertise and prepares students to progress their career into multi-function business and leadership roles. The B.S. in Business Administration degree program enables students who do not need or desire deep expertise in one functional area an opportunity to create several areas of business focus which match their needs. Students will complete business core and additional requirements that provide a solid foundation across business functions. Within the major, students will select 21 credits of business coursework with a maximum of 9 credits in any one area of business, enabling students to select from a broad array of courses that support students' professional interests. Finally, students complete the degree with a course on Strategic Leadership (MGT 4910). As part of the College of Business, the B.S. in Business Administration is accredited by AACSB.

Student Outcomes

The purpose of the B.S. in Business Administration is to prepare graduates to progress their career into multi-function business and leadership roles.

Goal 1: Students will apply outcomes from self-assessments and knowledge from major coursework to clearly communicate career pathways.

Goal 2: Students will be able to integrate knowledge across business functions.

- 2.1 - Students will be able to integrate data from multiple functional areas to inform decision making.
- 2.2 - Students will demonstrate knowledge of how to interact with and manage teams in a range of functional areas.

The College of Business B.S. programs, including Business Administration, share a common set of four cross-disciplinary core competencies, knowledge, and skills.

Competency 1: Communication - Business students will be able to:

- 1.1 - Communicate effectively through writing.
- 1.2 - Communicate effectively through speaking.

Competency 2: Business Solutions - Business students will be able to analyze a business situation and recommend effective solutions utilizing:

- 2.1 - appropriate technological frameworks.
- 2.2 - appropriate ethical frameworks.
- 2.3 - appropriate global frameworks.

Competency 3: Technological Agility - Business students will be able to:

- 3.1 - understand the impact of current technology on the business environment.

Competency 4: Core Knowledge - Business students will demonstrate competence in required business topics, including accounting, computer information systems, data analytics, economics, ethics, finance, marketing, management, and business law.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.
- To earn a Bachelor of Science degree in Business Administration, a student must successfully complete 30 or more credit hours of business coursework at MSU Denver. This 30-hour residency requirement can be met by completing any business courses with the prefix ACC, ACCM, BNK, BUS, CIS, ECO, FIN, MGT, MKT, and REL and a course number of 2000 or higher. A student must complete at least 12 upper-division semester hours in Business Administration at MSU Denver.
- In order to graduate, students must maintain a 2.0 average inside the **Business Core** and also maintain a 2.0 inside **Business Administration Major required courses and elective courses**.
- In order to graduate, a grade of "C-" or better is required in MGT 4950.
- Students should note that programs differ in the minimum grade required.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)

    - **Recommended:** COMM 1010 - Presentational Speaking or COMM 1100 - Fundamentals of Oral Communication (one of these courses is required in the College of Business Additional Requirements for Business students completing any Bachelor of Science major.)
- Quantitative Literacy (3 credits)
    - **Recommended:** MTH 1110 - College Algebra for Calculus or MTH 1310 - Finite Mathematics for the Management and Social Sciences (one of these courses is required in the College of Business Additional Requirements for Business students completing any Bachelor of Science major).
- Arts and Humanities (6 credits)
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
- Social and Behavioral Sciences (6 credits)
    - **Recommended:** ECO 2010 - Principles of Macroeconomics (required in the Business Core for Business students completing any Bachelor of Science major)
    - **Recommended:** ECO 2020 - Principles of Microeconomics (required in the Business Core for Business students completing any Bachelor of Science major)
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies and Social Justice Requirement: 0 or 3 credits

- The College of Business encourages business majors to select from the following ESSJ courses. If applicable, we recommend choosing a course within your major, as "infinite dipping" allows the course to count in multiple areas of your degree program. If you have any questions, please contact an advisor.
    - ECO 3600 - Economics of Social Justice
    - MKT 3750 - Ethnic Representations in Marketing
- For other courses, students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.
- Many programs include courses that meet this requirement. Students should consult with their advisor to determine what program courses may fulfill this requirement.

College of Business Additional Requirements: 7 credits

- COMM 1010 - Presentational Speaking **Credits:** 3
  or
- COMM 1100 - Fundamentals of Oral Communication **Credits:** 3

- MTH 1110 - College Algebra for Calculus **Credits:** 4
  or
- MTH 1310 - Finite Mathematics for the Management and Social Sciences **Credits:** 4

Business Core: 45 credits

All business majors require foundation course work in all significant areas of business theory and practice. The following courses are required for all students with a BS in a business discipline. Students must maintain a 2.0 average inside the **Business Core**.

- ACC 2010 - Principles of Accounting I **Credits:** 3
- ACC 2020 - Principles of Accounting II **Credits:** 3
- BUS 1850 - Introduction to Business **Credits:** 3 *
- BUS 1950 - Business Communication **Credits:** 3

- BUS 3040 - Global Corporate Social Responsibility and Sustainability **Credits:** 3
  or

- ACC 4440 - Accounting Ethics and Professionalism **Credits:** 3
  or
- ACCM 5000 - Accounting Ethics, Professionalism, and Leadership **Credits**: 3

- CIS 2010 - Foundations of Information Systems **Credits:** 3
- CIS 2320 - Descriptive and Predictive Analytics **Credits:** 3
- CIS 3320 - Prescriptive Analytics **Credits:** 3
- ECO 2010 - Principles of Macroeconomics **Credits:** 3
- ECO 2020 - Principles of Microeconomics **Credits:** 3
- FIN 3300 - Managerial Finance **Credits:** 3
- MKT 3000 - Principles of Marketing **Credits:** 3
- MGT 2210 - Legal Environment of Business I **Credits:** 3
- MGT 3000 - Organizational Management **Credits:** 3
- MGT 4950 - Strategic Management Credits: 3 **
  ** Transfer students that transfer in 6 or more credits of business courses will not need to take BUS 1850 but may take any other College of Business 3-credit hour course that does not appear in their Major or Business Core requirements.*
  *** "C-" or better must be earned in MGT 4950.*

Major Requirements: 24 credits

In order to graduate, students must maintain a 2.0 average inside Business Administration Major required courses.

Business Administration majors will select 21 credits from FIN 2700, CIS 2110, or upper-division (3000 or 4000 level) College of Business prefix courses (ACC, BNK, BUS, CIS, ECO, FIN, MGT, MKT, REL). BSBA elective courses cannot be used to fulfill other requirements in the BSBA major. Students may take a maximum of 9 credits in any one prefix.

An internship with any College of Business Prefix can count towards BSBA elective credit for the major.

~~Business Administration majors will select 21 upper-division credits (3000 or 4000 level) from College of Business prefix courses (ACC, BNK, BUS, CIS, ECO, FIN, MGT, MKT, REL); must be courses not already taken to fulfill other degree requirements. Students may take a maximum of 9 credits in any one prefix.~~

- MGT 4910 - Strategic Leadership **Credits:** 3

Senior Experience: 3 credits

- MGT 4950 - Strategic Management **Credits:** 3 (this course is also required and counted in the Business Core)

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
College of Business Additional Requirements	7 credits
Business Core	45 credits
Major Courses	24 credits
Senior Experience	(counted in business core)
Unrestricted Electives	8-23 credits

Total for the Business Administration Major, B.S.	120 credits

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Program Modification

Business Pathways Certificate

Department of Marketing

College of Business CIP Code: 52.0101

About the Program

The Business Pathways Certificate is a career-focused introduction to the field of business. Introductory business classes provide students with a basic understanding of business functions and career paths, while introducing them to college-level coursework and a university environment. The program also incorporates internships, providing students with meaningful work experience. Students will earn this certificate by successfully completing three academic courses on business topics, a one-credit class on career management, and two semesters of internship.

Student Outcomes

Upon completion, students will be able to:

1. Explain foundational business concepts relevant to organizational decision-making.
2. Apply basic business principles to practical, career-oriented scenarios.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared.

- Requirements for Certificates

Program Requirements

- Students must earn a "C" or better in each course for the certificate.

Required Courses: 10 credits

Introductory business classes will provide students with a basic understanding of business functions and career paths, while introducing them to college-level coursework and a university environment.

- BUS 1850 - Introduction to Business **Credits:** 3
- CIS 1010 - Introduction to Computers **Credits:** 3
- BUS 1500 - Introduction to Career Management **Credits:** 1
- MKT 1260 - Customer Service **Credits:** 3
  or
- MGT 1260 - Foundations of Human Resources **Credits:** 3

Area-specific Internship: 6 credits

Students must complete 3 credits of BUS 1980 Freshman Internship in Business, then choose one discipline-specific second semester internship, where the student can gain insights into possible career paths in their field of interest (select one: ACC, CIS, ECO, FIN, MGT, or MKT).

- BUS 1980 - Freshman Internship in Business **Credits:** 1-6
- ACC 1985 - Introduction to Business Careers Internship **Credits:** 3
- CIS 1985 - Introduction to Business Careers Internship **Credits:** 3
- ECO 1985 - Introduction to Business Careers Internship **Credits:** 3
- FIN 1985 - Introduction to Business Careers Internship **Credits:** 3
- MGT 1985 - Introduction to Business Careers Internship **Credits:** 3
- MKT 1985 - Introduction to Business Careers Internship **Credits:** 3

Summary of Requirements

Required Courses	10 credits
Area-Specific Internship	6 credits
Total for the Business Pathways Certificate	**16 credits**

Program Modification

Digital Marketing Certificate

Department of Marketing

College of Business

CIP Code: 09.0702

About the Program

Digital marketing is a high-growth field focused on utilizing technology, systems, and creative content to develop relationships with current and potential customers. This certificate will enable students to create digital marketing strategies as well as gain practical skills and earn industry-relevant certifications.

Student Outcomes

Upon completion, students will be able to:

1. Explain digital marketing concepts, platforms, tools, and best practices, including social media, content, and analytics.
2. Develop and apply integrated, data-informed digital marketing strategies or campaigns aligned with organizational objectives and target audiences.
3. Analyze digital marketing data and metrics to assess engagement, performance, and conversion outcomes.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared.

- Requirements for Certificates

Program Requirements

- This certificate is a total of 21 credits, including 15 credits of required courses plus 6 credits of elective courses.

- Students must have a minimum cumulative GPA of 2.0 in the certificate.
- The courses cannot be taken pass/fail.
- Some courses in the certificate have prerequisites which must be satisfied.
- At least nine credit hours of the required courses for this certificate must be completed in residency at MSU Denver.

Required Courses: 15 credits

- MKT 3000 - Principles of Marketing **Credits:** 3
- MKT 3200 - Digital Marketing Fundamentals **Credits:** 3
- MKT 3310 - Consumer Behavior **Credits:** 3
- MKT 4200 - Content Marketing **Credits:** 3
- MKT 4540 - Digital Marketing Science **Credits:** 3

Elective Courses: 6 credits

Take six credits from the following:

- CDES 2222 - Fundamentals of Communication Design **Credits:** 3
- CDES 2602 - Interface Design and Development **Credits:** 3
- CDES 3625 - Animation Practices **Credits:** 3
- CIS 2110 - Structured Problem Solving in Information Systems **Credits:** 3
- JMP 2450 - Basic Media Production and Leadership **Credits:** 3
- MKT 3330 - Marketing and Sales Metrics **Credits:** 3
- MKT 3350 - Social Selling **Credits:** 3
- MKT 3980 - Internship in Marketing **Credits:** 1-15
- MKT 4110 - Brand Management **Credits:** 3
- MKT 4300 - Social Media Marketing **Credits:** 3
- MKT 4410 - AI in Marketing: Creativity and Innovation **Credits:** 3

Summary of Requirements

Required Courses	15 credits
Elective Courses	6 credits
Total for the Digital Marketing Certificate	**21 credits**

Program Modification

Digital Marketing Minor

Department of Marketing

College of Business

CIP Code: 09.0702

About the Program

Digital marketing is a high-growth field focused on utilizing technology, systems, and creative content to develop relationships with current and potential customers. This minor will enable students to create digital marketing strategies as well as gain practical skills and earn industry-relevant certifications.

Student Outcomes

Upon completion, students will be able to:

1. Explain digital marketing concepts, platforms, tools, and best practices, including social media, content, and analytics.
2. Develop and apply integrated, data-informed digital marketing strategies or campaigns aligned with organizational objectives and target audiences.
3. Analyze digital marketing data and metrics to assess engagement, performance, and conversion outcomes.

Program Requirements

- Students will take 15 credits of required courses, plus 6 credits of elective courses, for a total of 21 credits for the minor.
- Students must have a minimum cumulative GPA in the minor of 2.0. The courses cannot be taken pass/fail.
- Some courses in the minor have prerequisites which must be satisfied.
- At least nine credit hours of the required courses for this minor must be completed in residency at MSU Denver.

Required Courses: 15 credits

Take each of the following courses (15 credits):

- MKT 3000 - Principles of Marketing **Credits:** 3
- MKT 3200 - Digital Marketing Fundamentals **Credits:** 3
- MKT 3310 - Consumer Behavior **Credits:** 3
- MKT 4200 - Content Marketing **Credits:** 3
- MKT 4540 - Digital Marketing Science **Credits:** 3

Elective Courses: 6 credits

Take six credits from the following:

- CDES 2222 - Fundamentals of Communication Design **Credits:** 3
- CDES 2602 - Interface Design and Development **Credits:** 3
- CDES 3625 - Animation Practices **Credits:** 3
- CIS 2110 - Structured Problem Solving in Information Systems **Credits:** 3
- JMP 2450 - Basic Media Production and Leadership **Credits:** 3
- MKT 3330 - Marketing and Sales Metrics **Credits:** 3
- MKT 3350 - Social Selling **Credits:** 3
- MKT 3980 - Internship in Marketing **Credits:** 1-15
- MKT 4110 - Brand Management **Credits:** 3
- MKT 4300 - Social Media Marketing **Credits:** 3
- MKT 4410 - AI in Marketing: Creativity and Innovation **Credits:** 3

Summary of Requirements

Required Courses	15 credits
Elective Courses	6 credits
Total for the Digital Marketing Minor	**21 credits**

Program Modification

Marketing Minor

Department of Marketing

College of Business CIP Code: 52.1401

About the Program

- A minor in Marketing gives students a broad set of skills and knowledge that can be applied in any marketing setting.

Student Outcomes

Upon completion of the Marketing Minor, students will be able to:

1. Identify and apply the stages of the consumer decision process.
2. Demonstrate an understanding of the elements of segmentation, targeting, and positioning as a means of making marketing decisions.
3. Identify and apply the principles of the marketing mix.

Program Requirements

- This minor is a total of 18 credits.
- Students must have a minimum cumulative GPA in the minor of 2.0.
- The courses cannot be taken pass/fail.
- Some courses in the minor have prerequisites which must be satisfied.
- At least nine credit hours of the required courses for this minor must be completed in residency at MSU Denver.

Required Courses: 9 credits

- BUS 1950 - Business Communication **Credits:** 3
- MKT 3000 - Principles of Marketing **Credits:** 3
- MKT 3310 - Consumer Behavior **Credits:** 3

Elective Courses: 9 credits

Complete the following MKT electives:

- 3 elective credits of any course with the MKT prefix
- 3 elective credits of any upper division course (3000 or 4000 level) with the MKT prefix
- 3 elective credits of any 4000-level course with the MKT prefix

Summary of Requirements

Required Courses	9 credits
Elective Courses	9 credits
Total for the Marketing Minor	**18 credits**

Program Modification

Professional Selling Major, B.A.

Department of Marketing

Available Program Format(s): Online, In-Person, Hybrid

College of Business

CIP Code: 52.1804

About the Program

The B.A. in Professional Selling is a specialized curriculum designed to equip students with the necessary skills to launch careers in sales. The program emphasizes the professional selling process, the importance of trust and relationships, value creation and communication, sales enablement technology, and what to expect from a career. In addition to sales-specific coursework, students will complete business courses and additional requirements that provide a background across business functions. The major offers flexibility for students to apply elective credits to a certificate or minor to specialize in an area of sales. The Center for Professional Selling is recognized as a "Top University for Sales Education" by the Sales Education Foundation and is accredited as a full member by the University Sales Center Alliance.

Student Outcomes

Upon completion of the Professional Selling Major, B.A., students will be able to:

1. Assess a sales opportunity by asking questions
2. Develop appropriate responses to buyer objections
3. Propose next steps to advance the close

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.
- To earn a Bachelor of Arts degree in Professional Selling, a student must successfully complete 30 or more credit hours of business coursework at MSU Denver. This 30-hour residency requirement can be met by completing any business courses with the prefix ACC, ACCM, BNK, BUS, CIS, ECO, FIN, MGT, MKT, and REL. A student must complete at least twelve (12) upper-division semester hours in Marketing at MSU Denver.
- A grade point average of 2.0 or better is required for each course in this program (i.e., Professional Selling major requirements and electives) to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
    - **Recommended:** COMM 1010 - Presentational Speaking or COMM 1100 - Fundamentals of Oral Communication (one of these courses required in the prerequisites section)
- Quantitative Literacy (3 credits)
    - **Recommended:** MTH 1210 - Introduction to Statistics* or MTH 1310 - Finite Mathematics for the Management and Social Sciences* (one of these courses required in the prerequisites section)
- Arts and Humanities (6 credits)
- Historical (3 credits)

- Natural and Physical Sciences (6 credits)
- Social and Behavioral Sciences (6 credits)
    - **Recommended:** ECO 2010 - Principles of Macroeconomics and ECO 2020 - Principles of Microeconomics (these courses required in the prerequisites section)
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.
- Many programs include courses that meet this requirement. Students should consult with their advisor to determine what program courses may fulfill this requirement.

Required Prerequisites: 13 credits

- COMM 1010 - Presentational Speaking **Credits:** 3
  or
- COMM 1100 - Fundamentals of Oral Communication **Credits:** 3

- ECO 2010 - Principles of Macroeconomics **Credits:** 3
- ECO 2020 - Principles of Microeconomics **Credits:** 3

- MTH 1210 - Introduction to Statistics **Credits:** 4
  or
- MTH 1310 - Finite Mathematics for the Management and Social Sciences **Credits:** 4

  ** MTH 1110 or MTH 1400 is acceptable for transfer students or students changing their major. Consult with the Department of Mathematics and Statistics on substitutions.*

Professional Selling Major Requirements: 48 credits

A grade point average of 2.0 or better is required for all courses in the Professional Selling Major to count toward the bachelor's degree.

Students should note that programs differ in the minimum grade required.

- ACC 1010 - Fundamentals of Accounting **Credits:** 3
  or
- ACC 2010 - Principles of Accounting I **Credits:** 3

- BUS 1850 - Introduction to Business **Credits:** 3 *
- BUS 1950 - Business Communication **Credits:** 3
- BUS 3040 - Global Corporate Social Responsibility and Sustainability **Credits:** 3
- CIS 2010 - Foundations of Information Systems **Credits:** 3
- FIN 2250 - Personal Money Management Credits: 3
  or
- FIN 3150 - Personal Financial Planning **Credits:** 3
- MGT 2210 - Legal Environment of Business I **Credits:** 3
- MGT 3000 - Organizational Management **Credits:** 3
- MKT 2250 - Introduction to Sales **Credits:** 3
- MKT 3000 - Principles of Marketing **Credits:** 3

- MKT 3160 - Sales Leadership **Credits:** 3
- MKT 3250 - Professional Selling **Credits:** 3
- MKT 3320 - Inside Sales **Credits:** 3
- MKT 3330 - Marketing and Sales Metrics **Credits:** 3
- MKT 3350 - Social Selling **Credits:** 3
- MKT 3750 - Ethnic Representations in Marketing **Credits:** 3

** Transfer students that transfer in 6 or more credits of business courses will not need to take BUS 1850 but may take any other College of Business 3-credit hour course that does not appear in their Major or Business Core requirements.*

Professional Selling Elective Requirements: 12 credits

A grade point average of 2.0 or better is required for all courses in the Professional Selling Electives to count toward the bachelor's degree.

Twelve credit hours of any upper-division ~~upper division~~ MKT prefix courses and/or courses from the approved list~~:~~. MKT 3981 Internship in Sales can also be used as an elective.

- MKT 3000-4999 Upper Division Marketing Courses
- MKT 1260 - Customer Service **Credits:** 3
- COMM 3010 - Business and Professional Speaking **Credits:** 3
- MGT 3530 - Human Resources Management **Credits:** 3
- MGT 4050 - Supply Chain Management **Credits:** 3
- MGT 4620 - Performance Management and Reward Systems **Credits:** 3
- MGT 4640 - Employee Training and Development **Credits:** 3

Senior Experience: 3 credits

- MKT 4250 - Advanced Selling **Credits:** 3

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Prerequisite Courses	13 credits
Major Requirements	48 credits
Major Electives	12 credits
Senior Experience	3 credits
Unrestricted Electives	8-23 credits
Total for the Professional Selling Major, B.S.	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Program Modification

Sales Certificate

Department of Marketing

College of Business CIP Code: 52.1401

About the Program

The Sales Certificate offers marketing majors, students of all other majors and returning students (seeking professional/continued education) an opportunity to add a sales component to their degree program.

Student Outcomes

Upon completion, students will be able to:

1. Assess a sales opportunity by asking questions.
2. Develop appropriate responses to buyer objections.
3. Propose next steps to advance the close.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared.

- Requirements for Certificates

Program Requirements

- This certificate is a total of 15 credits.
- Twelve credits of upper-division, marketing courses are required.
- Twelve credits must be completed at MSU Denver.
- An internship is recommended for students with limited sales experience.

Required Courses: 9 credits

- MKT 3160 - Sales Leadership **Credits:** 3
- MKT 3250 - Professional Selling **Credits:** 3
- MKT 4250 - Advanced Selling **Credits:** 3

Elective Courses: 6 credits

- HLDR 3300 - Hospitality Marketing and Sales **Credits:** 3
- MKT 1260 - Customer Service **Credits:** 3
- MKT 2250 - Introduction to Sales **Credits:** 3
- MKT 3000 - Principles of Marketing **Credits:** 3
- MKT 3300 - Marketing of Services **Credits:** 3
- MKT 3320 - Inside Sales **Credits:** 3
- MKT 3330 - Marketing and Sales Metrics **Credits:** 3
- MKT 3350 - Social Selling **Credits:** 3
- MKT 3610 - Business-to-Business Marketing **Credits:** 3
- MKT 3750 - Ethnic Representations in Marketing **Credits:** 3
- MKT 3820 - Fundraising Strategies for Nonprofit Organizations **Credits:** 3

- MKT 3981 - Internship in Sales **Credits:** 1-15

Summary of Requirements

Required Courses	9 credits
Elective Courses	6 credits
Total for the Sales Certificate	**15 credits**

Program Modification

Sales Minor

Department of Marketing

College of Business CIP Code: 52.1804

About the Program

The sales minor is a specialized curriculum designed to equip students with the necessary skills to launch careers in sales. The program emphasizes the professional selling process, the importance of trust and relationships, value creation and communication, sales enablement technology, and what to expect from a career. The minor is for both business and non-business majors (except Professional Selling and Marketing).

Student Outcomes

Upon completion, students will be able to:

1. Assess a sales opportunity by asking questions.
2. Develop appropriate responses to buyer objections.
3. Propose next steps to advance the close.

Program Requirements

- Students will take four 3-credit required courses, plus two 3-credit electives, for a total of 18 credits for the minor.
- Students must have a minimum cumulative GPA in the minor of 2.0.
- The courses cannot be taken pass/fail.
- Some courses in the minor have prerequisites which must be satisfied.
- At least nine credit hours of the required courses for this minor must be completed in residency at MSU Denver.
- An internship is recommended for students with limited sales experience.
- Twelve credits of upper-division, marketing courses are required; twelve credits must be completed at MSU Denver.

Required Courses: 12 credits

- MKT 3000 - Principles of Marketing **Credits:** 3
- MKT 3160 - Sales Leadership **Credits:** 3
- MKT 3250 - Professional Selling **Credits:** 3
- MKT 4250 - Advanced Selling **Credits:** 3

Elective Courses: 6 credits

- MKT 1260 - Customer Service **Credits:** 3
- MKT 2250 - Introduction to Sales **Credits:** 3
- MKT 3300 - Marketing of Services **Credits:** 3
- MKT 3320 - Inside Sales **Credits:** 3
- MKT 3330 - Marketing and Sales Metrics **Credits:** 3
- MKT 3350 - Social Selling **Credits:** 3
- MKT 3610 - Business-to-Business Marketing **Credits:** 3
- MKT 3750 - Ethnic Representations in Marketing **Credits:** 3
- MKT 3820 - Fundraising Strategies for Nonprofit Organizations **Credits:** 3
- MKT 3981 - Internship in Sales **Credits:** 1-15

Summary of Requirements

Required Courses	12 credits
Elective Courses	6 credits
Total for the Sales Minor	**18 credits**

College of Health and Human Sciences

Department of Criminal Justice and Criminology

Program Modification

Graduate Certificate of Cyber Defense

The Graduate Certificate of Cyber Defense will educate students in the areas most important to securing any organization. It will include an overview of computer security infrastructure, delineating both the existing threats, and those emerging from social media, the Internet of Things, and threats to basic infrastructure. Network security will be covered including firewalls, Virtual Private Networks, and securing wireless networks. Multiple layers of the network will be covered, including deep-packet inspection. Intrusion prevention, detection, analysis, and recovery will also be addressed from both a host and network point of view. MSU Denver's Graduate Certificate of Cyber Defense is an interdisciplinary certificate that combines the Departments of Criminal Justice and Criminology; Computer Information Systems and Business Analytics; and Computer Sciences.

The Graduate Certificate of Cyber Defense is a stackable program. Graduate credits earned in this certificate program may count toward the Master of Science in Cybersecurity degree (CYBM) at MSU Denver.

Admission to the Graduate Certificate of Cyber Defense:

To be admitted to the Graduate Certificate of Cyber Defense, candidates must:

- Submit a graduate application and application fee
- Submit a curriculum vitae or resume
- Submit a 1-2-page personal statement
- Hold a baccalaureate degree from an accredited college or university
- Submit official transcripts from all institutions of higher education previously attended. A minimum undergraduate GPA of 3.0 on a scale of 4.0 is required.

All submitted documentation will be reviewed by the CYBM Admissions Committee for a final decision.

Application Deadline

The Graduate Certificate of Cyber Defense program is Fall-start only. Please refer to the application section of the graduate certificates website for application deadlines.

Transfer Students

The Graduate Certificate of Cyber Defense does not accept any transfer of credits.

Credit for Prior Learning or Life Experience

The Graduate Certificate of Cyber Defense does not offer any prior learning credits from life and/or work experience.

Testing Out Policy

The Graduate Certificate of Cyber Defense does not provide an option to test out of any coursework.

Readmission Policy

Students not enrolled for three (3) consecutive semesters, including summer, must reapply to the University. Students requesting readmission must be in good academic standing and must submit their application for readmission to the certificate program in which they have been enrolled.

Students who are readmitted into the Graduate Certificate of Cyber Defense program will be held to the policies and curriculum of the later term in which they officially restart the Graduate Certificate of Cyber Defense program.

Certificate Completion

Graduate Certificate Course Registration Eligibility

Only students who are formally accepted into the Graduate Certificate of Cyber Defense program may register for any CYBM graduate certificate courses.

GPA Requirements

Students in the Graduate Certificate of Cyber Defense program must complete the certificate with a cumulative GPA of 3.0 or higher.

No grade lower than a "C" will count toward the certificate. Students receiving a "D" or below will be required to repeat the course.

Duplicative Coursework

All MSU Denver courses in the Graduate Certificate of Cyber Defense courses may count toward the Master of Science in Cybersecurity degree at MSU Denver.

Time Limit on Completion of Certificate

Students must complete the Graduate Certificate of Cyber Defense program within four ~~six (6)~~ calendar years from the semester of initial enrollment.

Total Required Credits: 9

- CYBM 5020 - Cybersecurity Infrastructure **Credits:** 3
- CYBM 5021 - Network and Internet Security **Credits:** 3
- CYBM 5022 - Intrusion Detection and Prevention **Credits:** 3

Program Modification

Graduate Certificate of Cybercrime Investigation

The Graduate Certificate of Cybercrime Investigation will prepare students to excel and advance in a field with increasingly complex challenges. This graduate level certificate is an introduction to the fundamental concepts behind the collection and analysis of the digital evidence left behind in a digital crime scene. The courses will include cybersecurity infrastructure, investigations, cybercriminology and computer and mobile device forensics. MSU Denver's Graduate Certificate of Cybercrime Investigation is an interdisciplinary certificate that combines the Departments of Criminal Justice and Criminology; Computer Information Systems and Business Analytics; Computer Sciences.

The Graduate Certificate of Cybercrime Investigation is a stackable program. Graduate credits earned in this certificate program may count toward the Master of Science in Cybersecurity degree at MSU Denver.

Admission to the Graduate Certificate of Cybercrime Investigation:

To be admitted to the Graduate Certificate of Cybercrime Investigation, candidates must:

- Submit a graduate application and application fee
- Submit a curriculum vitae or resume
- Submit a 1-2-page personal statement
- Hold a baccalaureate degree from an accredited college or university
- Submit official transcripts from all institutions of higher education previously attended. A minimum undergraduate GPA of 3.0 on a scale of 4.0 is required.

All submitted documentation will be reviewed by the CYBM Admissions Committee for a final decision.

Application Deadline

The Graduate Certificate of Cybercrime Investigation program is Fall-start only. Please refer to the application section of the graduate certificates website for application deadlines.

Transfer Students

The Graduate Certificate of Cybercrime Investigation does not accept any transfer of credits.

Credit for Prior Learning or Life Experience

The Graduate Certificate of Cybercrime Investigation does not offer any prior learning credits from life and/or work experience.

Testing Out Policy

The Graduate Certificate of Cybercrime Investigation does not provide an option to test out of any coursework.

Readmission Policy

Students not enrolled for three (3) consecutive semesters, including summer, must reapply to the University. Students requesting readmission must be in good academic standing and must submit their application for readmission to the certificate program in which they have been enrolled.

Students who are readmitted into the Graduate Certificate of Cybercrime Investigation program will be held to the policies and curriculum of the later term in which they officially restart the Graduate Certificate of Cybercrime Investigation program.

Certificate Completion:

Graduate Certificate Course Registration Eligibility

Only students who are formally accepted into the Graduate Certificate of Cybercrime Investigation program may register for any CYBM graduate certificate courses.

GPA Requirements

Students in the Graduate Certificate of Cybercrime Investigation program must complete the certificate with a cumulative GPA of 3.0 or higher.

No grade lower than a "C" will count toward the certificate. Students receiving a "D" or below will be required to repeat the course.

Duplicative Coursework

All MSU Denver courses in the Graduate Certificate of Cybercrime Investigation courses may count toward the Master of Science in Cybersecurity degree at MSU Denver.

Time Limit on Completion of Certificate

Students must complete the Graduate Certificate of Cybercrime Investigation program within four ~~six (6)~~ calendar years from the semester of initial enrollment.

Total Required Credits: 12

- CYBM 5001 - Cybercrime Investigation **Credits:** 3
- CYBM 5002 - Theories of Cybercrime **Credits:** 3
- CYBM 5020 - Cybersecurity Infrastructure **Credits:** 3
- CYBM 5023 - Computer and Mobile Device Forensics **Credits:** 3

Program Modification

Graduate Certificate of Cybersecurity Leadership

The Graduate Certificate of Cybersecurity Leadership aims to provide technology leaders with a deep understanding of cyber security's impact on digital life and to empower cybersecurity leaders with tools for safer and more productive working environments. Students will acquire a global perspective on cybersecurity and information security topics. The integrated learning experience will allow students to advance in their professional area, and cooperate with others with diverse backgrounds from technology, business, and law enforcement. MSU Denver's Graduate Certificate of Cyber Defense is an interdisciplinary certificate that combines the Departments of Criminal Justice and Criminology; Computer Information Systems and Business Analytics; and Computer Sciences.

The Graduate Certificate of Cybersecurity Leadership is a stackable program. Graduate credits earned in this certificate program may count toward the Master of Science in Cybersecurity degree at MSU Denver.

Admission to the Certificate of Cybersecurity Leadership

To be admitted to the Graduate Certificate of Cybersecurity Leadership, candidates must:

- Submit a graduate application and application fee
- Submit a curriculum vitae or resume
- Submit a 1-2-page personal statement
- Hold a baccalaureate degree from an accredited college or university
- Submit official transcripts from all institutions of higher education previously attended. A minimum undergraduate GPA of 3.0 on a scale of 4.0 is required.

All submitted documentation will be reviewed by the CYBM Admissions Committee for a final decision.

Application Deadline

The Graduate Certificate of Cybersecurity Leadership program is Fall-start only. Please refer to the application section of the graduate certificates website for application deadlines.

Transfer Students

The Graduate Certificate of Cybersecurity Leadership does not accept any transfer of credits.

Credit for Prior Learning or Life Experience

The Graduate Certificate of Cybersecurity Leadership does not offer any prior learning credits from life and/or work experience.

Testing Out Policy

The Graduate Certificate of Cybersecurity Leadership does not provide an option to test out of any coursework.

Readmission Policy

Students not enrolled for three (3) consecutive semesters, including summer, must reapply to the University. Students requesting readmission must be in good academic standing and must submit their application for readmission to the certificate program in which they have been enrolled.

Students who are readmitted into the Graduate Certificate of Cybersecurity Leadership program will be held to the policies and curriculum of the later term in which they officially restart the Graduate Certificate of Cybersecurity Leadership program.

Certificate Completion:

Graduate Certificate Course Registration Eligibility

Only students who are formally accepted into the Graduate Certificate of Cybersecurity Leadership program may register for any CYBM graduate certificate courses.

GPA Requirements

Students in the Graduate Certificate of Cybersecurity Leadership program must complete the certificate with a cumulative GPA of 3.0 or higher.

No grade lower than a "C" will count toward the certificate. Students receiving a "D" or below will be required to repeat the course.

Duplicative Coursework

All MSU Denver courses in the Graduate Certificate of Cybersecurity Leadership courses may count toward the Master of Science in Cybersecurity degree at MSU Denver.

Time Limit on Completion of Certificate

Students must complete the Graduate Certificate of Cybersecurity Leadership program within four ~~six (6)~~ calendar years from the semester of initial enrollment.

Required Courses

Total 9 credits

- CYBM 5205 - Information Systems Strategy Planning **Credits:** 3
- CYBM 5242 - Security Risk Analysis and Risk Management **Credits:** 3
- CYBM 5248 - Information Assurance **Credits:** 3

Program Modification

STEMpath Cybersecurity Certificate

MSU Denver's Graduate STEMpath Certificate of Cybersecurity is an interdisciplinary program that combines the knowledge of cyber laws/policies, advanced computer science and information systems solutions for individuals not seeking a Master of Science in Cybersecurity (CYBM) but want to teach cybersecurity classes to K-12 level students. MSU Denver offers this certificate to current teachers with an existing baccalaureate degree who teach in a K-12 system. Neither the Graduate Record Exam (GRE) nor any graduate placement test are not required for this certificate.

For students enrolled in this certificate, the cost for tuition will be the same as the CYBM program. Students with similar courses in their prior experience may request that courses be transferred to meet part of the certificate requirements.

This is a 24-credit hour certificate.

Admission to the Graduate STEMpath Certificate of Cybersecurity

To be considered for admission to the Graduate STEMpath Certificate of Cybersecurity candidates must:

- Submit a graduate application and application fee
- Be a current K-12 schoolteacher that has been approved by their school district or their representative - paperwork for this requirement must be submitted
- Hold a baccalaureate degree from an accredited college or university.
- Submit official transcripts from all institutions of higher education previously attended. A minimum undergraduate GPA of 3.0 on a scale of 4.0 is required.

Application Deadline

The Graduate STEMpath Certificate of Cybersecurity is Fall-start only, please refer to the graduate certificates website for the application deadline.

Credit for Prior Learning or Life Experience

The Graduate STEMpath Certificate of Cybersecurity allows for up to 9 credit hours of prior learning experience in the following areas:

- Career literacy and workforce readiness for the fields of Computer Science, Information Technology, and Cybersecurity with an emphasis on equity and accessibility in the classroom
- Training to implement a culture of innovation through strategic thinking
- Training in information science

Testing Out Policy

The Graduate STEMpath Certificate of Cybersecurity does provide an option to test out of 9 credit hours of coursework at the graduate level if they have experience, knowledge, and skills in the above three areas.

For this certificate, students can test out or receive prior learning credit for a total of 9 credit hours. They cannot combine these paths.

These certificate courses are not transferable to the Master of Science in Cybersecurity program.

Readmission Policy

Students who seek readmission and are in good standing should contact the Cybersecurity Program Manager at cybersecurityprograms@msudenver.edu.

Degree Completion

Graduate Course Registration Eligibility

Only students who are formally accepted into the Graduate STEMpath Certificate of Cybersecurity Certificate program can register for any Graduate STEMpath Certificate of Cybersecurity Certificate courses. Students must complete the Graduate Certificate program within four calendar years from the term they initially enroll.

GPA Requirements

Students in the Graduate STEMpath Certificate of Cybersecurity must complete the certificate with a cumulative GPA of 3.0 or higher. No grade lower than a "C" will count toward the certificate. Students receiving a "D" or below will be required to repeat the course.

Duplicative Coursework

The Graduate STEMpath Certificate of Cybersecurity does not allow any course to count toward either the Bachelor of Science in Cybersecurity or the Master of Science in Cybersecurity.

Grades and Notations

The Graduate STEMpath Certificate of Cybersecurity does not grant plus and minus grades. Students should refer to the Academic Policies and Procedures section of the Graduate Catalog for a listing of all grades and notations including incomplete and withdrawals.

Students who have an incomplete notation should contact the Cybersecurity Program Manager at cybersecurityprograms@msudenver.edu.

Teaching Cybersecurity

These courses allow students to understand how to teach cybersecurity topics to K-12 students. Students with similar courses in their prior experience may request that courses be transferred to meet this part of the certificate requirements.

- CYBM 5500 - CYBM Equity Center Career Literacy **Credits:** 3
- CYBM 5501 - CYBM Equity Center Design Thinking **Credits:** 3
- CYBM 5502 - CYBM Equity Center Information Science **Credits:** 3

Externship and Field Work

These courses help develop the hands on skills needed to demonstrate cybersecurity practices to high school students.

- CYBM 5506 - CYBM Equity Center Externship **Credits:** 3
- CYBM 5507 - CYBM Externship Part II **Credits:** 3

Basics of Programming, Networking, and Cybersecurity

- CYBM 5503 - Cybersecurity Regulations and Laws **Credits:** 3
- CYBM 5505 - Information Technology Systems **Credits:** 3
- CYBM 5600 - Cybersecurity Applications **Credits:** 3

Total Credit Hours

24 credit hour certificate

Department of Health Professions

Program Modification

Lifestyle Medicine Minor

Department of Health Professions

College of Health and Human Sciences CIP Code: 51.9999

About the Program

The Lifestyle Medicine minor assists students interested in learning how positive behavior changes to improve health and quality of life through nutritious eating, physical activity, stress reduction, sleep habits, tobacco cessation, social connection, and other health supporting behaviors. The minor will prepare students to incorporate the principals of evidence-based lifestyle medicine in health and wellness related careers. The Lifestyle Medicine minor contains required core courses along with numerous elective courses so that students can tailor the minor to meet specific career and personal goals. Potential majors to complement this minor include but are not limited to Public Health, Health Care Management, Nutrition, Aging Services Leadership, and Nursing. ~~Potential majors to complement this minor include but are not limited to Integrative Health Care, Recreation Professions, Health Care Management, Nutrition, Health Care Professional Services, and Nursing.~~ The minor is also applicable to individuals who plan to apply to graduate programs in healthcare.

Program Requirements

- This minor is a total of 18 credits: 9 required credit hours and 9 elective credit hours.

Advising:

- Students can contact the Department of Health Professions for advising at 303-615-1200.
- New or transfer students interested in the Lifestyle Medicine minor can also seek advising through the College of Health and Human Sciences Advising Office at 303-615-1099.

Required Courses: 9 credits

- PUB 3850 - Lifestyle Medicine **Credits:** 3
- PUB 4700 - Community Health Education and Lifestyle Medicine **Credits:** 3
- PUB 4800 - Lifestyle Medicine Across Gender and Lifespan **Credits:** 3

Elective Courses: 9 credits

Choose at least 9 credits from the following (at least 3 hours must be upper division). Note: for ITP 2950/HPS 2700 & ITP 4400/HPS 4700 credit will only be given for one prefix: ITP or HPS

- AGE 3800 - Long-Term Care: Managing Across the Continuum **Credits:** 3
- COMM 2020 - Introduction to Health Communication **Credits:** 3
- ESS 1030 - Physical Well-being **Credits:** 1-2
- ESS 1440 - Stress Management Techniques **Credits:** 3
- ESS 2700 - Wellness Coaching I **Credits:** 3
- ESS 3340 - Physiology of Exercise **Credits:** 4
- ESS 4700 - Wellness Coaching II **Credits:** 3
- ESSA 1870 - Stress Management **Credits:** 2

- EXS 1020 - Resistance Training Techniques **Credits:** 3
- EXS 1640 - Physical Fitness Techniques and Programs **Credits:** 3
- HCM 3150 - Health Care Organization and Management **Credits:** 3
- HCM 3500 - Health Care Research Methods **Credits:** 3
- HCM 3700 - Health Disparities in the U.S. **Credits:** 3
- HON 3910 - Honors Colloquium **Credits:** 3
- HON 4950 - Senior Honors Thesis **Credits:** 3
- HON 4951 - Paired Senior Honors Thesis **Credits:** 1
- HSP 3220 - Conflict Resolution and Decision Making **Credits:** 3
- HSP 3470 - Counseling the Substance Abuser **Credits:** 4
- HSP 3550 - Intimate Partner Violence **Credits:** 3
- HSP 3575 - Motivational Interviewing for Health Professionals **Credits:** 3
- HSP 4290 - Posttraumatic Stress Disorder and Trauma Informed Care **Credits:** 1
- PUB 1500 - Dynamics of Health **Credits:** 3
- PUB 2950 - Wellness Coaching I **Credits:** 3
- ITP 3111 - Aging Warriors: Understanding the Health Issues of Aging Men **Credits:** 3
- PUB 3700 - Physiology of Aging **Credits:** 3
- PUB 4400 - Wellness Coaching II **Credits:** 3
- PUB 4950 - Community Coaching for Health **Credits:** 3
- NUT 2040 - Introduction to Nutrition **Credits:** 3
- NUT 3040 - Nutrition Concepts and Controversies **Credits:** 3
- NUT 3050 - Concepts of Lifecycle Nutrition **Credits:** 3
- NUT 3200 - Nutrition and Sports Performance **Credits:** 3
- NUT 3400 - Nutrition and Weight Management **Credits:** 3
- PSY 2120 - Brain and Behavior **Credits:** 3
- PSY 2150 - Positive Psychology **Credits:** 3
- PSY 3410 - Health Psychology **Credits:** 3
- PSY 3440 - Cravings and Addictions **Credits:** 3
- PUB 1000 - Principles of Public Health **Credits:** 3
- PUB 1010 - Health Career Foundations **Credits:** 3
- PUB 2000 - Community Health Worker Fundamentals **Credits:** 3
- PUB 2700 - Holistic Dimensions of Wellness **Credits:** 3
- PUB 2820 - Anger In Men: A Whole Approach **Credits:** 3
- PUB 3000 - Health Behavior Theory and Practice **Credits:** 3
- PUB 3010 - Community Health Survey, Assessment and Health Improvement Planning **Credits:** 3
- PUB 3020 - Introduction to Epidemiology in Public Health **Credits:** 3
- PUB 3030 - Essentials of Environmental Health in Public Health Practices **Credits:** 3
- PUB 3040 - Men's Health **Credits:** 3
- PUB 3200 - Ethics in Health Care **Credits:** 3
- PUB 3450 - Dynamics of Disease **Credits:** 3
- PUB 3800 - Stress and Sleep: Impact on Health and Disease **Credits:** 3
- PUB 3810 - Men Across Cultures **Credits:** 3
- PUB 3911 - Fathers and Health: A Global Perspective **Credits:** 3
- PUB 4000 - Health Policy - Practice and Development **Credits:** 3
- PUB 4010 - Health Program Planning, Implementation, and Evaluation **Credits:** 3
- PUB 4015 - Pediatric Holistic Health **Credits:** 3
- PUB 4020 - Peer Health Education- Field Experience **Credits:** 3
- PUB 4030 - Advanced Community Health Worker **Credits:** 3
- PUB 4100 - Women's Holistic Health **Credits:** 3
- PUB 4300 - Botanical Pharmacology **Credits:** 3
- PUB 4999 - Applied Learning with Lifestyle Medicine **Credits:** 3
- RST 1550 - Food Fundamentals **Credits:** 3
- RST 3530 - Healthy International Cooking **Credits:** 3

- RST 3875 - Food Preservation Techniques **Credits:** 3
- RST 3905 - Farm to Table Sustainability **Credits:** 3
- SPS 4500 - Teaching Assistantship in the College of Professional Studies **Credits:** 3
- SWK 1010 - Introduction to Social Work **Credits:** 3
- SWK 1600 - Community Engagement and Civic Responsibility **Credits:** 3
- SWK 3010 - Social Work Practice with Children and Youth **Credits:** 3
- SWK 3030 - Social Work with Older People **Credits:** 3
- SWK 3120 - Unraveling Inequalities in Social Work Practice **Credits:** 3
- SWK 3150 - Social Work and Child Maltreatment **Credits:** 3
- SWK 3500 - Social Work Practice with LGBTQ People **Credits:** 3
- SWK 4430 - Partnering with Families for Change **Credits:** 3
- UA 2735 - Urban Vegetable Farming **Credits:** 3
- ESSA Prefix Courses: up to 4 credits

Summary of Requirements

Required Courses	9 credits
Elective Courses	9 credits
Total for the Lifestyle Medicine Minor	**18 credits**

Program Modification

Public Health Major, B.A.

Department of Health Professions

Available Program Format(s): In-Person, Hybrid, Online

College of Health and Human Sciences

Program Modification

Public Health Minor

Department of Health Professions

College of Health and Human Sciences

About the Program

The undergraduate minor in Public Health will provide students with a basic understanding of the Public Health field by exploring social, cultural, and biological dimensions of health. By completing the public health minor curriculum, students will have skills that can be applied to a Public Health setting and functions such as monitoring and assessing the health of communities, identifying health problems and prioritizing them for better health outcomes, and implementing evidence-based strategies to promote population health that can be performed with a high level of expertise.

Students that graduate with a Public Health minor will be prepared for many entry-level public health positions, while also providing the background knowledge required to pursue a broad range of graduate degree programs, including a master's degree of Public Health (MPH). Providing this new minor in Public Health will build out student opportunities to connect broadly to the healthcare field, even when they are not public health majors. There are a variety of natural, social, and behavioral science fields that seek out individuals with knowledge and experience in the Public Health field as well as their specific area of training. Examples of such fields are behavioral health, social work, law and health policy, medicine, dentistry, pharmacy, nursing, health administration, and health services research.

We recommend that you meet with a Department of Health Professions advisor once per semester, prior to registration, or, at least once a year. Advisors can help plan your schedule or courses, review Degree Progress reports, discuss minors, assess your status regarding graduation requirements, and provide career counseling, etc.

Program Requirements

- This minor is a total of 18 credits.
- It is highly recommended that General Studies and Support Courses be completed prior to enrolling in Public Health courses.
- Students must earn a grade of "C- or higher" in all courses required for the minor in order to progress through the program. Courses with grades of less than "C-" must be repeated prior to the student taking any other courses for which the first course is a prerequisite.

Required Courses: 6 credits

Public Health Foundation and Study in Epidemiology

- PUB 1000 - Principles of Public Health **Credits:** 3
- PUB 3020 - Introduction to Epidemiology in Public Health **Credits:** 3

Study in Health Science Course: 3 credits

Pick one of the following course options:

- PUB 1500 - Dynamics of Health **Credits:** 3
- PUB 3450 - Dynamics of Disease **Credits:** 3

Public Health Foci Courses: 6-7 credits

Pick two of the following course options:

- HCM 3500 - Health Care Research Methods **Credits:** 3
- MTH 1210 - Introduction to Statistics **Credits:** 4
- PSY 2310 - Statistics for the Social and Behavioral Sciences **Credits:** 3
- PUB 2000 - Community Health Worker Fundamentals **Credits:** 3
- PUB 3000 - Health Behavior Theory and Practice **Credits:** 3
- PUB 3010 - Community Health Survey, Assessment and Health Improvement Planning **Credits:** 3
- PUB 3030 - Essentials of Environmental Health in Public Health Practices **Credits:** 3
- PUB 4000 - Health Policy - Practice and Development **Credits:** 3
- PUB 4010 - Health Program Planning, Implementation, and Evaluation **Credits:** 3

Social and Applied Science Elective Courses: 2-3 credits

Pick from the following course options to complete the minor with 18 credits:

- AGE 1010 - Introduction to Aging and Long-Term Care Services **Credits:** 3
- AGE 2020 - Ageism and Ableism in Society **Credits:** 3
- AGE 3030 - Aging Services: Current Topics, Trends, and Future Considerations **Credits:** 3
- AGE 3800 - Long-Term Care: Managing Across the Continuum **Credits:** 3
- ANT 1010 - Introduction to Biological Anthropology **Credits:** 3
- BIO 1000 - Human Biology for Non-Majors **Credits:** 3
- HCM 2010 - Global Health Systems **Credits:** 3
- HCM 3100 - Entrepreneurship in Health **Credits:** 1
- HCM 3150 - Health Care Organization and Management **Credits:** 3
- HCM 3200 - Managing Quality in Health Care **Credits:** 2

- HCM 3400 - Human Resources Management in Health Care **Credits:** 3
- HCM 3500 - Health Care Research Methods **Credits:** 3
- HCM 3550 - Leadership in Health Care **Credits:** 1
- HCM 3700 - Health Disparities in the U.S. **Credits:** 3
- HLDR 1100 - Colorado Tourism and Recreation **Credits:** 3
- HSP 1010 - Introduction to Human Services and Counseling **Credits:** 3
- HSP 1020 - Introduction to Trauma Informed Care **Credits:** 3
- HSP 2010 - Introduction to High-Impact Nonprofit Organizations **Credits:** 3
- ~~HSP 3460 - Addiction, Immunity, and Infectious Diseases **Credits:** 2~~
- HSP 3860 - Social Entrepreneurship **Credits:** 3
- HSP 4425 - Pharmacology of Drugs and Related Infectious Diseases **Credits:** 3
- PUB 1500 - Dynamics of Health **Credits:** 3
- PUB 3700 - Physiology of Aging **Credits:** 3
- MTH 1210 - Introduction to Statistics **Credits:** 4
- NUT 2040 - Introduction to Nutrition **Credits:** 3
- NUT 3350 - Global Nutrition and Health **Credits:** 3
- NUT 3500 - Food Safety **Credits:** 3
- NUT 4210 - Community Nutrition **Credits:** 3
- PSY 2310 - Statistics for the Social and Behavioral Sciences **Credits:** 3
- PUB 1700 - Medical Terminology **Credits:** 3
- PUB 2000 - Community Health Worker Fundamentals **Credits:** 3
- PUB 2700 - Holistic Dimensions of Wellness **Credits:** 3
- PUB 3000 - Health Behavior Theory and Practice **Credits:** 3
- PUB 3010 - Community Health Survey, Assessment and Health Improvement Planning **Credits:** 3
- PUB 3030 - Essentials of Environmental Health in Public Health Practices **Credits:** 3
- PUB 3040 - Men's Health **Credits:** 3
- PUB 3200 - Ethics in Health Care **Credits:** 3
- PUB 3450 - Dynamics of Disease **Credits:** 3
- PUB 3800 - Stress and Sleep: Impact on Health and Disease **Credits:** 3
- PUB 3850 - Lifestyle Medicine **Credits:** 3
- PUB 4000 - Health Policy - Practice and Development **Credits:** 3
- PUB 4010 - Health Program Planning, Implementation, and Evaluation **Credits:** 3
- PUB 4030 - Advanced Community Health Worker **Credits:** 3
- PUB 4700 - Community Health Education and Lifestyle Medicine **Credits:** 3
- SLHS 2990 - Introduction to Health Communication **Credits:** 3
- SLHS 3000 - Foundations of Disability Studies through Media **Credits:** 3
- SWK 1600 - Community Engagement and Civic Responsibility **Credits:** 3

Summary of Requirements

Required Courses	6 credits
Study in Health Science Course	3 credits
Public Health Foci Courses	6-7 credits
Social and Applied Science Elective Courses	2-3 credits
Total for the Public Health Minor	**18 credits (minimum)**

Department of Human Services and Counseling

Program Modification

Fire and Emergency Response Administration Major, B.S.

Department of Human Services and Counseling

Available Program Format(s): In-Person, Hybrid, Online

College of Health and Human Sciences

Program Modification

Human Services Major, B.S.

Department of Human Services and Counseling

Available Program Format(s): In-Person, Hybrid, Online

College of Health and Human Sciences

CIP Code: 44.0000

About the Program

Human Services refers to the art and science of helping people. At MSU Denver, students get just the right mix of hands-on experience and challenging study to become consummate and compassionate professionals. The Department of Human Services and Counseling at Metropolitan State University of Denver prepares students to become competent, self-reflective practitioners in the delivery of human services. At the core of the curriculum is an emphasis on experiential learning in the classroom and through intensive field experience and study abroad opportunities. Students can focus on general human services topics, or specific areas such as trauma and high-risk youth. The program also offers a pathway for degree completion for students who currently have paramedic certification. In addition, the department offers an "Early Entry to the Master of Science in Clinical Behavioral Health, Emphasis in Addictions Counseling Pathway" for students who wish to begin their masters program while completing their undergraduate requirements. The department is committed to supporting students to develop high ethical standards and cultural sensitivity while becoming agents for positive change in people's lives and in their communities.

Student Outcomes

1. Students will **evaluate** the scope of conditions that impact all levels of human systems: individual, family, group, community, and society.
2. Students will **explore** the mission and services of local organizations and their role and community impact
3. Students will **examine** their own culture and values as well as those of communities other than their own and the implications for working with diverse communities.
4. Students will **acquire** skills necessary to facilitate change at an individual, family, group, and/or programmatic level.
5. Students will **demonstrate** professional behavior and ethical decision-making skills in the context of the human services/nonprofit sector.
6. Students will **develop** clear professional writing and effective verbal and interpersonal communication skills.
7. Students will **apply** knowledge and skills related to effective direct service delivery and appropriate interventions in their concentration area.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.

- A grade of "C" or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.
- For students in the "Early Entry Master of Science Pathway" A grade of "B-" or better is required in any graduate Human Services and Counseling course to be applied towards their undergraduate and graduate degree requirements.
- Students participate in field experience as part of this major, contributing to professional experience, skill development, networking, and resume-building.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
    - **Recommended:** MTH 1210 - Introduction to Statistics, is recommended for students interested in pursuing a master's degree.
- Arts and Humanities (6 credits)
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
    - **Recommended:** NUT 2040 - Introduction to Nutrition is recommended
- Social and Behavioral Sciences (6 credits)
- Recommended: HSP 1010 - Introduction to Human Services and Counseling can count towards both the major and the General Studies requirements.
- Recommended: HSP 1020 - Introduction to Trauma Informed Care, can count towards both the major and the General Studies requirements.
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 Credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.

Major Required Courses: 45 ~~46~~ credits

- HSP 1010 - Introduction to Human Services and Counseling **Credits:** 3
- HSP 1020 - Introduction to Trauma Informed Care **Credits:** 3
- ~~HSP 2010 - Introduction to High-Impact Nonprofit Organizations **Credits:** 3~~
- HSP 2020 - Small Group Dynamics: Theory and Experience **Credits:** 3 ~~4~~
- HSP 2030 - Theory and Practice of Counseling **Credits:** 3 ~~4~~
- HSP 2040 - Family Systems **Credits:** 3 4
- ~~HSP 2070 - Pre-Field Placement Seminar **Credits:** 1~~
- HSP 3040 - Brief Therapy for Couples **Credits:** 3
- HSP 3220 - Conflict Resolution and Decision Making **Credits:** 3
- HSP 3320 - Psychopathology and the Mental Health Clinician **Credits:** 3
- HSP 3330 - Ethical and Legal Issues in Human Services **Credits:** 3
- HSP 3470 - Counseling the Substance Abuser **Credits:** 3
- HSP 3490 - Multicultural Issues in Human Services **Credits:** 3 4
- HSP 3570 - Case Management in Human Services **Credits:** 3
- ~~HSP 3710 - Research Methods and Program Evaluation in Human Services **Credits:** 4~~
- HSP 3760 - Motivational Interviewing for Client Change **Credits:** 3 ~~3 credits~~
- HSP 4425 - Pharmacology of Drugs and Related Infectious Diseases **Credits:** 3

- HSP 4710 - Critical Issues for Nonprofits **Credits:** 3
- ~~HSP 4040 - Cognitive Behavior Therapy **Credits:** 3~~
- ~~HSP 4320 - Psychopathology and the Mental Health Clinician **Credits:** 4~~

~~Electives: 9 credits~~

~~For electives, students can use any HSP course or select 9 credits from an area of focus:~~

~~Students in the Addictions Counseling and Early Entry concentrations do not complete this requirement.~~

~~Trauma Studies Area of Focus:~~

- ~~HSP 2105 - Foundations of Trauma Counseling **Credits:** 3~~
- ~~HSP 3105 - Exploring the Impact of Trauma Counseling **Credits:** 3~~
- ~~HSP 4105 - Advanced Trauma Counseling Skills **Credits:** 3~~

~~High-Risk Youth Area of Focus:~~

- ~~HSP 3230 - High Risk and Offender Youth **Credits:** 3~~
- ~~HSP 3260 - Systems Serving Youth **Credits:** 2~~
- ~~HSP 3590 - Counseling the Resistive Adolescent Client **Credits:** 2~~
- ~~HSP 4540 - Youth, Drugs, and Gangs **Credits:** 2~~

Senior Experience: 12 ~~10~~ credits

All majors* complete their senior experience requirement through 12 ~~10~~ credits of the following course:

**Note that the Paramedic Pathways students need to complete only 6 ~~5~~ credits of internship.*

- HSP 4840 - Human Services Internship **Credits:** 5-20

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Major Required Courses	45 ~~46~~ credits
~~HSP Electives~~	~~9 credits~~
Senior Experience	12 ~~10~~ credits
Unrestricted Electives	27-36 ~~19-28~~ credits
Total for the Human Services Major, B.S.	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Pathway for Current Paramedics: 24 credits

The Pathway for Current Paramedics is designed for students interested in combining their previous paramedic training with additional academic course work. Students with a current and valid Colorado and/or national Paramedic Certification will receive 24 credits towards their degree requirements.

Paramedic pathway students complete all of the required courses for the major. They will complete 6 hours of Senior Experience through HSP 4840 - Human Services Internship.

~~The following courses are required but are taken during the major required courses.~~

- ~~HSP 2020 - Small Group Dynamics: Theory and Experience **Credits:** 4~~
- ~~HSP 2030 - Theory and Practice of Counseling **Credits:** 4~~
- ~~HSP 2040 - Family Systems **Credits:** 4~~
- ~~HSP 4320 - Psychopathology and the Mental Health Clinician **Credits:** 4~~

Senior Experience: 6 credits

Paramedic Pathway students complete their senior experience requirement through 6 credits of HSP 4840 - Human Services Internship.

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Major Required Courses	45 ~~46~~ credits
~~Major Electives~~	~~9 credits~~
~~Additional Required Human Services Courses~~	~~counted in major~~
Paramedic Certification	24 credits
Senior Experience	6 ~~5~~ credits
Unrestricted Electives	9-18 ~~0-9~~ credits
Total for the Human Services Major, B.S., Paramedic Pathway	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Early Entry to Master in Clinical Behavioral Health, Emphasis in Addictions Counseling Pathway

This pathway allows students to begin their graduate work while completing their undergraduate requirements. Students may apply to the Early Entry Master of Health in Clinical Behavioral Health, Emphasis in Addictions Counseling program after completing 59-65 credit hours in their bachelor's program including all General Studies requirements (33 credits) and specified courses in the department (27 ~~32~~ credits). Any graduate level course counting towards either the undergrad or graduate degree must be completed with a 'B-' or higher. Students may complete their bachelor's degree at 120 credits (through our department if all requirements have been met, or through the Individualized Degree Program, if applicable).

Pre-Application to Master's Program: 27 ~~32~~ credits

Students need to complete all of their general studies courses (33) plus 27 ~~32~~ credits of department courses. HSP 1010 and 1020 can be used to fulfil 3-6 credits of General Studies (Social and Behavioral Sciences)**.**

- HSP 1010 - Introduction to Human Services and Counseling **Credits:** 3
- HSP 1020 - Introduction to Trauma Informed Care **Credits:** 3
- HSP 2030 - Theory and Practice of Counseling **Credits:** 3 ~~4~~

- HSP 2040 - Family Systems **Credits:** 3 4
- HSP 3220 - Conflict Resolution and Decision Making **Credits:** 3
- HSP 3320 - Psychopathology and the Mental Health Clinician Credits: 3
- HSP 3330 - Ethical and Legal Issues in Human Services **Credits:** 3
- HSP 3470 - Counseling the Substance Abuser **Credits:** 3 4
- HSP 3490 - Multicultural Issues in Human Services **Credits:** 3 4
- ~~HSP 4320 - Psychopathology and the Mental Health Clinician **Credits:** 4~~

Application and Bridge Semester: 13 credits

After completing 60 ~~65~~ credits and the required course work, students may apply for the Early Entry master's program. Students complete the regular master's application. Students should take the following courses during the semester in which their application is being reviewed.

- HSP 2010 - Introduction to High-Impact Nonprofit Organizations **Credits:** 3
- HSP 2070 - Pre-Field Placement Seminar **Credits:** 1
- HSP 3050 - Cognitive Behavior Therapy Credits: 3
- ~~HSP 4040 - Cognitive Behavior Therapy **Credits:** 3~~
- Elective Courses: 6 credits

Undergraduate Status Taking Masters Courses: 19-31 credits

Students who are accepted into the program can start taking "dual use" master's classes which will count towards both an undergraduate and graduate degree. Students will remain classified as undergraduate but pay graduate tuition rates for any master's level course. Courses designated (dual purpose) will count towards undergraduate and graduate degree requirements. BHAM courses without this designation (dual purpose) will count only towards graduate degree requirements. Students need a B- or higher in all BHAM courses to count towards both undergraduate and graduate degree requirements.

Students should consult the graduate catalog for further information regarding course information and program requirements at the graduate level.

- BHAM 5001 Advanced Ethical Practice **Credits: 3**
- BHAM 5002 Social and Cultural Foundations **Credits: 3**
- BHAM 5003 Development Across the Lifespan (dual purpose) **Credits: 3**
- BHAM 5004 Career Counseling Theory and Techniques (dual purpose) **Credits: 3**
- BHAM 5005 Theory and Techniques in Helping Relationships **Credits: 3**
- BHAM 5006 Group Counseling Theory and Techniques (dual purpose) **Credits: 3**
- BHAM 5008 Research and Evaluation (dual purpose) **Credits: 3**
- BHAM 5009 Addiction Counseling, Intervention and Prevention I **Credits: 3**
- BHAM 5010 Addiction Counseling, Intervention and Prevention II (dual purpose) **Credits: 3**
- BHAM 5014 Psychopharmacology, Neurobiology, and Infectious Diseases (dual purpose) **Credits: 4**

Senior Experience: 10 credits

Students complete their Senior Experience course through:

- HSP 4840 - Human Services Internship **Credits:** 5-20

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Preapplication Courses	27 ~~32~~ credits

Application and Bridge Courses	13 credits
Dual Purpose Courses	19 credits
Senior Experience	10 credits
Unrestricted Electives	15-24 ~~10-19~~ credits
Total for the Human Services Major, B.S. Early Entry Pathway	120 credits

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Program Modification

Human Services Minor

Department of Human Services and Counseling

College of Health and Human Sciences CIP Code: 44.0000

About the Program

The minor in Human Services complements majors such as Psychology, Human Development, Criminal Justice, Sociology, Chicano Studies, African American Studies and Women's Studies by providing the practical, applied knowledge and skills to work with a variety of client populations. The minor in Human Services is designed to allow you to choose courses that meet your educational and career goals.

Program Requirements

- This minor is a total of 18 credits.
- A grade of "C" or better is required for each course in this program to count towards the bachelor's degree.
- Please see a department advisor to discuss your goals and select classes for your minor.

Required Courses: 6 ~~7~~ credits

- HSP 1010 - Introduction to Human Services and Counseling **Credits:** 3
- HSP 2030 - Theory and Practice of Counseling **Credits:** 3 ~~4~~

Elective Courses: 12 ~~11~~ credits

Complete 12 ~~11~~ credits of HSP electives; 6 credits must be 3000- or 4000-level.

Summary of Requirements

Required Courses	6 ~~7~~ credits
Elective Courses	12 ~~11~~ credits
Total for the Human Services Minor	**18 credits**

Program Modification

Trauma Studies Minor

Department of Human Services and Counseling

College of Health and Human Sciences CIP Code: 44.0000

About the Program

The minor in Trauma Studies complements majors such as Psychology, Fire and Emergency Response, Human Development, Criminal Justice, and Sociology by providing practical knowledge and skills necessary for careers that serve a client population that has experienced trauma. Students will learn about trauma and complex trauma, the impact trauma has on overall functioning as well as treatment interventions and supportive activities for practitioners who work with this population. The minor in Trauma Studies is designed to allow the student to choose courses that meet their educational and career goals as well as prepare them well for graduate study.

Program Requirements

- The student must meet the University's graduation requirements for a baccalaureate degree.
- A letter grade of "C" or better is required in each Human Services and Counseling course.

Required Courses: 15 ~~16~~ credits

- HSP 1010 - Introduction to Human Services and Counseling **Credits:** 3
- HSP 1020 - Introduction to Trauma Informed Care **Credits:** 3
- HSP 2030 - Theory and Practice of Counseling **Credits:** 3 ~~4~~
- HSP 2105 - Foundations of Trauma Counseling **Credits:** 3
- HSP 3105 - Exploring the Impact of Trauma Counseling **Credits:** 3

Electives: 3 ~~2-4~~ credits

Select one course from the list below.

- HSP 3220 - Conflict Resolution and Decision Making **Credits:** 3
- HSP 3320 - Psychopathology and the Mental Health Clinician **Credits:** 3
- ~~HSP 3450 - Crisis Intervention **Credits:** 3~~
- HSP 3490 - Multicultural Issues in Human Services **Credits:** 3 ~~4~~
- HSP 3550 - Intimate Partner Violence **Credits:** 3
- HSP 3940 - Victim Advocacy for Survivors of Interpersonal Violence **Credits:** 3
- HSP 4105 - Advanced Trauma Counseling Skills **Credits:** 3
- ~~HSP 4160 - Human Trafficking **Credits:** 3~~
- ~~HSP 4200 - Child Abuse and Neglect **Credits:** 2~~
- ~~HSP 4320 - Psychopathology and the Mental Health Clinician **Credits:** 4~~
- ~~HSP 4540 - Youth, Drugs, and Gangs **Credits:** 2~~

Summary of Requirements

Required Courses	15 ~~16~~ credits

Elective Course	3 ~~2-4~~ credits
Total for the Trauma Studies Minor	**18 ~~20~~ credits**

Department of Nutrition

Program Modification

Nutrition and Dietetics Major, B.S.

Department of Nutrition — Available Program Format(s): In-Person

College of Health and Human Sciences — CIP Code: 30.1901

About the Program

Metropolitan State University of Denver (MSU Denver) offers a Bachelor of Science degree with a major in Nutrition and Dietetics (NUD). The major includes a didactic program in dietetics (DPD) that has been granted Accreditation by the Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040 ext. 5400, acend@eatright.org.

Students may choose to be enrolled in the Nutrition and Dietetics major (with or without the DPD) **or** the DPD certificate program alone (this requires a bachelor's degree).

To become a registered dietitian nutritionist (RDN), students must complete a bachelor's degree and a master's degree. The accelerated BS to MS concentration is for students who plan on pursuing a Master of Science in Nutrition at MSU Denver. This option allows for 9 credits of coursework to meet the requirements of both the bachelor's and master's degrees and expedites program completion.

The mission of the MSU Denver Department of Nutrition is to prepare diverse students from the Denver Metropolitan area for successful careers in food, nutrition and dietetics by providing quality education that is culturally sensitive and instills a desire for life-long learning.

Student Outcomes

1. Integrate scientific information and translate research into practice.
2. Demonstrate attitudes, values and behaviors aligned with nutrition and dietetics practice.
3. Develop and deliver information, products and services to individuals, groups and populations.
4. Strategically apply principles of management and systems in the provision of services to individuals and organizations.
5. Demonstrate skills and knowledge relevant to leadership potential and professional growth in the field of nutrition and dietetics.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.
- A grade of C- or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
    - **Recommended:** It is recommended that students fulfill this requirement with MTH 1210 - Introduction to Statistics, which is required by the Nutrition and Dietetics major.
- Arts and Humanities (6 credits)
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
    - **Recommended:** It is recommended that students fulfill this requirement by taking BIO 1080 - General Biology I, BIO 1090 - General Biology Laboratory I, CHE 1100 - Principles of Chemistry, and/or CHE 1150 - Principles of Chemistry Laboratory, all of which are required by the Nutrition and Dietetics major.
- Social and Behavioral Sciences (6 credits)
    - **Recommended:** It is recommended that students take PSY 1001 - Introductory Psychology, which is required by the Nutrition and Dietetics major.
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.

Recommended: It is recommended that students fulfill this requirement with NUT 2060 - Nutrition, Food, and Social Justice in the United States, which is offered by the Nutrition Department.

Required Courses: 74 credits

- BIO 1080 - General Biology I **Credits:** 3
- BIO 1090 - General Biology Laboratory I **Credits:** 1
- BIO 2310 - Human Anatomy and Physiology I **Credits:** 4
- BIO 2320 - Human Anatomy and Physiology II **Credits:** 4
- CHE 1100 - Principles of Chemistry **Credits:** 4
- CHE 1150 - Principles of Chemistry Laboratory **Credits:** 1
- CHE 2100 - Introduction to Organic and Biological Chemistry **Credits:** 4
- CHE 2150 - Introduction to Organic and Biological Chemistry Laboratory **Credits:** 1
- HCM 3150 - Health Care Organization and Management **Credits:** 3
- MTH 1210 - Introduction to Statistics **Credits:** 4
- NUT 1800 - Careers in Nutrition and Dietetics **Credits:** 1
- NUT 2040 - Introduction to Nutrition **Credits:** 3
- NUT 3150 - Advanced Nutrition - Macronutrients **Credits:** 3
- NUT 3160 - Advanced Nutrition - Micronutrients **Credits:** 3

- NUT 3200 - Nutrition and Sports Performance **Credits:** 3
  OR
- NUT 3400 - Nutrition and Weight Management **Credits:** 3

- NUT 3300 - Cultural Aspects of Nutrition **Credits:** 3
- NUT 3500 - Food Safety **Credits:** 3
- NUT 3700 - Nutrition Education and Counseling **Credits:** 3
- NUT 4160 - Empowered Leadership in Nutrition **Credits:** 3

- NUT 4200 - Lifecycle Nutrition for Majors **Credits:** 3
- NUT 4210 - Community Nutrition **Credits:** 3
- NUT 4800 - Medical Nutrition Therapy **Credits:** 4
- RST 1200 - Basic Cooking Skills **Credits:** 3
- PSY 1001 - Introductory Psychology **Credits:** 3
- NUT 3110 - Food Science **Credits:** 2
- RST 3110 - Food Science Laboratory **Credits:** 2

Accelerated BS to MS Concentration: 9 credits

This concentration allows students in the Bachelor of Science in Nutrition and Dietetics program who are planning to pursue the Master of Science in Nutrition program to take up to 9 credits of graduate level work during their undergraduate degree in order ~~program credit~~ to accelerate the graduate program. See Department of Nutrition for additional information regarding the Accelerated BS to MS Program.

Students choose up to 9 credits from the following, and are encouraged to seek advising in the Department of Nutrition to ensure efficient course sequencing, scheduling, and eligibility for selected courses.

- NUT 5100 Introduction to Nutrition Research **Credits:** 3
- NUT 5110 Macronutrients in Health and Disease **Credits:** 3
- NUT 5120 Vitamins, Minerals, and Bioactive Compounds in Health and Disease **Credits:** 3
- NUT 5150 Lifecycle Nutrition **Credits:** 3
- NUT 5160 Empowered Leadership in Nutrition **Credits:** 3
- NUT 5170 Nutrition and the Community: Equity, Inclusion, and Access **Credits:** 3
- NUT 5180 Food System and Policy **Credits:** 3
- NUT 5500 Global and Cultural Topics in Nutrition **Credits:** 3
- NUT 5510 Nutrition Counseling and Communication Strategies **Credits:** 3
- NUT 6000 Nutrition Research Capstone I **Credits:** 1

Senior Experience: 3 credits

- NUT 4720 - Nutrition Capstone **Credits:** 3

Summary of Requirements

Without Concentration

General Studies Requirement	33 credits
ESSJ Requirement	0-3 credits
Major Requirements	74 credits
Senior Experience	3 credits
Unrestricted Electives	7-22 credits
Total for the Nutrition and Dietetics Major, B.S.	**120 Credits**

With Concentration

General Studies Requirement	33 credits
ESSJ Requirement	0-3 credits

Major Requirements	74 credits
Concentration Courses	9 credits
Senior Experience	3 credits
Unrestricted Electives	0-13 credits
Total for the Nutrition and Dietetics Major, B.S.	**120 Credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Program Modification

Pathway 2 Lactation Consultant Training Certificate

Department of Nutrition
College of Health and Human Sciences

Available Program Format(s): In-Person
CIP Code: 51.0815

About the Program

The Pathway 2 Lactation Consultant Training Certificate Program is an undergraduate certificate for students who wish to receive the necessary education and skills to be an International Board Certified Lactation Consultant (IBCLC). Students need to complete the required pre-reqs prior to applying for the certificate program.

General Certificate Requirements

Certificate requirements for the university can be found on the page below. All students seeking a certificate at the undergraduate level must follow these requirements in addition to the specific requirements related to the certificate declared. · Requirements for Certificates

Program Requirements

· The minimum passing grade for all courses included in this certificate is an earned grade of "C".

Pre-requisite Courses: 33 credits

Courses required as pre-requisites for entry into the lactation consultant training program undergraduate certificate (alternate courses may be considered)

- BIO 1080 - General Biology I Credits: 3
- BIO 2310 - Human Anatomy and Physiology I Credits: 4
- BIO 2320 - Human Anatomy and Physiology II Credits: 4
- PUB 1700 - Medical Terminology Credits: 3
- NUT 2040 - Introduction to Nutrition Credits: 3
- NUT 3300 - Cultural Aspects of Nutrition Credits: 3
- NUT 3700 - Nutrition Education and Counseling Credits: 3
- NUT 4040 - Nutrition Research Design and Evaluation Credits: 3
- NUT 4200 - Lifecycle Nutrition for Majors Credits: 3
- NUT 4800 - Medical Nutrition Therapy Credits: 4

Required Courses: 18 credits

- NUT 4950 - Lactation Management **Credits:** 3
- NUT 4970 - Clinical Skills for Breastfeeding Support **Credits:** 3

- NUT 4990 - Clinical Lactation Practicum **Credits:** 1 ~~(must complete 12 credits)~~
- NUT 4991 - Clinical Lactation Practicum II **Credits:** 5
- NUT 4992 - Clinical Lactation Practicum III **Credits:** 1
- NUT 4993 - Clinical Lactation Practicum IV **Credits:** 5

Summary of Requirements

Pre-requisite Courses	33 credits
Required Courses	18 credits
Total for the Pathway 2 Lactation Consultant Training Certificate	18 credits (pre-requisites not included)

Program Modification

Pathway 2 Lactation Consultant Training Graduate Certificate

The Pathway 2 Lactation Consultant Training Certificate Program is an graduate certificate for students who wish to receive the necessary education and skills to be an International Board Certified Lactation Consultant (IBCLC).

The goal of this certificate is to prepare competent entry-level lactation consultants in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains.

The graduate certificate program consists of NUT 5950-3 credits, NUT 5970-3 credits, NUT 5990-1 credits, NUT 5991-5 credits, NUT 5992-1 credit and NUT 5993- 5 credits. Students need to complete the required pre-requisite courses prior to applying for the certificate program.

These courses are not considered as part of the credits for the certificate itself and will be evaluated as pre-requisites for acceptance into the graduate certificate program.

~~The Lactation Consultant Training Program-Graduate Certificate is for students who wish to receive the necessary education and skills to be an International Board Certified Lactation Consultant (IBCLC). The graduate certificate program consists of NUT 5950-3 credits, NUT 5970-3 credits, and NUT 5990-12 credits. Students need to complete the required pre-requisite courses prior to applying for the certificate program. These courses are not considered as part of the credits for the certificate itself and will be evaluated as pre-requisites for acceptance into the graduate certificate program.~~

~~The goal of this certificate is to prepare competent entry-level lactation consultants in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains.~~

Application Deadlines- Students will be admitted into the certificate program using a rolling application deadline. All applications will be accepted and reviewed by the Nutrition Department at MSU Denver.

- ~~Application fee- $50 to MSU Denver.~~
- Graduate application- All students must complete an application to the university and to MSU Denver Nutrition Department Lactation Certificate Program.
- Minimum Degree Requirements- Program acceptance requires students to have a Bachelor's Degree from a regionally accredited university.
- Minimum GPA- Minimum of 3.0.
- Entrance Exam Required with Recommended Scores- none
- Official Transcripts - Students must submit official transcripts from each college or university they have attended. Official transcripts must be mailed or sent directly from the previous colleges/universities in a signed sealed envelope. Institutions may also send official electronic transcripts to gradtranscripts@msudenver.edu.
- No writing sample required for application

At least one letter of recommendation or contact information from someone who would recommend the applicant is required.

Currently this program is not approved to accept international students.

- ~~Prerequisite Courses~~

In each of the following 8 subjects, applicants must complete a minimum of one course. Applicants must demonstrate a passing grade in each of the courses and the courses must be a minimum of one academic credit session (e.g. semester, trimester, quarter, etc.) in length and provided by an accredited institution of higher learning

- Human Anatomy
- Human Physiology

- Human Biology

Corequisites

- Infant and Child Growth and Development
- Introduction to Clinical Research
- Psychology or Counselling Skills or Communication Skills
- Sociology or Cultural Sensitivity or Cultural Anthropology

For the remaining 6 subjects, applicants may complete courses offered by an institution of higher learning or they may complete continuing education courses.

- Basic Life Support
- Medical Documentation
- Medical Terminology
- Occupational Safety and Security for Health Professionals
- Professional Ethics for Health Professionals
- Universal Safety Precautions and Infection Control

Transfer Students- All prerequisite coursework may be transferred into MSU Denver. The graduate certificate program will also accept transfer of coursework equivalent to NUT 5950.

Non-Degree Seeking Students- The number of courses a student may take as a non-degree seeking student cannot exceed one-third (1/3) of the total credit requirement for the certificate.

Students may be admitted to any of the graduate degree programs with a non-degree-seeking status. Non-degree-seeking students do not qualify for financial aid and must re-apply and pay a new application fee in order to become degree seeking. Completing coursework as a non-degree-seeking student does not guarantee admission into a degree program. These credits will count toward transfer credits if the student is admitted as a degree-seeking student.

- Readmission- Readmission to the program will be determined by reapplication to the certificate program.
- Financial Aid- Financial Aid may be available for graduate students. Visit https://msudenver.edu/financialaid/graduate/ for information.
- Minimum overall GPA requirements- 3.0.
- Maximum course load-Students may enroll in no more than 15 credits per semester for fall and spring semesters without department approval. The maximum load for a two-week Winterim or Maymester term is 3 semester hours, excluding short-term study abroad courses.
- Clinical Lactation Internship requirements: After the completion of NUT 5950 and NUT 5970, each student will complete ~~500~~ 300 clinical lactation internship hours. These internship hours will be under the direct supervision of an International Board Certified Lactation Consultant (IBCLC). ~~Students will register for NUT 5990 during the semesters they plan to complete their clinical lactation internship. Each 1 credit of NUT 5990 will result in 42.5 hours of clinical lactation internship placement at a hospital, community health center, or outpatient lactation practice under the supervision of an IBCLC. MSU Denver's Lactation Program will secure all clinical placements for students at partner organizations.~~ Students are required to pass a drug screening and background check along with completing PreCheck and My Clinical Exchange before receiving lactation internship placement.
- Duplicative Coursework- No course may count toward both a master's degree and a bachelor's degree.
- Timeline for completion of degree- Students must complete the certificate within five calendar years from the term they initially enroll.
- Program Specific Requirements
    - Advancement to Candidacy- Students must complete all coursework and the clinical lactation internship in 5 years. The minimum passing grade for all courses included in this certificate is an earned grade of "C".

Prerequisites

Courses required as pre-requisites for entry into the lactation consultant training program graduate certificate (alternate courses may be considered)

- BIO 2310 Human Anatomy and Physiology I **Credits:** 4
- BIO 2320 Human Anatomy and Physiology II **Credits:** 4
- BIO 1080 General Biology I **Credits:** 3
- ITP 1700 Medical Terminology **Credits:** 3

- NUT 3300 Cultural Aspects of Nutrition **Credits:** 3
- NUT 4800 Medical Nutrition Therapy **Credits:** 4
- NUT 2040 Introduction to Nutrition **Credits:** 3
- NUT 3700 Nutrition Education and Counseling **Credits:** 3
- NUT 4040 Nutrition Research Design and Evaluation **Credits:** 3

Required Courses: 18 credits

- NUT 5950 - Lactation Management **Credits:** 3
- NUT 5970 - Clinical Skills for Breastfeeding Support **Credits:** 3
- NUT 5990 - Lactation Internship **Credits:** 1-12 ~~(must complete 12 credits)~~
- NUT 5991 - Clinical Lactation Practicum II **Credits:** 5
- NUT 5992 - Clinical Lactation Practicum III **Credits:** 1
- NUT 5993 - Clinical Lactation Practicum IV **Credits:** 5

Department of Speech, Language and Hearing Sciences

Program Modification

Master of Science in Speech-Language Pathology

Introduction

The Department of Speech, Language, Hearing Sciences offers a Master of Science in Speech-Language Pathology (MS SLP). This graduate program prepares students to become credentialed speech-language pathologists (SLPs) who assess and treat individuals with a wide range of communication and swallowing disorders and differences across the lifespan. Students have the option to pursue a concentration in bilingual (Spanish-English) service delivery in addition to the standard graduate program.

The standard MS SLP program is 69 total credits (42 credits of didactic coursework + 27 credits of clinical practica). The MS SLP program plus the concentration in bilingual service provision is 75 total credits (48 credits of didactic coursework + 27 credits of clinical practica). Students are expected to complete the program in six semesters starting in the summer and graduating 23 months later at the end of spring semester. Students must follow the standard plan of study for all didactic coursework and clinical practicum experiences unless formal approval is granted by the Program Director or Department Chair.

The Master of Science program in Speech-Language Pathology at Metropolitan State University of Denver is a Candidate for Accreditation by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association. This is a "pre-accreditation" status with the CAA, awarded to developing or emerging programs for a maximum period of five years.

Mission and Goals

The mission of the MS SLP is to provide a transformative graduate experience committed to the interprofessional education and cultural responsiveness of diverse students seeking clinical certification in speech-language pathology. Our program converges knowledge with skill-based learning to close the theory-to-practice gap. Amidst changing landscapes in education and healthcare, we prepare students to think critically and make informed clinical decisions.

We prioritize values that reflect those of the university at large including a shared commitment to community, accessibility, diversity, respect and excellence (CADRE). The goals of the MS SLP program are to:

- Offer an affordable and accessible pathway to a career in speech-language pathology.
- Implement comprehensive academic and clinical curriculum utilizing evidence-based practice.
- Educate clinical scientists who use research to make informed, ethical decisions.
- Apply faculty expertise across classroom, clinic, and community.
- Promote interprofessional education through institutional partnerships.
- Prioritize cultural responsiveness with option to pursue a concentration in bilingual service provision.
- Nurture lifelong learning with the goal of continuously improving clinical service provision.

More information on the MS SLP program can be found on the SLHS department's website.

Admissions

The SLHS Department is committed to recruitment processes that are inclusive of diverse students as well as admission principles that account for the diversity of applicants' education and experiential background. Admission criteria are designed to capture the applicants' strengths and compatibility with the MS SLP's core values: community, accessibility, diversity, respect, and excellence.

Application Process

Students apply to the Master of Science in Speech-Language Pathology at MSU Denver through the Communication Sciences and Disorders Centralized Application Service (CSDCAS) and submit associated application fee. Applications must be completed in CSDCAS by the posted deadline to be considered for the current application cycle. Incomplete applications will not be reviewed. Applicants will be notified via email of their application status. Applicants may be admitted, waitlisted or denied admission.

To be considered for admission to the MS SLP program, students must demonstrate:

- Evidence of a bachelor's degree from a regionally accredited university with a minimum 3.0 cumulative GPA.
- Evidence of a cumulative GPA in prerequisite SLHS coursework greater than or equal to 3.0.

Application materials include:

- Resume
- Written responses to several short essay questions
- Letters of recommendation from academic references

Additional requirements may include:

1. Writing sample
2. In-person or virtual interview

Students indicate interest in our bilingual concentration when they accept offers of admission. Students must demonstrate native or near-native proficiency with Spanish through either standardized assessment of speaking and writing and/or conversational exchange with fluent Spanish speakers to be eligible for the concentration in bilingual service provision.

Prerequisite Coursework

The following prerequisite coursework must be completed at the college-level in advance of program start in adherence to the Standards of the Council for Clinical Certification in Audiology and Speech-Language Pathology. While the number of credits is not specified, each must be a standalone course in which students have earned a final grade of "C" or better.

1. Coursework in biological sciences
2. Coursework in physical sciences (physics or chemistry)
3. Coursework in social/behavioral sciences
4. Coursework in statistics

An undergraduate major in Speech, Language, Hearing Sciences is not required. However, students must have completed the following prerequisite SLHS coursework with a grade of C or higher:

1. Anatomy and Physiology of Speech and Hearing
2. Clinical Phonetics
3. Diagnostic Audiology
4. Language Acquisition and Development
5. Language Disorders and Differences
6. Neural Bases of Communication and its Disorders
7. Principles of Assessment and Intervention
8. Rehabilitative Audiology
9. Speech Disorders and Differences
10. Speech Science

Program leadership will only consider requests for course substitutions with sufficient documentation that includes but is not limited to a course syllabus that details learning outcomes, content covered and evaluation metrics.

Students who possess a bachelor's degree in another field are encouraged to explore our Leveling Certificate in Speech, Language, Hearing Sciences. Completing coursework as a non-degree seeking student does not guarantee admission into the MS SLP program. Please visit the SLHS Department for more information.

Guided Clinical Observation

Upon entering the MS SLP program, students must provide evidence of having completed a minimum of 25 observation hours of direct service provision with an ASHA-certified SLP ~~or audiologist~~. Only activities that fall under the SLP scope of practice may be applied towards the observation requirement.

International Applicants

International applicants must demonstrate proficiency in English by obtaining a baccalaureate degree from a university in which English is the primary language of instruction and is required for all evaluations (written and oral), or through TOEFL administration, with a minimum score of 20 in each section, and a total score minimum of 90.

Program Deferral

Applicants who are accepted into the MS SLP Program and subsequently experienced a significant life event before their program starts may apply through the Department to defer their start semester up to one academic year from the term that acceptance was originally offered. An application is not required for readmission; however, students must contact program leadership in advance of the upcoming application deadline confirming their intent to pursue readmission. All stipulations of acceptance will be carried forward to the later term in which they start the MS SLP Program. Applicants who defer their start semester will be held to the policies and curriculum of the later term in which they officially start the MS SLP Program. If granted, the deferral process is only valid for one academic year from the original acceptance semester.

Additional Information

Financial Aid

Financial aid may be available for graduate students. Visit Financial Aid for more information.

Academic Policies/Processes

All MS SLP policies/processes can be found in the MS SLP program handbook available to all current MS SLP students. A handbook of clinical policies and procedures is also provided to all current students.

Specific policies/processes of the MS SLP program are described below.

Advising

Students are required to meet individually with program leadership or faculty designees at least three times throughout their two-year program including an onboarding interview during their first semester and an exit interview during their final semester. The focus of these meetings will be on credentialing requirements and progress towards degree completion.

Code of Conduct/Professionalism

The MS SLP program will adhere to MSU Denver's Student Code of Conduct and Academic Responsibilities including its statement on academic integrity as well as the principles of ethics described in the American Speech-Language-Hearing Association's Code of Ethics. Violations of program policies for academic and clinical integrity will be addressed through a Continuation Review.

Continuation Review

The MS SLP program has the right and responsibility to re-evaluate a student's suitability for continuing in the MS SLP program. Results of the Continuation Review may result in modifications to the student's plan of study, removal from clinical practicum with a failing grade and/or dismissal

from the program. Issues that may result in Continuation Reviews are included in the MS SLP program handbook along with its associated process/procedures.

Grades/GPA Requirements

Students must complete the required didactic and clinical coursework while maintaining a cumulative GPA of 3.0 or greater. No course grade lower than a "B-" counts towards degree completion.

Student Intervention

The Department follows a published process to address issues that may create obstacles to student success during any part of their graduate program. The policy and its procedures, including the use of an individualized, written Competency Attainment Plan can be found in the program handbook.

Transfer Coursework

Up to six credits may be transferred from a CAA accredited program in speech-language pathology. Only credits earned in didactic (non-clinical) coursework are eligible for consideration. No undergraduate courses will be accepted as substitutions for graduate coursework. Transfer credits will only be considered for coursework in which the final grade earned was a B- or higher.

The MS SLP program does not guarantee the transfer of graduate level SLP coursework from other schools. All students are expected to begin the MS SLP program at the same time as their associated cohort. Students are required to maintain full-time status every semester of the program; transferring credits cannot reduce the time to program completion.

Students must formally apply to MSU Denver's MS SLP program by the posted deadline. Transfer requests must be submitted by the end of a student's first fall semester. A detailed syllabus and schedule must be submitted for the graduate course to be considered along with all associated assignments/assessments. Additional information may be requested by program leadership. Failure to provide additional documentation in a timely manner will result in denial of the request.

Summative Portfolio

All students are required to complete a summative portfolio as part of their degree requirements. The summative portfolio includes specific artifacts from various points throughout the student's program of study along with a narrative of how their knowledge and skills have progressed over time. Post-graduation, the portfolio may function as a personalized professional development plan for students. Alterations to the format of the summative portfolio require formal approval by the Program Director.

A committee of at least three faculty/staff from the MS SLP program will holistically evaluate each student's portfolio. Students must receive a "meets expectations" designation on the summative portfolio rubric in partial fulfillment of the MS SLP requirements. Students who receive an unsatisfactory rating ("below expectations") on their summative portfolio will be put on an individualized, written Competency Attainment Plan (see Student Intervention).

Verification of Program Requirements

At the end of a student's program of study, the Program Director and Director of Clinical Education will confirm that the student has successfully completed all academic and clinical requirements of the MS SLP program and has demonstrated the knowledge and skill outcomes consistent with published standards for the Certificate of Clinical Competence in Speech-Language Pathology.

MS SLP Didactic Coursework (Required)

Courses are offered in a sequenced format. The sequential framework means not all courses are offered each semester. Student advising is essential for effective course planning.

- SLHS 5110 - Language and Literacy: Birth to Five **Credits:** 3
- SLHS 5120 - Acquired Neurogenic Disorders I **Credits:** 3
- SLHS 5130 - Language and Literacy: School Age **Credits:** 3
- SLHS 5210 - Speech Sound Disorders **Credits:** 3
- SLHS 5220 - Acquired Neurogenic Disorders II **Credits:** 3

- SLHS 5230 - Voice Disorders **Credits:** 3
- SLHS 5240 - Fluency Disorders and Differences **Credits:** 2
- SLHS 5310 - Foundations of Clinical Practice in Speech Language Pathology **Credits:** 3
- SLHS 5320 - Assessment in Speech-Language Pathology **Credits:** 3
- SLHS 5330 - Cultural and Linguistic Diversity in Communication Disorders **Credits:** 3
- SLHS 5340 - Evidence-Based Practice/Clinical Research **Credits:** 3
- SLHS 5360 - Therapeutic Engagement in Speech-Language Pathology **Credits:** 3
- SLHS 5410 - Swallowing and its Disorders **Credits:** 3
- SLHS 5420 - Communication Modalities for Individuals with Complex Communication Needs **Credits:** 1
  Subtotal: 39 credits

MS SLP Didactic Coursework (Elective)

Elective offerings for any given year will vary based on faculty availability and student interest. Students will take one elective course from the below options unless they are seeking the additional concentration option (Bilingual Service Provision).

- SLHS 5425 - Seminar in Augmentative and Alternative Communication **Credits:** 3
- SLHS 5945 - Foundations of Bilingualism **Credits:** 3

MS SLP Clinical Practica

To capture the scope of clinical practice in speech-language pathology, students will participate in multiple on-campus clinical experiences as well as complete external practica. The Director of Clinical Education will assist with student placement for all practica assignments.

- SLHS 6000 - Speech-Language Pathology Clinical Skills Lab **Credits:** 1
- SLHS 6100 - Clinical Practica I **Credits:** 2 (repeated)
- SLHS 6101 - Clinical Seminar I **Credits:** 1 (repeated)
- SLHS 6200 - Clinical Practica II **Credits:** 1-9 (repeated)
- SLHS 6201 - Clinical Seminar II **Credits:** 2 (repeated)
  Subtotal: 27 credits

MS SLP + Optional Concentration in Bilingual Service Provision

Along with the standard MS SLP, eligible students may elect to complete an optional concentration in bilingual service provision. The mission of this concentration is to prepare bilingual (Spanish-English) speech-language pathologists to become culturally-competent advocates and service providers to culturally and linguistically diverse clients.

- SLHS 5915 - Early Intervention and School-Age Bilingual Service Delivery **Credits:** 3
- SLHS 5935 - Bilingual Service Delivery in Medical/Clinical Practice **Credits:** 3
- SLHS 5945 - Foundations of Bilingualism **Credits:** 3
  Subtotal: 9 credits

College of Letters, Arts and Sciences

The College of Letters, Arts and Sciences (CLAS) offers over 40 undergraduate majors, around 50 undergraduate minors, ~~more than 5~~ 7 certificates, several teacher preparation programs, and multiple micro-credentials. CLAS houses 3 divisions, encompassing 19 departments and 6 interdisciplinary centers, institutes and stand-alone programs. In addition to individual degree requirements, CLAS faculty teach the majority of the General Studies Program curriculum. The College promotes an interdisciplinary viewpoint, with rigorous programs of study in the fine and performing arts; humanities; social sciences; and natural sciences. These programs prepare students for meaningful careers and a life of substance.

Department of Art

Program Modification

Department of Art and Department of Journalism and Media Production

College of Letters, Arts and Sciences CIP Code: 30.9999

Digital Media Minor

The Digital Media Minor includes courses from the departments of Art and Journalism and Media Production. This minor is designed to provide skills that will increase employment opportunities in the field of digital media communication.

In addition to required core courses, students choose one of the following concentrations: motion media, interactive media, content design, or still media. The Motion Media concentration deals with television and industry video production. Students in Interactive Media work with computer graphics, interactive applications, and web-based media production. The Content Design concentration focuses on the design of the message from the visual and written perspective. Still Media students explore with photography, photojournalism, and computer imaging.

Courses can be used to meet both the requirements of this minor and the requirements of a major in the Departments of Art or Journalism and Media Production.

Program Requirements

- This minor consists of 24 credits, 6 of which must be upper division.
- Prerequisites for the courses used for the Digital Media Minor must be satisfied.
- ARTH 1500 is recommended to fulfill the General Studies Arts and Humanities requirement.
- Students should contact an advisor to plan a course of study for their particular minor.
- If a student has taken any one of the required courses as part of their major, another course in the minor must be substituted.

Required Courses: 9 credits

All students in the Digital Media Minor begin with the following courses.

- ART 1531 - Art Studio: 4D **Credits:** 3
- JMP 1000 - Introduction to Journalism and Mass Media **Credits:** 3
- JMP 3425 - Creating Informational Media **Credits:** 3

Specialized Concentration & Elective Courses: 15 credits

Choose three courses (9 credits) from one of the four concentrations. In addition, choose two elective courses (6 credits) from any of the four concentrations. At least two courses must be upper division. Courses can ~~cannot~~ be used to meet both the requirements of this minor and the requirements of a major in the Departments of Art or Journalism and Media Production.

Still Media Concentration

- ART 1271 - Film Photography for Non-Majors **Credits:** 3
- ART 1273 - Digital Photography for Non-Art Majors **Credits:** 3
- CDES 2222 - Fundamentals of Communication Design **Credits:** 3
- JMP 2460 - Raster Graphics **Credits:** 3
- JMP 2465 - Vector Graphics **Credits:** 3
- JMP 2600 - Beginning Photojournalism **Credits:** 3
- JMP 4890 - Social Documentary **Credits:** 1-4

Interactive Media Concentration

- ART 3235 - Video Art **Credits:** 3
- ART 3236 - Experimental Animation **Credits:** 3

- CDES 2222 - Fundamentals of Communication Design **Credits:** 3
- CDES 2302 - Interactive Systems **Credits:** 3
- CDES 2602 - Interface Design and Development **Credits:** 3
- CDES 3602 - Interactive Design I **Credits:** 3
- CDES 3300 - Data-Driven Design **Credits:** 3
- JMP 2450 - Basic Media Production and Leadership **Credits:** 3
- JMP 2480 - Introduction to Animation **Credits:** 3
- JMP 4450 - Advanced Media Production and Leadership **Credits:** 3

Motion Media Concentration

- ART 3235 - Video Art **Credits:** 3
- ART 3236 - Experimental Animation **Credits:** 3
- CDES 3625 - Animation Practices **Credits:** 3
- JMP 2400 - Video Editing I **Credits:** 3
- JMP 2420 - Video Production I **Credits:** 3
- JMP 3420 - Video Production II **Credits:** 3
- JMP 3430 - Performance for Broadcast **Credits:** 3
- JMP 3445 - Television Production **Credits:** 3
- JMP 3485 - Motion Graphics I **Credits:** 3
- JMP 4420 - Video Production III **Credits:** 3
- JMP 3435 - The Role of the Video Producer **Credits:** 3

Content Design Concentration

- JMP 1100 - Journalism Fundamentals **Credits:** 3
- JMP 2800 - Introduction to Audio Production **Credits:** 3
- JMP 3410 - Writing for Broadcast Media **Credits:** 3
- JMP 3440 - Scriptwriting for Video **Credits:** 3
- JMP 3470 - Writing for Interactive Media **Credits:** 3
- JMP 3540 - Mobile and Social Media Communication **Credits:** 3
- JMP 3550 - Data Visualization and Presentation **Credits:** 3
- JMP 3630 - Producing Digital Documents **Credits:** 3

Summary of Requirements

Required Courses	9 credits
Specialized Concentration Courses	9 credits
Elective Courses	6 credits
Total for the Digital Media Minor	**24 credits**

Department of Biology

New Program

Master of Science in Medical Laboratory Science

About the Program

Medical laboratory science (MLS), also known as clinical laboratory science, is a nationally recognized allied health field focused on the analysis of patient samples to support accurate diagnosis, treatment, and disease prevention. Medical laboratory scientists use sophisticated instruments and techniques to perform tests on blood, tissue, and other body fluids – providing critical data that helps physicians make informed medical decisions. This behind-the-scenes role is essential to modern healthcare, with nearly 70% of medical decisions relying on lab test results.

The Department of Biology offers a Master of Science in Medical Laboratory Science (MS-MLS), which is accredited through the National Accrediting Agency for Clinical Laboratory Science (NAACLS). Graduates of the MLS program are eligible to sit for the national board exam and earn their MLS certification. With MLS credentials, they're equipped to work in high-demand clinical lab roles across hospitals, research centers, and public health labs — contributing directly to patient care and medical advancements.

The program provides two tracks for degree completion - an accelerated 24-month track and a part-time 36 month track. On the *accelerated track*, students complete all didactic and laboratory coursework towards MLS certification in one year of intensive study (51 credits total). This coursework also includes hands-on clinical training in the laboratories of clinical partners, following standards and content set by the MLS program. At the end of this year, students are prepared to sit for their certification as medical laboratory scientists. During the second year (fall and spring semesters), students can be employed as practicing MLS professionals while completing 9 credits of coursework in healthcare administration along with a 1 credit capstone in clinical laboratory management.

In the *part time track,* students take coursework over a longer period of time (3 years total), which allows students to work in the first two years while earning their certification and completing the final year on a similar schedule as the accelerated track.

Mission and Goals

The mission of the MS-MLS is to maintain the highest quality of educational practice, seek innovation in education and clinical practice, and meet the clinical laboratory workforce needs in the state of Colorado and the Rocky Mountain Region. In line with this mission, the MS-MLS seeks to provide Colorado and the Rocky Mountain Region with laboratory professionals that possess strong leadership qualities and excellent theoretical knowledge and technical skills. We share the commitment of the university to community, accessibility, diversity, respect, and excellence (CADRE).

The goals of the MS-MLS are to:

- Recruit and select qualified students who demonstrate a commitment to professional practice in the Colorado geographic locale.
- Integrate foundational theoretical and technical skills with professional experiences within the classroom and community served by CCMLS to produce a graduate who is competent to enter practice in today's modern clinical laboratory and who can become tomorrow's laboratory leader.
- Maximize student achievement and competence through professional modeling and activities that develop professional competence, including professional behaviors, problem solving, and complex technical skills.
- Maintain an environment of educational innovation and faculty-student respect while valuing differences in student learning as students achieve the required professional skills and competencies that contribute to the health and well-being of the patients they serve.
- Assure that program resources including students, faculty, fiscal support, physical resources and clinical capacity are aligned with maintaining the program.
- Build and maintain collaborations and partnerships with healthcare organizations that CCMLS graduates serve; place graduates into employment within CCMLS partner organizations.

Admissions

Application requirements

Applicants should be within 1-2 semesters of completing pre-requisite coursework and the baccalaureate degree before making application to MS in MLS. Courses in progress can be listed on the online application and will be counted toward meeting pre-requisite coursework if completed prior to enrollment. The following pre-requisite requirements must be fulfilled before commencement of coursework :

- Conferred baccalaureate degree
- Minimum GPA of 2.70
- 16 semester hours of biology including 3 courses with laboratory; two laboratory courses should be a 200/2000 or higher and one must be at the 300/3000 level with laboratory. One of the above courses must be a 200/2000 or higher general, pathogenic, or medical microbiology course with laboratory taken at a 4-year accredited university in person.
- a course in immunology or immunology content in another major course may be acceptable with submission of course syllabus.
- 16 semester hours of chemistry including 3 courses with laboratory; one course should be a 200/2000 or higher biochemistry or organic chemistry course with laboratory; analytical chemistry is strongly recommended but not required.
- one college level math course; statistics is strongly recommended but not required.

All coursework must qualify toward degrees in either chemistry or biological science. Survey courses for non-science majors are not acceptable. All courses in progress must be successfully completed (grade of C or above) prior to enrollment.

Applicants whose previous coursework was completed more than 7 years prior to enrollment should update their coursework by taking one upper division chemistry course with laboratory (300/3000+) and one upper division microbiology course with laboratory (300/3000+) at an accredited four-year college or university. These courses must qualify for a degree in either chemistry or biological science.

In addition to these requirements, applicants must be a U.S. citizen or legal permanent resident of the United States due to requirements set forth by clinical partners. Foreign transcripts must be evaluated by the ASCP BOC approved evaluation service listed on the program's website. Applicants are expected to clear background checks and applicable health screens (including a urine drug test and documentation of vaccination/immunization). English Language Learners (ELL) must have a TOEFL iBT score of 90 or better.

Further details can be found on the Minimum Application Requirements (MAR) document found on the MS-MLS website.

Application Process

Applicants are strongly encouraged to review and complete the minimum application requirements (MAR) checklist found on the website to confirm if they meet all requirements for consideration. Applicants with additional questions are encouraged to speak with an admissions counselor via e-mail or phone listed on the program's website. This includes questions related to applicability of courses towards completing the MAR affecting their eligibility. The MS-MLS does not offer exceptions to the minimum application requirements set by the program. Applicants that do not meet these minimum standards will be denied. We strongly encourage applicants to begin the application process the fall prior to their anticipated Summer start date.

Applicants apply through msudenver.edu/apply and should submit the following:

1. The completed application form including nonrefundable $50 application fee.
2. Three reference applicant evaluation forms. Two references must come from previous professors who taught science coursework or academic advisors , and one reference must come from a previous, recent employer. If the applicant does not have a recent employer they may submit a reference from another professor.
3. Official transcripts from all U.S. and foreign colleges and universities attended must be sent directly to MSU Denver. Foreign transcripts will be evaluated by an approved American Society for Clinical Pathology evaluation agency (see the MS-MLS website for further information).
4. A signed Verification of Degree Status form.
5. A narrative statement, as described in the application portal.
6. A resume

The top *eligible applicants* -- those who meet the minimum application requirements and have submitted all the required application materials -- will be invited for an interview. Those selected will be able to enroll for courses starting in the summer semester.

Additional Information

Financial Aid

Financial aid may be available for graduate students. Visit Financial Aid for more information.

Academic Policies/Processes

Students should familiarize themselves with the Academic Policies and Procedures found in the Graduate Catalog. All MS-MLS policies and processes can be found in the MS-MLS handbook which is made available to current students.

Code of Conduct/Professionalism

The MS-MLS program adheres to MSU Denver's Student Code of Conduct and Academic Responsibilities as well as the principles set forth by the program, available in the MS-MLS handbook.

Processes specific to the MS-MLS program are described below

Advising

Students are expected to meet individually with program leadership or faculty designees at the end of each semester to discuss progress in the program and review expectations for future progress.

Satisfactory Academic Progress (GPA)

Students must complete the required didactic and clinical coursework while maintaining a cumulative GPA of 3.0 or higher. No course grade lower than a "B-" counts towards degree completion.

MLS Board of Certification Exam

The dates to apply for the certification exam which authorizes the student to employment as an MLS will be provided in the spring review coursework in the first year and emails will be sent to remind students of the timeframe to apply. Graduation from the program is NOT contingent upon passing the Board of Certification Exam.

Students Previously Certified by CCMLS

Students who completed the course requirements and gained certification as part of the Colorado Center Medical Laboratory Science program (CC-MLS), from which this program evolved, may enroll with credit for all previous coursework, and may earn an MS in MLS by completing the course content in the second year of the accelerated program. We have assessed that the courses from CC-MLS met the requirements for Master's level coursework and match the rigor of coursework in the MS-MLS program. Because this coursework did not result in a Master's degree as a result of completion of the program, the 12-credit transfer rule defined in the Graduate Studies catalog does not apply. Students with a passing grade in these courses will transfer these credits to the MS-MLS program. Contact the program at medlabed@msudenver.edu for details.

The following courses are required for certification and must be completed before other course content.

- MLS 5000 Clinical Practice in Laboratory Science **Credits:** 3
- MLS 5010 Seminar in Education and Management in Medical Laboratory Sciences **Credits:** 1
- MLS 5020 Seminar in Medical Laboratory Science Research **Credits:** 1
- MLS 5100 Medical Microbiology I **Credits:** 2
- MLS 5110 Medical Microbiology II **Credits:** 6
- MLS 5150 Parasitology for Medical Laboratory Scientists **Credits:** 1
- MLS 5160 Mycology for Medical Laboratory Scientists **Credits:** 1
- MLS 5170 Parasitology and Mycology Laboratory **Credits:** 2
- MLS 5250 Immunology, Serology, and Molecular Diagnostics **Credits:** 2
- MLS 5300 Urinalysis **Credits:** 1
- MLS 5310 Body Fluids **Credits:** 1
- MLS 5400 Hematology I **Credits:** 2
- MLS 5410 Hematology II **Credits:** 3
- MLS 5430 Coagulation **Credits:** 2
- MLS 5440 Immunohematology **Credits:** 4
- MLS 5500 Chemical Analysis of Biophysiology **Credits:** 4
- MLS 6000 Advanced Medical Laboratory Sciences **Credits:** 1
- MLS 6100 Clinical Microbiology **Credits:** 3
- MLS 6400 Clinical Hematology **Credits:** 4
- MLS 6410 Clinical Immunohematology **Credits:** 3
- MLS 6500 Chemical Analysis of Clinical Biophysiology **Credits:** 3
- MLS 6600 Clinical Molecular Diagnostics **Credits:** 1

Required Courses - Healthcare Administration

The following courses are required for the Master of Science in Medical Laboratory Science in addition to the work needed for certification.

- MHA 5000 Fundamentals of Health Care Systems and Organizational Structures **Credits:** 3
- MHA 5020 Health Care Human Resources, Organizational Behavior, Change, and Development **Credits:** 3
- MHA 5090 Financial Analyses and Application in Health Care Organizations **Credits:** 3
- MLS 6900 Management Capstone for Medical Laboratory Science **Credits:** 1

Total Credits: 60 credits

Department of Chemistry and Biochemistry

Program Modification

American Chemical Society Post-Baccalaureate Bridge Program (ACS-BP)

The American Chemical Society Post-Baccalaureate Bridge Program (ACS-BP) is a credentialed post-baccalaureate bridge experience inspired by the structure of the American Chemical Society Bridge Program, which integrates data-driven practices into the program curriculum to provide new pathways to graduate programs in the chemical and/or biochemical sciences for all students. To foster student success, the ACS-BP is tuition-free and offers a competitive salary, housing stipend, and health insurance for the full two years of the program.[1] The goal of this structure is to enable students the space to fully engage, relax into their STEM identity, focus, and thrive while getting high-quality, rigorous preparation for graduate programs in the Chemical and/or Biochemical Sciences.

Advantages of this Program:
Graduate admissions decisions rely heavily on a student's upper-division electives, hands-on teaching experience, immersive research experiences, and scientific communication skills. The ACS-BP provides depth and breadth of opportunity for students in each of those critical areas while introducing students to the graduate school experience. The program curriculum is modeled after the first two years of a graduate program, but unlike grad school, we provide at least three tiers of mentorship for each student to ensure holistic, comprehensive support while they're discovering their graduate school path. Formal and informal networking and collaborative research interactions are also included to provide students with opportunities to interact with the broader scientific and more focused STEM communities.

Curriculum Specifics:
During the first year, each student completes advanced undergraduate coursework, an effective college teaching experience, graduate school and research support coursework, and research rotations. Students gain invaluable experience and insight while they prepare for the second phase of the program: an Immersive Research Experience. The Immersive Research Experience begins in the second half of their second semester when students transition to hands-on laboratory research with a principal investigator at MSU Denver or a partnering graduate institution for the remainder of the program. During this time, the students create and iteratively refine a poster and an oral presentation on their research project through scheduled presentations at MSU Denver and partnering institutions. The ACS-BP culminates in a capstone project wherein the students prepare a thesis or publication-quality document on their research and present their final poster and oral presentation to a panel of program mentors.

Notes:

1. The merit criteria of this program include a comparative evaluation of the applicant's likelihood for graduate school admission with and without this opportunity.
2. Additionally, if students are admitted to and attend graduate school at one of our partner universities, a portion of the ACS-BP coursework is designed to directly transfer as credit toward their graduate program.
3. The minimum passing grade for the *undergraduate-level* curriculum in this program is a C, and the minimum passing grade is a B- for courses that will transfer into a subsequent graduate program (due to the requirements of our partnering graduate programs).

ACS-BP Program Requirements (19.5 credits)

To complete the ACS-BP certificate program, each student must complete 19.5 credit hours of coursework as outlined in the categories below. The program timeline, curriculum categories, and breakdown of *Advanced Undergraduate Coursework* by research interest area are described in more detail in the following sections.

Program Credit Categories	Credit Hours/Course	Required Credits/Category
T1 Mentorship Coursework	0.5	3
Effective College Teaching in Chemistry: T2 Mentor	0.5	1
Graduate School and Research Support Coursework	0.5 - 1	3.5
Research Rotations	0.5	0.5
Immersive Research Experience with a T3 Mentor	0.5 - 2	5
ACS-BP Research Capstone	0.5	0.5
Advanced Undergraduate Coursework*	2 - 4	6
Total Credits for the Program		*19.5*

*For this certificate program, students must complete 6 credits of advanced undergraduate coursework in addition to/ or to replace the coursework completed during their bachelor's degree. For that reason, transfer credits will only be assessed on a case-by-case basis under outstanding circumstances.

Program Timeline

Year 1 - Semester 1 (1.5 - 8.5 credits)

During the first semester, students work closely with their Tier 1 and Tier 2 mentors to plan their course through the program, learn teaching practices, and begin to plan for graduate school admission processes. This is a good time to complete the specified electives in the *Advanced Undergraduate Coursework* and *Graduate School and Research Support Coursework* categories.

Required Core Courses: Credits / Units: 1.5

- CHE 0010 - Effective College Teaching in Chemistry I: T2 Mentor **Credits:** 0
- CHE 4970 - Internship I: T1 Mentor **Credits:** 0.5
- CHE 4971 - Effective College Teaching in Chemistry I **Credits:** 0.5
- CHE 4972 - Navigating Graduate School **Credits:** 0.5

AND

Specified Electives:
Advanced Undergraduate Coursework (0-6 credits)
Graduate School and Research Support Coursework (0-1 credits)

Year 1 - Semester 2 (3.5 - 10.5 credits)

During the second semester, the program begins to ramp up as students continue to work with their Tier 1 and Tier 2 mentors to define their graduate school trajectory. Students select their Tier 3 research mentors and become more involved in graduate preparation coursework, such as *Advanced Science Communication I*. All specified electives in the *Advanced Undergraduate Coursework* and *Graduate School and Research Support Coursework* categories must be completed by the end of Year 1 - Semester 2.

Required Core Courses: Credits / Units: 3

- CHE 0020 - Effective College Teaching in Chemistry II: T2 Mentor **Credits:** 0
- CHE 4970 - Internship I: T1 Mentor **Credits:** 0.5
- CHE 4972 - Navigating Graduate School **Credits:** 0.5
- CHE 4973 - Advanced Science Communication I **Credits:** 1
- CHE 4976 - Effective College Teaching in Chemistry II **Credits:** 0.5
- CHE 4977 - Research/Laboratory Rotation **Credits:** 0.5
  This course is taken during the first 8 weeks of the second semester.

- CHE 4979 - Research/Laboratory Internship I: T3 Mentor **Credits:** 0.5
  This course is taken during the last 5 weeks of the second semester.

AND

Specified Electives:
Advanced Undergraduate Coursework (0-6 credits)
Graduate School and Research Support Coursework (0-1 credits)

Year 1 - Summer (1 credit)

The students start fully engaging in the *Immersive Research Experience* portion of the program with their Tier 3 mentor during the summer after their first year. The students continue to work with their Tier 1 mentor to ensure they are adequately supported at every stage of the program.

- CHE 4970 - Internship I: T1 Mentor **Credits:** 0.5
- CHE 4983 - Research/Laboratory Internship IA: T3 Mentor **Credits:** 0.5-1

NOTE: At the end of Year 1 - Summer students will have completed 13 of the 19.5 required credits.

Year 2 - Semester 1 (2.5 credits)

The students continue the *Immersive Research Experience* portion of the program during the second academic year, working with their Tier 1 and Tier 3 mentors to hone their research and science communication skills while submitting their graduate application packages.

- CHE 4978 - Internship II: T1 Mentor **Credits:** 0.5
- CHE 4985 - Research/Laboratory Internship II: T3 Mentor **Credits:** 1-2

Year 2 - Semester 2 (3 credits)

As students approach the end of the program, they take *Advanced Science Communication II* to prepare them to complete their capstone projects on the work they've completed during their *Immersive Research Experience*.

- CHE 4978 - Internship II: T1 Mentor **Credits:** 0.5
- CHE 4984 - Advanced Science Communication II **Credits:** 0.5
- CHE 4985 - Research/Laboratory Internship II: T3 Mentor **Credits:** 1-2

Year 2 - Summer (1 credit)

Students work closely with their Tier 1 and Tier 3 mentors to complete their *Research Capstone* projects and present their research to a panel of mentors in an open forum discussion.

- CHE 4978 - Internship II: T1 Mentor **Credits:** 0.5
- CHE 4998 - ACS-BP Research Capstone **Credits:** 0.5

Program Credit Categories

T1 Mentorship Coursework (3 credits)

Students must complete **a total of 3 credits** of *coursework with their Tier 1 Mentor* throughout their program. Both of these courses are repeated three times.

- CHE 4970 - Internship I: T1 Mentor **Credits:** 0.5
- CHE 4978 - Internship II: T1 Mentor **Credits:** 0.5

Effective College Teaching in Chemistry with a T2 Mentor (1 credit)

Students must complete **a total of 1 credit and associated non-credit coursework** in *Effective College Teaching in Chemistry with Tier 2 Mentorship*.

- CHE 0010 - Effective College Teaching in Chemistry I: T2 Mentor **Credits:** 0
- CHE 0020 - Effective College Teaching in Chemistry II: T2 Mentor **Credits:** 0
- CHE 4971 - Effective College Teaching in Chemistry I **Credits:** 0.5
- CHE 4976 - Effective College Teaching in Chemistry II **Credits:** 0.5

Graduate School and Research Support Coursework (3.5 credits)

Students must complete **a total of 3.5 credits** of *Graduate School and Research Support Coursework*.

Core Required Courses: Credits / Units: 2.5

- CHE 4972 - Navigating Graduate School **Credits:** 0.5
  This course is taken two times; during the first and second semester of the first year in the program.

- CHE 4973 - Advanced Science Communication I **Credits:** 1

- CHE 4984 - Advanced Science Communication II **Credits:** 0.5
  Specified Electives: Credits / Units: 1
- CHE 3810 - Chemistry Literature and Research **Credits:** 1
- CHE 4974 - Ethical Practices in Scientific Work **Credits:** 0.5
- CHE 4975 - Data Handling in Scientific Work **Credits:** 0.5

Research Rotations (0.5 credits)

Students must complete **a total of 0.5 credits** of *Research/Laboratory Rotations* in the first half of the second semester in the program.

- CHE 4977 - Research/Laboratory Rotation **Credits:** 0.5

Immersive Research Experience with a Tier 3 Mentor (5 credits)

Students must complete **a total of 5 credits** of *Immersive Research Experience* coursework with their Tier 3 Mentor throughout their program.

- CHE 4979 - Research/Laboratory Internship I: T3 Mentor **Credits:** 0.5
- CHE 4983 - Research/Laboratory Internship IA: T3 Mentor **Credits:** 0.5-1
- CHE 4985 - Research/Laboratory Internship II: T3 Mentor **Credits:** 1-2

ACS-BP Research Capstone (0.5 credits)

Students must complete **a total of 0.5 credits** of *Research Capstone* coursework with their Tier 1 and Tier 3 Mentors during the course of their program.

- CHE 4998 - ACS-BP Research Capstone **Credits:** 0.5

Advanced Undergraduate Coursework (6 credits)

Students must complete **a total of 6 credits** of *Advanced Undergraduate Coursework* during their first two semesters in the program. We expect that most students will take advanced electives in chemistry or biochemistry for this program. However, we have identified coursework within and outside the department in the *Research Interest* areas below that could benefit students who want to enter a graduate program in a specific area. Any courses listed below at the 3000 level or higher, including Omnibus courses at the 390 level or higher, will satisfy the *Advanced Undergraduate Coursework* requirement for this program.

Note: Most of these courses have prerequisites that are not listed below. Students are encouraged to discuss their potential coursework with their T1 mentor prior to registering for classes.

Department of Chemistry and Biochemistry - Advanced Undergraduate Coursework

- CHE 3050 - Environmental Chemistry **Credits:** 3
- CHE 3140 - Spectrometric Identification of Organic Compounds **Credits:** 3
- CHE 3300 - Inorganic Chemistry **Credits:** 3
- CHE 3600 - Crime Scene Investigation I **Credits:** 4
- CHE 3610 - Crime Scene Investigation II **Credits:** 4
- CHE 3700 - Forensic Chemistry **Credits:** 4
- CHE 3710 - Forensic Biochemistry **Credits:** 4
- CHE 4010 - Advanced Organic Chemistry **Credits:** 3
- CHE 4020 - Synthetic Organic Chemistry **Credits:** 3
- CHE 4800 - Special Topics in Chemistry **Credits:** 4
- CHE 4100 - Instrumental Analysis **Credits:** 3
- CHE 4110 - Instrumental Analysis Laboratory **Credits:** 2
- CHE 4130 - Quality in the Chemical Industry **Credits:** 2
- CHE 4160 - QA/QC Methods Laboratory **Credits:** 1

- CHE 4300 - Advanced Inorganic Chemistry **Credits:** 4
- CHE 4310 - Biochemistry I **Credits:** 4
- CHE 4320 - Biochemistry II **Credits:** 4
- CHE 4350 - Biochemistry Laboratory **Credits:** 2
- CHE 4390 - Advanced Biochemistry Laboratory **Credits:** 3
- CHE 4450 - Physical Chemistry: Quantum Mechanics and Spectroscopy **Credits:** 4
- CHE 4460 - Physical Chemistry: Thermodynamics and Kinetics **Credits:** 4
- CHE 4480 - Physical Chemistry Laboratory: Quantum and Spectroscopy **Credits:** 2
- CHE 4490 - Physical Chemistry Laboratory: Thermodynamics and Kinetics **Credits:** 2

Analytical/Instrumental Research Interest

If students take CHE 4100/CHE 4110 and CHE 4130/CHE 4160 as electives in this *Research Interest* area, they will simultaneously earn the Quality in the Chemical Industry Certificate.

- CHE 3140 - Spectrometric Identification of Organic Compounds **Credits:** 3
- CHE 4100 - Instrumental Analysis **Credits:** 3
- CHE 4110 - Instrumental Analysis Laboratory **Credits:** 2
- CHE 4130 - Quality in the Chemical Industry **Credits:** 2
- CHE 4160 - QA/QC Methods Laboratory **Credits:** 1
- ENV 4460 - Advanced Water Quality Analysis **Credits:** 3
- MTH 3210 - Probability and Statistics **Credits:** 4

Biochemical Research Interest

- BIO 2310 - Human Anatomy and Physiology I **Credits:** 4
- BIO 2400 - General Microbiology **Credits:** 5
  Note: *BIO 2310 and BIO 2400 don't count toward advanced electives but may be prerequisites of courses listed in this research interest area, or of general interest if you are considering this type of graduate program. We encourage you to discuss these courses with your Tier 1 mentor (or the Departmental Advisor) when registering for courses.*

- BIO 3350 - Immunology **Credits:** 3
- BIO 3351 - Immunology Laboratory **Credits:** 1
- BIO 3600 - General Genetics **Credits:** 4
- BIO 4050 - Advanced Cell and Molecular Biology **Credits:** 3
- BIO 4060 - Cellular and Molecular Biology Laboratory **Credits:** 2
- BIO 4070 - Biology of Cancer **Credits:** 3
- BIO 4300 - Neurobiology **Credits:** 3
- CHE 4310 - Biochemistry I **Credits:** 4
- CHE 4320 - Biochemistry II **Credits:** 4
- CHE 4350 - Biochemistry Laboratory **Credits:** 2
- CHE 4390 - Advanced Biochemistry Laboratory **Credits:** 3

Chemical Education Research Interests

- PSY 2310 - Statistics for the Social and Behavioral Sciences **Credits:** 3
  Note: PSY 2310 doesn't count toward advanced electives but may be a prerequisite of courses listed in this research interest area, or of general interest if you are considering this type of graduate program. We encourage you to discuss these courses with your Tier 1 mentor (or the Departmental Advisor) when registering for courses.

- PSY 3010 - Research Methods in Psychological Science **Credits:** 3
- PSY 3340 - Cognitive Development and Learning **Credits:** 3
- PSY 4320 - Advanced Psychological Research Methods **Credits:** 3
- PSY 4450 - Advanced Psychological Data Science **Credits:** 3

- PSY 3575 - Cognitive Psychology **Credits:** 3

Computation Chemistry/Biochemistry Interest

- BIO 3350 - Immunology **Credits:** 3
- BIO 3600 - General Genetics **Credits:** 4
- BIO 4050 - Advanced Cell and Molecular Biology **Credits:** 3
- BIO 4070 - Biology of Cancer **Credits:** 3
- BIO 4300 - Neurobiology **Credits:** 3
- BIO 4060 - Cellular and Molecular Biology Laboratory **Credits:** 2
- CHE 4450 - Physical Chemistry: Quantum Mechanics and Spectroscopy **Credits:** 4
- CHE 4460 - Physical Chemistry: Thermodynamics and Kinetics **Credits:** 4
- CHE 4480 - Physical Chemistry Laboratory: Quantum and Spectroscopy **Credits:** 2
- CHE 4490 - Physical Chemistry Laboratory: Thermodynamics and Kinetics **Credits:** 2
- CS 2050 - Computer Science 2 **Credits:** 4
- CS 3120 - Machine Learning **Credits:** 4
- MTH 2520 - R Programming **Credits:** 4
- MTH 2540 - Scientific Computing with Python **Credits:** 4
  Note: *CS 2050, MTH 2510, MTH 2520, and MTH 2540 don't count toward advanced electives but may be prerequisites of courses listed in this research interest area, or of general interest if you are considering this type of graduate program. We encourage you to discuss these courses with your Tier 1 mentor (or the Departmental Advisor) when registering for courses.*

- MTH 3210 - Probability and Statistics **Credits:** 4
- MTH 3220 - Statistical Methods **Credits:** 4
- MTH 3270 - Data Science **Credits:** 4
- MTH 3430 - Mathematical Modeling **Credits:** 4

Environmental Research Interest

- CHE 3050 - Environmental Chemistry **Credits:** 3
- CHE 4100 - Instrumental Analysis **Credits:** 3
- CHE 4110 - Instrumental Analysis Laboratory **Credits:** 2
- ENV 1200 - Introduction to Environmental Science **Credits:** 3
- ENV 2100 - Environmental Sampling and Analysis **Credits:** 4
  Note: ENV 1200 and ENV 2100 don't count toward advanced electives but may be prerequisites of courses listed in this research interest area, or of general interest if you are considering this type of graduate program. We encourage you to discuss these courses with your Tier 1 mentor (or the Departmental Advisor) when registering for courses.

- ENV 3422 - Methods of Soil Analysis and Sampling **Credits:** 1
- ~~ENV 3440 - Energy and Mineral Resources **Credits:** 4~~
- ENV 3710 - Environmental Remediation **Credits:** 3
- ENV 4460 - Advanced Water Quality Analysis **Credits:** 3
- GEL 3440 - Energy and Mineral Resources **Credits:** 4
- MTH 3240 - Environmental Statistics **Credits:** 4

Forensic Chemistry/Biochemistry Research Interest

- CHE 2710 - Introduction to Criminalistics **Credits:** 3
- CHE 2711 - Introduction to Criminalistics Laboratory **Credits:** 1
- CHE 2750 - Arson and Explosives **Credits:** 3
- CHE 2760 - Field Testing and Laboratory Analysis of Drugs **Credits:** 1
  Note: *CHE 2710, CHE 2711, CHE 2750, and CHE 2760 don't count toward advanced electives but may be prerequisites of courses listed in this research interest area, or of general interest if you are considering this type of graduate program. We encourage you to discuss these courses with your Tier 1 mentor (or the Departmental Advisor) when registering for courses.*

- CHE 3600 - Crime Scene Investigation I **Credits:** 4
- CHE 3610 - Crime Scene Investigation II **Credits:** 4
- CHE 3700 - Forensic Chemistry **Credits:** 4
- CHE 3710 - Forensic Biochemistry **Credits:** 4
- CJC 4650 - Ethics for the Criminal Justice Professional **Credits:** 3

Inorganic Research Interest

- CHE 3300 - Inorganic Chemistry **Credits:** 3
- CHE 4300 - Advanced Inorganic Chemistry **Credits:** 4
- CHE 4450 - Physical Chemistry: Quantum Mechanics and Spectroscopy **Credits:** 4
- CHE 4460 - Physical Chemistry: Thermodynamics and Kinetics **Credits:** 4
- CHE 4480 - Physical Chemistry Laboratory: Quantum and Spectroscopy **Credits:** 2
- CHE 4490 - Physical Chemistry Laboratory: Thermodynamics and Kinetics **Credits:** 2

Organic Research Interest

- CHE 3140 - Spectrometric Identification of Organic Compounds **Credits:** 3
- CHE 4010 - Advanced Organic Chemistry **Credits:** 3
- CHE 4020 - Synthetic Organic Chemistry **Credits:** 3

Pharmaceutical Research Interest

- BIO 2310 - Human Anatomy and Physiology I **Credits:** 4
- BIO 2400 - General Microbiology **Credits:** 5
  Note: *BIO 2310 and BIO 2400 don't count toward advanced electives but may be prerequisites of courses listed in this research interest area, or of general interest if you are considering this type of graduate program. We encourage you to discuss these courses with your Tier 1 mentor (or the Departmental Advisor) when registering for courses.*

- BIO 3350 - Immunology **Credits:** 3
- BIO 3351 - Immunology Laboratory **Credits:** 1
- BIO 3600 - General Genetics **Credits:** 4
- BIO 4050 - Advanced Cell and Molecular Biology **Credits:** 3
- BIO 4060 - Cellular and Molecular Biology Laboratory **Credits:** 2
- BIO 4070 - Biology of Cancer **Credits:** 3
- BIO 4300 - Neurobiology **Credits:** 3
- CHE 4310 - Biochemistry I **Credits:** 4
- CHE 4320 - Biochemistry II **Credits:** 4
- CHE 4350 - Biochemistry Laboratory **Credits:** 2
- CHE 4390 - Advanced Biochemistry Laboratory **Credits:** 3

Physical/Spectroscopy Research Interest

- CHE 3140 - Spectrometric Identification of Organic Compounds **Credits:** 3
- CHE 4300 - Advanced Inorganic Chemistry **Credits:** 4
- CHE 4450 - Physical Chemistry: Quantum Mechanics and Spectroscopy **Credits:** 4
- CHE 4460 - Physical Chemistry: Thermodynamics and Kinetics **Credits:** 4
- CHE 4480 - Physical Chemistry Laboratory: Quantum and Spectroscopy **Credits:** 2
- CHE 4490 - Physical Chemistry Laboratory: Thermodynamics and Kinetics **Credits:** 2

Program Modification

Biochemistry Major, B.S.

Department of Chemistry and Biochemistry

Available Program Format(s): In-Person

College of Letters, Arts and Sciences

CIP Code: 26.0202

About the Program

The Biochemistry B.S. degree program offers students a focused, intensive education in the natural sciences and in the field of biochemistry. This degree prepares students for graduate work in biochemistry, for biochemical and biomedical careers in industry/government, and for post-graduate studies in the health sciences.

Student Outcomes

1. Apply the fundamental principles of chemistry and/or biochemistry, showing core competency in chemistry areas (general, analytical, organic, biochemistry, and physical chemistry)
2. Design and conduct experiments using appropriate techniques and equipment
3. Conduct scientific inquiry in an ethical manner
4. Handle chemicals and chemical waste safely
5. Search, critically evaluate, and properly cite scientific literature
6. Use effective oral and written communication skills

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.
- A grade of "C-" or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
    - **Recommended:** MTH 1410 - Calculus I*
- Arts and Humanities (6 credits)
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
    - **Recommended:** PHY 2010 - College Physics I* or PHY 2311 - General Physics I*
- Social and Behavioral Sciences (6 credits)
- Global Diversity (0 or 3 credits**)

** The listed courses are required courses for the major and can also fulfill general studies requirements*

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ requirement for degree completion.

Required Major Courses: 40 credits

- CHE 1800 - General Chemistry I **Credits:** 4
- CHE 1801 - General Chemistry I Laboratory **Credits:** 1
- CHE 1810 - General Chemistry II **Credits:** 4
- CHE 1811 - General Chemistry II Laboratory **Credits:** 1
- CHE 3000 - Analytical Chemistry **Credits:** 3
- CHE 3010 - Analytical Chemistry Laboratory **Credits:** 2
- CHE 3100 - Organic Chemistry I **Credits:** 4
- CHE 3110 - Organic Chemistry II **Credits:** 4
- CHE 3120 - Organic Chemistry Laboratory 1 **Credits:** 1
- CHE 3130 - Organic Chemistry Laboratory II **Credits:** 1
- CHE 3190 - Survey of Physical Chemistry **Credits:** 4
- CHE 3200 - Survey of Physical Chemistry Laboratory **Credits:** 1
- CHE 4310 - Biochemistry I **Credits:** 4
- CHE 4320 - Biochemistry II **Credits:** 4
- CHE 4350 - Biochemistry Laboratory **Credits:** 2

Required Biology, Physics, and Math Courses: 25-26 credits

Biochemistry is, by nature, an interdisciplinary area of study, and the required coursework reflects that reality, offering a complete education in the biochemical, biomedical, and technical fields. The student must satisfy the non-chemistry course requirements below.

Note: MTH 1410 counts as a Quantitative Literacy General Studies course; the Biology and Physics courses count as Natural and Physical Science General Studies courses.

- BIO 1080 - General Biology I **Credits:** 3
- BIO 1081 - General Biology II **Credits:** 3
- BIO 1090 - General Biology Laboratory I **Credits:** 1
- BIO 1091 - General Biology Laboratory II **Credits:** 1
- BIO 3050 - Cell Biology **Credits:** 4

  Select one of the following Genetics courses:
- BIO 3600 - General Genetics **Credits:** 4
  or
- BIO 3610 - Genetics: Principles and Analysis **Credits:** 5
- MTH 1410 - Calculus I **Credits:** 4

  Select one of these two options:

Option 1

- PHY 2010 - College Physics I **Credits:** 4
- PHY 2030 - College Physics I Laboratory **Credits:** 1

Option 2

- PHY 2311 - General Physics I **Credits:** 4
- PHY 2321 - General Physics I Laboratory **Credits:** 1

Additional Required STEM Elective Courses: 10 credits

Reflecting the broad, interdisciplinary nature of biochemistry, students must complete 10 credits of additional STEM electives from the following list.

*Some of these courses may count to fulfill the Natural and Physical Sciences General Studies requirement. Students should work with their academic advisor.

- CHE 3050 - Environmental Chemistry **Credits:** 3
- CHE 3140 - Spectrometric Identification of Organic Compounds **Credits:** 3
- CHE 3300 - Inorganic Chemistry **Credits:** 3
- CHE 3700 - Forensic Chemistry **Credits:** 4
- CHE 3710 - Forensic Biochemistry **Credits:** 4
- CHE 3810 - Chemistry Literature and Research **Credits:** 1
- CHE 3980 - Internship in Chemistry **Credits:** 1-15
- CHE 4100 - Instrumental Analysis **Credits:** 3
- CHE 4110 - Instrumental Analysis Laboratory **Credits:** 2
- CHE 4130 - Quality in the Chemical Industry **Credits:** 2
- CHE 4160 - QA/QC Methods Laboratory **Credits:** 1
- CHE 4300 - Advanced Inorganic Chemistry **Credits:** 4
- CHE 4360 - Computational Biochemistry Laboratory **Credits:** 2
- CHE 4390 - Advanced Biochemistry Laboratory **Credits:** 3
- CHE 4800 - Special Topics in Chemistry **Credits:** 4
- BIO 2310 - Human Anatomy and Physiology I **Credits:** 4
- BIO 2320 - Human Anatomy and Physiology II **Credits:** 4
- BIO 2400 - General Microbiology **Credits:** 5
- BIO 3140 - Plant Physiology **Credits:** 5
- BIO 3160 - Plant Anatomy and Morphology **Credits:** 4
- BIO 3170 - Paleobotany **Credits:** 4
- BIO 3200 - Invertebrate Zoology **Credits:** 4
- BIO 3210 - Histology **Credits:** 4
- BIO 3220 - Comparative Vertebrate Anatomy **Credits:** 5
- BIO 3260 - Vertebrate Zoology **Credits:** 4
- BIO 3320 - Advanced Human Physiology **Credits:** 4
- BIO 3330 - Advanced Human Cadaver Anatomy **Credits:** 5
- BIO 3340 - Endocrinology **Credits:** 3
- BIO 3350 - Immunology **Credits:** 3
- BIO 3351 - Immunology Laboratory **Credits:** 1
- BIO 3360 - Animal Physiology **Credits:** 4
- BIO 3400 - Microbial Physiology **Credits:** 4
- BIO 3471 - Biology of Women **Credits:** 3
- BIO 4050 - Advanced Cell and Molecular Biology **Credits:** 3
- BIO 4060 - Cellular and Molecular Biology Laboratory **Credits:** 2
- BIO 4070 - Biology of Cancer **Credits:** 3
- BIO 4200 - General Mycology **Credits:** 3
- BIO 4271 - Parasitology **Credits:** 4
- BIO 4300 - Neurobiology **Credits:** 3
- BIO 4350 - Clinical Immunology **Credits:** 3

- BIO 4440 - Virology **Credits:** 3
- BIO 4450 - Pathogenic Microbiology **Credits:** 5
- BIO 4470 - Microbial Genetics **Credits:** 4
- BIO 4850 - Evolution **Credits:** 3
- ANT 3000 - Quantitative Methods in Anthropology **Credits:** 3
- ANT 3100 - Human Evolution **Credits:** 3
- ANT 3800 - Forensic Anthropology **Credits:** 3
- ANT 3820 - Forensic Archaeology **Credits:** 3
- ANT 3840 - Introduction to Bioarchaeology **Credits:** 3
- ANT 3860 - Paleopathology **Credits:** 3
- CS 1050 - Computer Science 1 **Credits:** 4
- CS 2050 - Computer Science 2 **Credits:** 4
- CS 3120 - Machine Learning **Credits:** 4
- ENV 2100 - Environmental Sampling and Analysis **Credits:** 4
- ENV 3422 - Methods of Soil Analysis and Sampling **Credits:** 1
- ENV 2500 - Environmental Biogeochemistry **Credits:** 3
- GEG 3410 - Biogeography **Credits:** 3
- GEG 3422 - Methods of Soil Analysis and Sampling **Credits:** 1
- MTH 1410 - Calculus I **Credits:** 4
- MTH 2410 - Calculus II **Credits:** 4
- MTH 2420 - Calculus III **Credits:** 4
- MTH 2520 - R Programming **Credits:** 4
- MTH 2540 - Scientific Computing with Python **Credits:** 4
- MTH 3210 - Probability and Statistics **Credits:** 4
- MTH 3270 - Data Science **Credits:** 4
- MTH 3430 - Mathematical Modeling **Credits:** 4
- PHY 2020 - College Physics II **Credits:** 4
- PHY 2040 - College Physics II Laboratory **Credits:** 1
- PHY 2331 - General Physics II **Credits:** 4
- PHY 2341 - General Physics II Laboratory **Credits:** 1
- PHY 2821 - Sophomore Physics Laboratory **Credits:** 1
- PHY 3111 - Modern Physics I **Credits:** 4
- PHY 3121 - Modern Physics II **Credits:** 3
- PHY 4810 - Quantum Physics II **Credits:** 3
- PSY 2120 - Brain and Behavior **Credits:** 3
- PSY 3380 - Clinical Neuropsychology **Credits:** 3
- PSY 3410 - Health Psychology **Credits:** 3
- PSY 3440 - Cravings and Addictions **Credits:** 3
- PSY 3560 - Psychopharmacology **Credits:** 3
- PSY 4540 - Behavioral Neuroscience **Credits:** 3

Senior Experience: 3 credits

Students must complete a Senior Experience course offered by the Department of Chemistry & Biochemistry.

- CHE 4390 - Advanced Biochemistry Laboratory **Credits:** 3

Summary of Requirements

General Studies Requirements	33 credits

ESSJ Requirement	0-3 credits
Required Major Courses	40 credits
Required Biology, Math, and Physics Courses	25-26 credits
Additional Required Science Elective Courses	10 credits
Senior Experience	3 credits
Unrestricted Electives	5 ~~6~~-18 credits
Total for the Biochemistry Major, B.S.	**120 credits**

Required courses for the major may also count for General Studies and Multicultural requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Department of Communication Studies

Program Modification

Communication Studies Major

Department of Communication Studies

Available Program Format(s): In-Person, Hybrid, Online

College of Letters, Arts and Sciences

Department of Earth and Atmospheric Sciences

Program Modification

Geology Minor

Department of Earth and Atmospheric Sciences

College of Letters, Arts and Sciences

CIP Code: 40.0601

About the Program

Geology is a particularly integrative field because in order to understand Earth's physical processes, the vast network of interconnections within the Earth system must also be considered. As a consequence, geology incorporates ideas and perspectives from many different fields such as chemistry, physics, biology, astronomy, water science, environmental science, mathematics, art, and more. These many connections make geology an appropriate and fascinating minor for students with any major. The geology minor offers a strong foundation for understanding how Earth has developed and changed through time. Students should consult with a department advisor to assist with program planning.

Program Requirements

- This minor is a total of 24 credits.
- Students must complete each course with a grade of "C-" or better.

Required Courses: 20 credits

- GEL 1010 - Physical Geology **Credits:** 4
- GEL 1030 - Historical Geology **Credits:** 4
- GEL 3050 - Introduction to Mineralogy and Optical Mineralogy **Credits:** 4 *
- GEL 4450 - Sedimentary Geology and Stratigraphy **Credits:** 4 *
- GEL 4460 - Structural Geology and Mapping **Credits:** 4 *

Elective Courses: 4 credits

Students are required to select at least 4 semester hours from the list below.

- GEL 1020 - Geology of Colorado **Credits:** 3
- GEL 2530 - Introduction to Geologic Fieldwork **Credits:** 2 *
- GEL 3120 - Geomorphology **Credits:** 4 *
- GEL 3420 - Soil Science **Credits:** 3 *
- GEL 3440 - Energy and Mineral Resources **Credits:** 4 *
- GEL 3510 - Advanced Geology of Red Rocks Park and Vicinity **Credits:** 1 *
- GEL 3520 - Advanced Garden of the Gods-Front Range Geology **Credits:** 2 *
- GEL 3530 - Field Geology: Variable Topics **Credits:** 3 *
- GEL 3550 - Advanced Geology of the Great Sand Dunes National Monument **Credits:** 2 *
- GEL 3920 - Directed Study in Geology **Credits:** 1-4 *
- GEL 4000 - Geologic Hazards **Credits:** 3
- GEL 4050 - Igneous and Metamorphic Petrology **Credits:** 4 *
- GEL 4150 - Hydrology (Surface Water) **Credits:** 4 *
- GEL 4250 - Hydrogeology (Groundwater) **Credits:** 4 *
- GEL 3540 - Geologic Hazards: Denver and Vicinity **Credits:** 2 *
- ENV 3700 - Mountain Environments **Credits:** 3 *
- ENV 4010 - Environmental Hazards and GIS **Credits:** 4 *

Summary of Requirements

Required Courses	20 credits
Elective Courses	4 credits
Total for the Geology Minor	**24 credits**

* *Course requires additional prerequisites or corequisites*

Program Modification

Sustainability Studies Minor

Department of Earth and Atmospheric Sciences

College of Letters, Arts and Sciences CIP Code: 45.0701

About the Program

The Sustainability Studies Minor offers a comprehensive understanding of global sustainability challenges, providing students with the knowledge and skills to enhance career opportunities in both the private and public sectors. Students gain an analytical and conceptual framework for sustainability and practical tools for professional practice, exploring indicators for measuring development and identifying barriers to sustainability transformations. The curriculum covers resources, energy, and sustainable development, taught by faculty from the Department of Earth and

Atmospheric Sciences. This interdisciplinary minor can complement fields such as business, economics, education, engineering, environmental science, management, political science, sociology, and tourism.

Program Requirements

- The program consists of 18 total credits, including 12 required credits covering ecological, economic, and social aspects, as well as 6 elective credits.
- A grade of "C-" or better is required for each course.

Required Introductory Course: 3 credits

Students are required to take an introductory course that provides a foundation in sustainability studies (3 credits).

- GEG 1700 - Global Sustainability **Credits:** 3

Ecological Dimension Required Course: 3 credits

Students choose one of the following courses on the ecological dimension of sustainability (3 credits)

- GEG 3410 - Biogeography **Credits:** 3
- GEG 4430 - Habitat Planning **Credits:** 3

Economic Dimension Required Course: 3 credits

Students choose one of the following courses on the economic dimension of sustainability (3 credits)

- GEG 3360 - Economic Geography **Credits:** 3
- GEG 3720 - Global Sustainable Development **Credits:** 3
- GEG 4700 - Sustainability in Resource Management **Credits:** 3

Social Dimension Required Course: 3 credits

Students choose one of the following courses on the social dimension of sustainability (3 credits)

- ~~GEG 2300 - Geographic Analysis of Social Issues **Credits:** 3~~
- GEG 2700 - Geographies of Environmental Justice **Credits:** 3
- GEG 3700 - Urban Sustainability **Credits:** 3

Elective Courses: 6 credits

Students are required to select at least 6 semester hours from the list below.

Students may take a maximum of one of the following introductory courses for the minor (3 credits).

- ENV 1200 - Introduction to Environmental Science **Credits:** 3
- GEG 1300 - Introduction to Human Geography **Credits:** 3
- GEG 1910 - Global Water Concerns **Credits:** 3
- MTR 1600 - Global Climate Change **Credits:** 3

Students should take one or two of the following elective courses (3-6 credits)

- ~~GEG 2300 - Geographic Analysis of Social Issues **Credits:** 3~~
- GEG 2700 - Geographies of Environmental Justice **Credits:** 3
- GEG 3300 - Indigenous Territories and Spatial Justice **Credits:** 3
- GEG 3360 - Economic Geography **Credits:** 3
- GEG 3410 - Biogeography **Credits:** 3

- GEG 3440 - Energy and Mineral Resources **Credits:** 4
- GEG 3600 - Urban Geography **Credits:** 3
- GEG 3610 - Principles of Urban and Regional Planning **Credits:** 3
- GEG 3630 - Transportation Planning and Land Use **Credits:** 3
- GEG 3700 - Urban Sustainability **Credits:** 3
- GEG 3720 - Global Sustainable Development **Credits:** 3
- GEG 3920 - Directed Study in Geography **Credits:** 2-6
- GEG 4430 - Habitat Planning **Credits:** 3
- GEG 4610 - Advanced Urban and Regional Planning **Credits:** 3
- GEG 4700 - Sustainability in Resource Management **Credits:** 3
- GEG 4720 - Planning for Climate Change **Credits:** 3
- GEG 4950 - Internship in Geography **Credits:** 2-15
- GEG 4970 - Sustainability Practice Seminar **Credits:** 3
- GEG 4975 - Geography Capstone **Credits:** 3
- GIS 2250 - Geographic Information Systems **Credits:** 4
- GIS 4860 - GIS Applications **Credits:** 4
- ENV 3400 - Water Resources **Credits:** 3
- ENV 3620 - Resource Use and the Environment **Credits:** 3
- ENV 4960 - Global Environmental Challenges **Credits:** 3
- HLDR 3010 - Sustainable Hospitality and Tourism **Credits:** 3
- RTM 4000 - Destination Development **Credits:** 3
- SWK 3070 - Environmental Justice in Social Work **Credits:** 3

Summary of Requirements

Required Courses	12 credits
Elective Courses	6 credits
Total for the Sustainability Minor	**18 credits**

Department of Music

Program Modification

Music Major, B.A.

Department of Music

Available Program Format(s): In-Person

College of Letters, Arts and Sciences

CIP Code: 50.0901

About the Program

The Bachelor of Arts degree with concentrations in Music offers vigorous study of music alongside a strong liberal arts education, equipping students with versatile skills that are highly valued in the broad spectrum of music-related careers.

Student Outcomes

1. Be able to hear, identify, and work conceptually with the elements of music: rhythm, melody, harmony, and structure, and to be able to sight read music with fluency.
2. Understand compositional processes, aesthetic properties of style, and the ways these shape and are shaped by artistic and cultural forces

3. Have experienced a wide selection of musical styles, traditions, and compositions from a variety of sources through study, participation, and exposure through live performances.
4. Have the technical and artistic ability to perform in areas appropriate to the student's needs and interests, and to work independently and creatively.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.
- A grade of C- or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
- Arts and Humanities (6 credits)
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
- Social and Behavioral Sciences (6 credits)
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.
- Many programs include courses that meet this requirement. Students should consult with their advisor to determine what program courses may fulfill this requirement.

Core Requirements: 32 credits

The following courses are required for all music majors:

- MUS 0020 - Recital Attendance **Credits:** 0 *
- MUS 1110 - Music Theory I **Credits:** 3
- MUS 1120 - Music Theory Lab I **Credits:** 1
- MUS 1130 - Music Theory II **Credits:** 3
- MUS 1140 - Music Theory Lab II **Credits:** 1

- MUS 161B - Class Piano I **Credits:** 1 **
- MUS 162B - Class Piano II **Credits:** 1 **
- MUS 1710 - Private Instruction I **Credits:** 2 (primary performance area)
- MUS 1720 - Private Instruction II **Credits:** 2 (primary performance area)
- MUS 2110 - Music Theory III **Credits:** 3
- MUS 2120 - Music Theory Lab III **Credits:** 1
- MUS 2130 - Music Theory IV **Credits:** 3
- MUS 2140 - Music Theory Lab IV **Credits:** 1
- MUS 3050 - Musics of the World **Credits:** 3
- MUS 3210 - Western Music History I **Credits:** 3
- MUS 3220 - Western Music History II **Credits:** 3

Select one credit hour from the following options:

- MUS 3818 - Mariachi Ensemble **Credits:** 1
- MUS 3834 - Gamelan Ensemble **Credits:** 1
- MUS 3835 - African Drum and Dance Ensemble **Credits:** 1

**Students must enroll during each semester of individual instruction, and complete the requirement with a "Satisfactory" grade in order to be eligible to continue to enroll in individual instruction.*
***Students whose primary instrument is piano must substitute MUS 261B and MUS 262B, Class Piano III and IV, for MUS 161B and MUS 162B, Class Piano I and II, in the core requirements listed above.*

Specific Degree Requirements: 11 credits

- MUS 0020 - Recital Attendance **Credits:** 0 (two additional semesters)*
- MUS 1210 - Introduction to Musical Styles and Research **Credits:** 2
- MUS 1650 - Basic Music Technology **Credits:** 1
- MUS 2710 - Private Instruction III **Credits:** 2 (Primary Performance Area)
- MUS 2720 - Private Instruction IV **Credits:** 2
- Upper-division elective in Music Theory, History, Literature or Pedagogy (3 hours)
- MUS 4020 - Senior Seminar in Music **Credits:** 1 (Primary Performance Area)

**Students must enroll during each semester of individual instruction, and complete the requirement with a "Satisfactory" grade in order to be eligible to continue to enroll in individual instruction.*

Ensembles: 6 credits

Students enrolled in private lessons must enroll in the appropriate major ensemble during each semester of individual instruction.

Choose five hours from the following:

- MUS 3828 - Jazz Ensemble **Credits:** 1
- MUS 3829 - Jazz Combo **Credits:** 1
  For students whose primary instrument is a jazz instrument, the major ensemble is MUS 3828: Jazz Ensemble or MUS 3829: Jazz Chamber Ensemble, as assigned by the Director of Jazz Studies.
- MUS 3820 - Chorale **Credits:** 1
- MUS 3821 - University Treble Choir **Credits:** 1
- MUS 3822 - University Basso Choir **Credits:** 1
  For students whose primary instrument is voice, the major ensemble is choir (MUS 3820: Chorale, MUS 3821: University Treble Choir, or MUS 3822: University Basso Choir) as assigned by the Director of Choral Activities.
- MUS 3824 - Symphonic Band **Credits:** 1
- MUS 3825 - Wind Ensemble **Credits:** 1
  For students whose primary instrument is woodwinds, brass, or percussion, the major ensemble is band (MUS 3825: Wind Ensemble or MUS 3824: Symphonic Band) as assigned by the Director of Band Activities.

- MUS 3817 - String Sinfonietta **Credits:** 1
- MUS 3827 - Symphony Orchestra **Credits:** 1
  For students whose primary instrument is strings, the major ensemble is orchestra (MUS 3817: String Sinfonietta or MUS 3827: Symphony Orchestra), as assigned by the Director of Orchestral Activities.
- MUS 3830 - Guitar Ensemble **Credits:** 1
  For students whose primary instrument is guitar, the major ensemble is MUS 3830: Guitar Ensemble.

One hour:

- MUS 3819 - Chamber Music **Credits:** 1

Ensembles: Primary instrument in Piano and Organ: 6 credits

Choose five hours from the following:

- MUS 3817 - String Sinfonietta Credits: 1
- MUS 3820 - Chorale Credits: 1
- MUS 3821 - University Treble Choir Credits: 1
- MUS 3822 - University Basso Choir Credits: 1
- MUS 3824 - Symphonic Band Credits: 1
- MUS 3825 - Wind Ensemble Credits: 1
- MUS 3827 - Symphony Orchestra Credits: 1
  For students whose primary instrument is piano or organ, the major ensemble is choir (MUS 3820: Chorale (audition), MUS 3821: University Treble Choir (choral experience) or MUS 3822: University Basso Choir (choral experience), band (MUS 3825: Wind Ensemble (audition) or MUS 3824: Symphonic Band) or orchestra (MUS 3817: String Sinfonietta or MUS 3827: Symphony Orchestra), as assigned by the Director of Choral Activities, the Director of Band Activities, or the Director of Orchestral Activities.

One hour:

- MUS 3819 - Chamber Music **Credits:** 1

Music Theory Concentration

The BA in Music Theory allows students to pursue the Bachelor of Arts with a concentration in music theory. This allows students to pursue a degree that focuses on the analysis and formal structure of music.

Student Outcomes

- Be able to hear, identify, and work conceptually with the elements of music: rhythm, melody, harmony, and structure, and to be able to sight read music with fluency.
- Understand compositional processes, aesthetic properties of style, and the ways these shape and are shaped by artistic and cultural forces.
- Have experienced a wide selection of musical styles, traditions, and compositions from a variety of sources through study, participation, and exposure through live performances.
- Have the technical and artistic ability to perform in areas appropriate to the student's needs and interests, and to work independently and creatively.

Specific Concentration Requirements: 18 ~~28~~ credits

- MUS 0020 - Recital Attendance **Credits:** 0
- MUS 1210 - Introduction to Musical Styles and Research **Credits:** 2
- MUS 1650 - Basic Music Technology **Credits:** 1
- MUS 2150 - Jazz Theory **Credits:** 3
- ~~MUS 261B - Class Piano III **Credits:** 1~~
- ~~MUS 262B - Class Piano IV **Credits:** 1~~
- MUS 2710 - Private Instruction III **Credits:** 2
- MUS 2720 - Private Instruction IV **Credits:** 2
- MUS 3100 - Counterpoint **Credits:** 3

- ~~MUS 3510 - Basic Conducting **Credits:** 2~~
- ~~MUS 3640 - Improvisation **Credits:** 1~~
- MUS 3650 - Basic Techniques of Composition **Credits:** 2
- MUS 4020 - Senior Seminar in Music **Credits:** 1
- MUS 4110 - Analysis of Music **Credits:** 2
- ~~MUS 4800 - Seminar in Music Repertoire **Credits:** 2~~
- ~~PHY 2620 - Sound and Music **Credits:** 3~~

Additional Required Courses: 6 4 credits

Select six ~~four~~ credits from the following classes:

- MUS 261B - Class Piano III **Credits:** 1
- MUS 262B - Class Piano IV **Credits:** 1
- MUS 2660 - Electronic Music Composition **Credits:** 1
- MUS 3000 - Musics of America **Credits:** 3
- MUS 3020 - History of Jazz **Credits:** 3
- MUS 3150 - Arranging and Orchestration **Credits:** 2
- MUS 3160 - Jazz Composition and Arranging **Credits:** 1
- MUS 3410 - String Techniques and Pedagogy **Credits:** 1
- MUS 3430 - Woodwind Techniques and Pedagogy **Credits:** 1
- MUS 3450 - Brass Techniques and Pedagogy **Credits:** 1
- MUS 3460 - Percussion Techniques and Pedagogy **Credits:** 1
- MUS 3510 - Basic Conducting **Credits:** 2
- MUS 3540 - Advanced Conducting **Credits:** 2
- MUS 3640 - Improvisation **Credits:** 1
- MUS 4800 - Seminar in Music Repertoire **Credits:** 2
- PHY 2620 - Sound and Music **Credits:** 3

Additional Ensemble Hours: 2 credits

Choose two credits from the following:

- MUS 3816 - Early Music Ensemble **Credits:** 1
- MUS 3817 - String Sinfonietta **Credits:** 1
- MUS 3818 - Mariachi Ensemble **Credits:** 1
- MUS 3819 - Chamber Music **Credits:** 1
- MUS 3820 - Chorale **Credits:** 1
- MUS 3821 - University Treble Choir **Credits:** 1
- MUS 3822 - University Basso Choir **Credits:** 1
- MUS 3824 - Symphonic Band **Credits:** 1
- MUS 3825 - Wind Ensemble **Credits:** 1
- MUS 3826 - Secondary Instrument Band **Credits:** 1
- MUS 3827 - Symphony Orchestra **Credits:** 1
- MUS 3828 - Jazz Ensemble **Credits:** 1
- MUS 3829 - Jazz Combo **Credits:** 1
- MUS 3830 - Guitar Ensemble **Credits:** 1
- MUS 3831 - Percussion Chamber Ensemble **Credits:** 1
- MUS 3832 - Collaborative Piano **Credits:** 1
- MUS 3833 - Opera **Credits:** 1
- MUS 3834 - Gamelan Ensemble **Credits:** 1
- MUS 3835 - African Drum and Dance Ensemble **Credits:** 1

Songwriting and Music Production Concentration

The Music Major, B.A. with a concentration is Songwriting and Music Production allows students to enhance their Bachelor of Arts degree with additional courses in songwriting and music production. Students have numerous options to choose from a large range of courses in Music, Media Production, English, and related disciplines. This degree gives students a diverse and interdisciplinary experience that focuses on developing skills in writing songs and producing commercial music.

Student Outcomes

- Be able to hear, identify, and work conceptually with the elements of music: rhythm, melody, harmony, and structure, and to be able to sight read music with fluency.
- Understand compositional processes, aesthetic properties of style, and the ways these shape and are shaped by artistic and cultural forces.
- Have experienced a wide selection of musical styles, traditions, and compositions from a variety of sources through study, participation, and exposure through live performances.
- Have the technical and artistic ability to perform in areas appropriate to the student's needs and interests, and to work independently and creatively.
- Understand the interdisciplinary aspects of songwriting.
- Utilize various technological tools and concepts used in the production of commercial music.

Specific Concentration Requirements: 33 credits

Required Courses: 6 credit hours

- MUS 1060 - Basic Music Production **Credits:** 2
- MUS 3070 - Songwriting **Credits:** 2
- MUS 3650 - Basic Techniques of Composition **Credits:** 2

Choose 9 credit hours from the following:

- MUS 2450 - Jazz Improvisation I **Credits:** 1
- MUS 2660 - Electronic Music Composition **Credits:** 1
- MUS 3100 - Counterpoint **Credits:** 3
- MUS 3150 - Arranging and Orchestration **Credits:** 2
- MUS 3160 - Jazz Composition and Arranging **Credits:** 1
- MUS 3660 - Scoring for Film and Television **Credits:** 3
- MUS 3711 - Private Instruction V (Composition) **Credits:** 3
- MUS 4110 - Analysis of Music **Credits:** 2

Choose 9 credit hours from the following:

- ENG 2000 - Introduction to Textual Studies **Credits:** 3
- ENG 2500 - Introduction to Creative Writing **Credits:** 3
- ENG 3140 - Literary Genre: Poetry **Credits:** 4 *ENG 2000 prerequisite*
- ENG 3521 - Poetry Writing Workshop **Credits:** 4 *ENG 2500 prerequisite or permission*
- ENG 3535 - Essentials of Grant Writing **Credits:** 4
- ENG 4115 - Hip-Hop and Literature **Credits:** 4 *ENG 2000 prerequisite*
- MUS 1050 - History of Rock and Roll **Credits:** 3
- MUS 3015 - Global Pop **Credits:** 3
- MUS 3020 - History of Jazz **Credits:** 3
- MUS 3030 - Traditional American Improvised Styles **Credits:** 3
- MUS 3099 - The Beatles: Music and Culture **Credits:** 3
- MUS 3051 - From Blues to Hip Hop: African American Musical Heritage **Credits:** 3

Choose 9 credit hours from the following:

- JMP 1450 - Media Literacy **Credits:** 3
- JMP 2400 - Video Editing I **Credits:** 3
- JMP 2420 - Video Production I **Credits:** 3
- JMP 2430 - Introduction to Media Production **Credits:** 3
- JMP 2450 - Basic Media Production and Leadership **Credits:** 3
- JMP 2800 - Introduction to Audio Production **Credits:** 3

- JMP 3470 - Writing for Interactive Media **Credits:** 3
- JMP 3590 - Streaming Media Technologies **Credits:** 3 *JMP 2430 prerequisite*
- MKT 3000 - Principles of Marketing **Credits:** 3
- BUS 1850 - Introduction to Business **Credits:** 3

Additional Ensemble Hours: 2 credits

Choose 2 credit hours from the following:

- MUS 3816 - Early Music Ensemble **Credits:** 1
- MUS 3817 - String Sinfonietta **Credits:** 1
- MUS 3818 - Mariachi Ensemble **Credits:** 1
- MUS 3819 - Chamber Music **Credits:** 1
- MUS 3820 - Chorale **Credits:** 1
- MUS 3821 - University Treble Choir **Credits:** 1
- MUS 3822 - University Basso Choir **Credits:** 1
- MUS 3824 - Symphonic Band **Credits:** 1
- MUS 3825 - Wind Ensemble **Credits:** 1
- MUS 3826 - Secondary Instrument Band **Credits:** 1
- MUS 3827 - Symphony Orchestra **Credits:** 1
- MUS 3828 - Jazz Ensemble **Credits:** 1
- MUS 3829 - Jazz Combo **Credits:** 1
- MUS 3830 - Guitar Ensemble **Credits:** 1
- MUS 3831 - Percussion Chamber Ensemble **Credits:** 1
- MUS 3832 - Collaborative Piano **Credits:** 1
- MUS 3833 - Opera **Credits:** 1
- MUS 3834 - Gamelan Ensemble **Credits:** 1
- MUS 3835 - African Drum and Dance Ensemble **Credits:** 1

Musicology and Ethnomusicology Concentration

The BA in Musicology and Ethnomusicology allows students to pursue the Bachelor of Arts concentration with courses focused on musicology and ethnomusicology. The interdisciplinary nature of this degree enables students to choose courses across a variety of departments including Music, Anthropology, African and Africana Studies, Chicano/Chicana Studies, English, Gender Studies, Sociology, History, Religion, and Theatre. This allows students to pursue a degree that focuses on academic study in exploring a variety of ways people and cultures express music.

Student Outcomes

- Be able to hear, identify, and work conceptually with the elements of music: rhythm, melody, harmony, and structure, and to be able to sight read music with fluency.
- Understand compositional processes, aesthetic properties of style, and the ways these shape and are shaped by artistic and cultural forces.
- Have experienced a wide selection of musical styles, traditions, and compositions from a variety of sources through study, participation, and exposure through live performances.
- Have the technical and artistic ability to perform in areas appropriate to the student's needs and interests, and to work independently and creatively.
- Explore music in relation to its historical, cultural, and social context.

Specific Concentration Requirements: 30 credits

Required Courses: 6 credits

- MUS 1040 - Music, Race, and Power **Credits:** 3
- ANT 1310 - Introduction to Cultural Anthropology **Credits:** 3

Choose 12 credit hours from the following:

- MUS 1050 - History of Rock and Roll **Credits:** 3

- MUS 3000 - Musics of America **Credits:** 3
- MUS 3015 - Global Pop **Credits:** 3
- MUS 3020 - History of Jazz **Credits:** 3
- MUS 3816 - Early Music Ensemble **Credits:** 1
- MUS 3818 - Mariachi Ensemble **Credits:** 1
- MUS 3834 - Gamelan Ensemble **Credits:** 1
- MUS 3835 - African Drum and Dance Ensemble **Credits:** 1
- MUS 3895 - Hip-Hop Culture and Rap Music **Credits:** 3
- MUS 4000 - Musics of Latin America **Credits:** 3
- MUS 3051 - From Blues to Hip Hop: African American Musical Heritage **Credits:** 3

Choose 12 credit hours from the following:

- AAS 1010 - Introduction to Africana Studies **Credits:** 3
- ANT 1300 - Asia in Global Perspective **Credits:** 3 *Prerequisite of ENG 1009 or ENG 1010 or ENG 1020 or ENG 1021*
- ANT 1400 - Introduction to Folklore **Credits:** 3 *Prerequisite of ENG 1009 or ENG 1010 or ENG 1020 or ENG 1021*
- ANT 2330 - Cross-Cultural Communication **Credits:** 3
- ANT 2350 - African Peoples and Cultures **Credits:** 3
- ANT 2360 - Living Culture and Language of the Mexican and Chicano **Credits:** 3 *Prerequisite of CHS 1000 or CHS 1020*
- ANT 3320 - Anthropology of Japan **Credits:** 3 *Prerequisite of ANT 1310*
- ANT 3379 - Middle Eastern Cultures **Credits:** 3 *Prerequisite of ENG 1020 or ENG 1310 or PSC 1020*
- ANT 3391 - Approaching Culture: Past and Present **Credits:** 3 *Prerequisite of ANT 1310*
- CHS 1000 - Introduction to Chicana/o Studies **Credits:** 3
- CHS 1030 - Introduction to Social Justice and Decoloniality **Credits:** 3
- CHS 2020 - Chicano Poetry and Drama **Credits:** 3 *Prerequisite of CHS 2010 or permission*
- CHS 3880 - Exploring Folklore **Credits:** 3 *Prerequisite of ANT 1310 or CHS 1000*
- ENG 1150 - Introduction to Folklore **Credits:** 3 *Prerequisite of ENG 1009 or ENG 1010 or ENG 1020 or ENG 1021*
- ENG 2000 - Introduction to Textual Studies **Credits:** 3
- GWS 1001 - Gender in a Transnational World **Credits:** 3
- GWS 2400 - Women's Folklore and Folklife **Credits:** 3 *Prerequisite of ENG 1009 or ENG 1010 or ENG 1020 or ENG 1021*
- HIS 1030 - World History to 1500 **Credits:** 3
- HIS 1040 - World History since 1500 **Credits:** 3
- HIS 1150 - Race and Social Justice in U.S. History **Credits:** 3
- HIS 1250 - China and East Asia **Credits:** 3
- HIS 1270 - India and South Asia **Credits:** 3
- HIS 1300 - Introduction to Latin American History **Credits:** 3
- HIS 1940 - Survey of African History **Credits:** 3
- HIS 2090 - The Black Lives Matter Movement and the Origins of Modern Black Protest **Credits:** 3
- RLG 1040 - Asian Religions **Credits:** 3
- RLG 1050 - Judaism, Christianity, Islam **Credits:** 3
- RLG 3410 - South and East Asian Philosophies and Religions: Variable Topics **Credits:** 4 *Prerequisite of RLG 1040*
- RLG 3610 - Religious Studies: Variable Topics **Credits:** 4 *Prerequisite of RLG 1040 or 1050*
- SOC 1010 - People, Power, and Progress **Credits:** 3
- THE 3213 - Staging Cultures: Theatre, Drama, and Social Justice **Credits:** 3

Additional Ensemble Hours: 2 credits

- MUS 3816 - Early Music Ensemble **Credits:** 1
- MUS 3817 - String Sinfonietta **Credits:** 1
- MUS 3818 - Mariachi Ensemble **Credits:** 1
- MUS 3819 - Chamber Music **Credits:** 1
- MUS 3820 - Chorale **Credits:** 1
- MUS 3821 - University Treble Choir **Credits:** 1
- MUS 3822 - University Basso Choir **Credits:** 1
- MUS 3824 - Symphonic Band **Credits:** 1

- MUS 3825 - Wind Ensemble **Credits:** 1
- MUS 3826 - Secondary Instrument Band **Credits:** 1
- MUS 3827 - Symphony Orchestra **Credits:** 1
- MUS 3828 - Jazz Ensemble **Credits:** 1
- MUS 3829 - Jazz Combo **Credits:** 1
- MUS 3830 - Guitar Ensemble **Credits:** 1
- MUS 3831 - Percussion Chamber Ensemble **Credits:** 1
- MUS 3832 - Collaborative Piano **Credits:** 1
- MUS 3833 - Opera **Credits:** 1
- MUS 3834 - Gamelan Ensemble **Credits:** 1
- MUS 3835 - African Drum and Dance Ensemble **Credits:** 1

Senior Experience: 3 credits

- MUS 4950 - Senior Project **Credits:** 3

Summary of Requirements: Music Major, B.A.

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Core Requirements	32 credits
Specific Degree Requirements	11 credits
Ensembles or Ensembles: Primary Instrument in Piano and Organ	6 credits
Senior Experience	3 credits
Minor and Unrestricted Electives	32-41 credits
Total for the Music Major, B.A.	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Summary of Requirements: Music Major, B.A.: Music Theory Concentration

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Core Requirements	32 credits
Ensembles or Ensembles: Primary Instrument in Piano and Organ	6 credits
Specific Degree Requirements	18 ~~28~~ credits
Additional Required Courses	6 ~~4~~ credits
Additional Ensemble Hours	2 credits

Senior Experience	3 credits
Unrestricted Electives	17-29 ~~9-21~~ credits
Total for the Music Major, B.A.: Music Theory Concentration	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Summary of Requirements: Music Major, B.A.: Songwriting and Music Production Concentration

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Core Requirements	32 credits
Specific Degree Requirements	33 credits
Ensembles	6 credits
Additional Required Courses	11 credits
Additional Ensemble Hours	2 credits
Senior Experience	3 credits
Unrestricted Electives	0-6 credits
Total for the Music Major, B.A.: Songwriting and Music Production Concentration	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Summary of Requirements: Music Major, B.A.: Musicology and Ethnomusicology Concentration

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Core Requirements	32 credits
Specific Degree Requirements	30 credits
Ensembles	6 credits
Additional Required Courses	11 credits
Additional Ensemble Hours	2 credits

Senior Experience	3 credits
Unrestricted Electives	0-18 credits
Total for the Music Major, B.A.: Musicology and Ethnomusicology Concentration	**120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Department of Philosophy

Department of Philosophy Available Program Format(s): In-Person, Hybrid, Online

College of Letters, Arts and Sciences CIP Code: 38.0101

Department of Physics

Program Modification

Physics Minor

Department of Physics

College of Letters, Arts and Sciences CIP Code: 40.0801

About the Program

Physics utilizes practical math to make predictions about the natural world. A minor in physics cements the experimental expertise that scientists require and provides a strong basis for understanding how science is applied in society.

Program Requirements

- This program is a total of 19 credits, plus an additional 8 credits of required ancillary courses.
- A grade of "C-" or better is required for each course in this program to count toward the minor. Students should note that programs differ in the minimum grade required.
- Also note that per university policy at least three 3000- or 4000-level credits are required for a minor.

Required Ancillary Courses: 8 credits

All students must complete the following courses.

- MTH 1410 - Calculus I **Credits:** 4
- MTH 2410 - Calculus II **Credits:** 4

Required Courses: 14 credits

- PHY 2311 - General Physics I **Credits:** 4
- PHY 2321 - General Physics I Laboratory **Credits:** 1
- PHY 2331 - General Physics II **Credits:** 4
- PHY 2341 - General Physics II Laboratory **Credits:** 1
- PHY 3111 - Modern Physics I **Credits:** 4

Elective Courses: 5 credits

A minimum of 5 additional credits, including at least 3 upper division (3000+ level) credits, must be selected from the following list:

- AST 3141 - Astronomical Techniques I **Credits:** 3
- PHY 3231 - Vibrations, Waves, and Mathematical Methods **Credits:** 4
- ~~PHY 3111 - Modern Physics I **Credits:** 4~~
- PHY 3121 - Modern Physics II **Credits:** 3
- PHY 2821 - Sophomore Physics Laboratory **Credits:** 1
- PHY 3311 - Analytical Mechanics **Credits:** 4
- PHY 3411 - Thermal Physics **Credits:** 4
- PHY 3711 - Junior Physics Laboratory **Credits:** 2
- PHY 3811 - Quantum Physics I **Credits:** 4
- PHY 3341 - Electricity and Magnetism I **Credits:** 4
- PHY 4330 - Electricity and Magnetism II **Credits:** 3
- PHY 4510 - Optics **Credits:** 3
- PHY 4050 - Astrophysics **Credits:** 3
- PHY 4040 - Planetary Physics **Credits:** 3
- PHY 4611 - Computational Physics **Credits:** 3
- PHY 4650 - Solid State Physics **Credits:** 3
- PHY 4711 - Senior Physics Laboratory **Credits:** 2
- PHY 4810 - Quantum Physics II **Credits:** 3
- PHY 4820 - Subatomic Physics **Credits:** 3
- PHY 4950 - General Relativity **Credits:** 3

Summary of Requirements

Ancillary Courses	8 credits
Required Courses	14 credits
Elective Courses	5 credits
Total for the Physics Minor	**27 credits**

Note:

A one-year sequence of PHY 2010 - PHY 2020 - PHY 2030 - PHY 2040 may be substituted for the PHY 2311 - PHY 2331 - PHY 2321 - PHY 2341 requirements with the consent of the Physics Department.

Department of Sociology and Anthropology

Program Modification

Asian Studies Minor

Department of Sociology and Anthropology

College of Letters, Arts and Sciences CIP Code: 05.0103

About the Program

The Asian Studies minor offers students an opportunity to pursue interests in contemporary Asian societies, adding an important global focus to their major studies. Students are encouraged to apply a range of research methodologies with a focus on interdisciplinarity with course offerings from

various disciplines in humanities and social sciences, including Anthropology, Sociology, History, Political science, Gender and Women's Studies, Linguistics, Literature, Music, Art, Geography, and Philosophy. During the process, students develop critical thinking abilities and problem-solving skills which prepare them to successfully join the workforce of Colorado and/or pursue an advanced degree.

Program Requirements

- A grade of "D-" or better is required for each course in this program to count toward the minor.
- Students should note that programs differ in the minimum grade required. Asian Studies minors must have an overall GPA of 2.00 to graduate.

Required Courses: 3 credits

- SOC 1300 - Asia in Global Perspective **Credits:** 3
  This course is crosslisted and may by taken as ANT 1300/GWS 1300/PSC 1300/HIS 1260/LANG 1260.

Elective Courses: 15 credits

Choose at least 15 credits from the following (at least 6 hours must be upper division).

- ANT 2330 - Cross-Cultural Communication **Credits:** 3
- ANT 3320 - Anthropology of Japan **Credits:** 3
- ANT 3330 - Japan: Culture, Communication, and Identity **Credits:** 3-6
- ARTH 3340 - Asian Art **Credits:** 3
- CHI 1010 - Elementary Chinese I **Credits:** 5
- CHI 1020 - Elementary Chinese II **Credits:** 5
- GEG 1000 - World Regional Geography **Credits:** 3
- GWS 3395 - Transnational Genders and Sexualities **Credits:** 3
- HIS 1250 - China and East Asia **Credits:** 3
- HIS 1270 - India and South Asia **Credits:** 3
- HIS 3700 - Modern China **Credits:** 3
- HIS 3740 - Modern Japan **Credits:** 3
- HIS 3750 - India and South Asia since 1500 **Credits:** 3
- PUB 3410 - Ayurveda **Credits:** 3
- PUB 3500 - Traditional Chinese Medicine **Credits:** 3
- PUB 3810 - Men Across Cultures **Credits:** 3
- JPS 1010 - Elementary Japanese I **Credits:** 5
- JPS 1020 - Elementary Japanese II **Credits:** 5
- JPS 2010 - Intermediate Japanese I **Credits:** 5
- JPS 2020 - Intermediate Japanese II **Credits:** 5
- JPS 2110 - Conversational Japanese I **Credits:** 3
- JPS 2120 - Kanji I **Credits:** 3
- JPS 3110 - Conversational Japanese II **Credits:** 3
- JPS 3120 - Kanji II **Credits:** 3
- JPS 3200 - Japanese through Media Culture **Credits:** 3
- JPS 3210 - Advanced Japanese: Major Topics **Credits:** 3
- KOR 1010 - Elementary Korean I **Credits:** 5
- MUS 3834 - Gamelan Ensemble **Credits:** 1
- PSC 1020 - Comparative Politics **Credits:** 3
- PSC 3450 - Politics of China, Korea, and Japan **Credits:** 3
- PSC 3640 - Regional Defense and Development: East Asia **Credits:** 3
- RLG 1040 - Asian Religions **Credits:** 3
- RLG 3410 - South and East Asian Philosophies and Religions: Variable Topics **Credits:** 4
- SOC 1080 - Love and Family in East Asia **Credits:** 3
- SOC 3200 - Asian American Experiences **Credits:** 3

Summary of Requirements

Required Courses	3 credits
Elective Courses	15 credits
Total for the Asian Studies Minor	**18 credits**

Program Modification

Sociology Major, B.A.

Department of Sociology and Anthropology

Available Program Format(s): In-Person, Hybrid, Online

College of Letters, Arts and Sciences

Department of Theatre and Dance

New Program

Theatre Major, B.A. with K-12 Theatre Teacher Licensure Concentration

Department of Theatre and Dance

Available Program Format(s): In-Person

College of Letters, Arts and Sciences

CIP Code: 50.0501

About the Program

Theatre is "Equipment for Living." That's the philosophy behind the MSU Denver Theatre program.

A Bachelor of Arts degree in Theatre with a licensure in Theatre Education not only prepares students to tell powerful, transformative stories, but to impart that ability to high school students. The program will promote additional skills in teamwork, communication, and problem-solving.

As a Theatre major, students study the academic side of Theatre as well as receive opportunities to perform and work in campus productions, serve as a production dramaturge, become part of an MSU Denver touring company, intern at local theatres and participate in regional and national theatre competitions.

MSU Denver's Theatre program is accredited by the National Association of Schools of Theatre. The program not only prepares you for the classroom and graduate studies, but also provides the training necessary for careers in voice, film and theatre and other media. Many Theatre majors also translate their Theatre degrees into careers such as sales, law, business, communications and more.

Student Outcomes

- Demonstrate a solid understanding of the business of theatre and theatre education, especially an understanding of how to secure, maintain, and sustain employment as a teaching artist and/or educator.
- Demonstrate the ability to integrate the skills of one's chosen theatre concentration (performance, design/tech, directing, etc.) with pedagogical practices in theatre education.
- Demonstrate the ability to think logically, critically, and pedagogically when analyzing, designing, and facilitating theatre learning experiences.
- Demonstrate the ability to verbalize and/or write coherent and insightful criticism of dramatic literature, theatre productions, and student work.
- Articulate the role of the arts-and theatre specifically-in diverse cultures represented in schools, communities, and across the country, and communicate its value to students, parents, and colleagues.

- Work effectively and productively as a member of collaborative groups, including students, colleagues, and community partners.
- Demonstrate the discipline, attitude, perseverance, and focus necessary for a career as a theatre educator and artist.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of 120 semester hours are required for graduation.
- A grade of C- or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
- Arts and Humanities (6 credits)
- Historical (3 credits)
- Natural and Physical Sciences (6 credits)
- Social and Behavioral Sciences (6 credits)
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.
- Students should consult with their advisor to determine what program courses may fulfill this requirement.

Required Core Courses for all Theatre Majors: 37 credits

- THE 1240 - Stagecraft **Credits:** 3
- THE 2201 - Voice and Speech I **Credits:** 3
- THE 2215 - Self-Care in Theatre **Credits:** 3
- THE 2220 - Acting I **Credits:** 3
- THE 2248 - Wardrobe Technology for Everyone **Credits:** 3
- THE 2270 - Production Analysis **Credits:** 3
- THE 2280 - Theatre Career Development **Credits:** 3
- THE 3211 - World Theatre History I **Credits:** 3
- THE 3212 - World Theatre History II **Credits:** 3

- THE 3220 - Stage Movement **Credits:** 3
- THE 3222 - Devised Theatre **Credits:** 3
- THE 4230 - Stage Directing **Credits:** 3
- THE 4260 - Theatre: Practicum I **Credits:** 1

Required Education Courses for all Theatre Education Majors: 28 credits

All students must complete the following courses in Licensure Education Core. Before registering for these courses, students must obtain at least provisional admission to the School of Education. Application information can be found on the School of Education website. Six or more credits in this category can also satisfy General Studies requirements for Social and Behavioral Sciences. Three credits in this category can also satisfy ESSJ requirement.

- CLD 3510 - Perspectives in Education for Culturally and Linguistically Diverse Learners **Credits:** 3
- EDS 3130 - Democratic Foundations of Education, Schooling, and Learning **Credits:** 3
- EDS 3150 - Critical Sociocultural Lenses for Teachers **Credits:** 3
- EDS 3170 - Building Humanizing and Culturally Sustaining School Ecosystems **Credits:** 3
- EDS 3210 - Design of Curriculum, Instruction, and Assessment in Secondary Schools **Credits:** 3
- EDS 3240 - Field Experience: Curriculum Planning and Assessment in Secondary Schools **Credits:** 1
- EDS 3280 - Disciplinary Literacy in Culturally and Linguistically Diverse Schools **Credits:** 3
- EDT 3010 - Integrating Educational Technology into Teaching **Credits**: 3
- SED 3600 - Exceptional Learners in the Classroom **Credits:** 3
- THE 3265 - Teaching General Theatre **Credits:** 2
- THE 4225 - Field Experience in Teaching Theatre in K-12 **Credits:** 1

Major Electives: 14 credits

All courses with a “THE” prefix, except those courses required for the major, including internships, may be selected in consultation with an approved Theatre advisor within the Department of Theatre and Dance.

Senior Experience Education: 12 credits

Student Teaching offers an essential conclusion to this degree program. Typically, students should register for 12 credits of EDS 4290 - Student Teaching and Seminar: Secondary 7-12 in their final semester. Students who register for only 6 credits of EDS 4290 - Student Teaching and Seminar: Secondary 7-12 should also register for 6 credits of CLD 4590 - Culturally and Linguistically Diverse: ESL Student Teaching and Seminar.

- EDS 4290 - Student Teaching and Seminar: Secondary 7-12 **Credits:** 6,12

Senior Experience: 3 credits

- THE 4230 - Stage Directing **Credits:** 3 (credits counted in major)

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Major Required Courses	37 credits
Foundation and Methods of K-12 Education	28 credits
Major Electives	14 credits
Senior Experience Education	12 credits
Senior Experience	(counted in major)
Unrestricted Electives	0-2 credits
Total for the Theatre Major, B.A. with K-12 Theatre Teacher Licensure Concentration	**120-127 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Gender Institute for Teaching and Advocacy

Program Modification

Gender, Women, and Sexualities Studies Major, B.A.

Gender Institute for Teaching and Advocacy

Available Program Format(s): In-Person, Hybrid, Online

College of Letters, Arts and Sciences

School of Education

Department of Elementary Education and Literacy

New Program

Elementary Education Major, B.A.

Department of Elementary Education and Literacy

Available Program Format(s): In-Person

School of Education

About the Program
The Bachelor of Arts (BA) degree in Elementary Education features best practices denoted in current literature on teacher education as facilitating development of highly effective elementary teachers. The program's clinical foundation provides teacher candidates authentic opportunities to learn and apply best practices while collaborating with some of the most effective teachers and schools in the Denver Metropolitan area. Students completing the Elementary Education Major complete coursework and participate in supervised clinical experiences. For those seeking a state teaching licensure in Elementary Education, this includes a culminating two-semester residency that supports development of the knowledge, understandings, and competencies required of successful elementary teachers in widely diverse classrooms.

Student Outcomes
The Bachelor of Arts degree in Elementary Education is an extended major with increasingly rigorous courses that build upon foundational introductory coursework for all Elementary Education majors. In addition, each student selects a concentration to specialize their professional knowledge. The culminating clinical experience is a two-semester teacher residency program completed in cohort-based schools within our partner districts in the Denver metropolitan area. Teacher candidates pursuing licensure graduate with appropriate preparation for initial licensure in Elementary Education in Colorado. Students within the Elementary Education Major have an option to select a non-licensure pathway with alternative coursework in place of the final residency coursework. Please visit the School of Education (SOE) website for information on admission to this program.

General Degree Requirements

To earn a degree, students must satisfy all requirements in each of the four areas below, in addition to their individual major requirements.

- Completion Requirements for Degrees and Certificates
- General Studies Requirements
- Ethnic Studies & Social Justice Graduation Requirement
- Senior Experience Graduation Requirement

Program Requirements

- A total of at least 120 semester hours are required for graduation.
- A grade of C- or better is required for each course in this program to count toward the bachelor's degree. Students should note that programs differ in the minimum grade required.
- All candidates for a BA in Elementary Education must satisfy General Studies, ESSJ, Global Diversity, and all Elementary Education program requirements.
- Please note: The majority of field experience hours and all clinical experience hours occur during the elementary school day in university-designated classrooms supervised by licensed teachers.
- This program is defined as an extended major.

General Studies Requirements: 33 credits

Students should consult the General Studies Requirements for a list of courses that fulfill the General Studies Requirements for degree completion.

- Written Communication (6 credits)
- Oral Communication (3 credits)
- Quantitative Literacy (3 credits)
    - We recommend the following courses for this category: MTH 1610 - Integrated Mathematics I Note: MTH 1610 also satisfies a requirement in the major.
- Arts and Humanities (6 credits)
    - We recommend the following courses for this category: ARTE 2060 - Imagine More and ENG 2460 - Introduction to Children's Literature
- Historical (3 credits)
    - We recommend one of the following courses for this category: HIS 1210 - American History to 1865 or HIS 1220 - American History since 1865
- Natural and Physical Sciences (6 credits)
    - We recommend the following courses for this category: SCI 2600 - Integrated Biology and Earth Science and SCI 2610 - Integrated Physics and Chemistry Note: SCI 2600 and SCI 2610 also satisfy requirements in the major.
- Social and Behavioral Sciences (6 credits)
    - We recommend the following courses for this category: GEG 1000 - World Regional Geography and PSY 1800 - Developmental Educational Psychology Note: GEG 1000 also satisfies University Global Diversity course requirement
- Global Diversity (0 or 3 credits**)

*** Students will fulfill the global diversity requirement by taking an approved course within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences.*

Ethnic Studies & Social Justice Requirement: 0 or 3 credits

- Students should consult the Ethnic Studies & Social Justice Graduation Requirement for a list of courses that fulfill the ESSJ Requirement for degree completion.
- Many programs include courses that meet this requirement. Students should consult with their advisor to determine what program courses may fulfill this requirement.
    - We recommend the following course: EDU 1111 - Education within Diverse Communities Note: EDU 1111 also satisfies a requirement in the major.

Core Courses Required for the Major: 62 credits

All Elementary Education Majors, whether licensure or non-licensure, complete the following core coursework. Registering for 3000-level methods courses and clinical fields requires application to the School of Education. Up to 9 credits indicated below can also be used to fulfill General Studies requirements.

- CLD 3510 - Perspectives in Education for Culturally and Linguistically Diverse Learners **Credits:** 3
- CLD 3910 - Assessment of English Language Learners **Credits:** 3
- EDT 3010 - Integrating Educational Technology into Teaching **Credits:** 3
- EDU 1111 - Education within Diverse Communities **Credits:** 3 (Note: EDU 1111 also satisfies the University ESSJ requirement.)

- EDU 2111 - Becoming an Elementary Teacher **Credits:** 3
- EDU 3222 - Developing Differentiated Learning Environments **Credits:** 3
- EDU 3444 - Instructional and Assessment Practices in Differentiated Classrooms **Credits:** 3
- EDU 3445 - Field Experience: Assessment Practices in Differentiated Classrooms **Credits:** 1
- EDU 3550 - Teaching Elementary School Science and Health **Credits:** 3
- EDU 3665 - Field Experience: Teaching Science, Health and Mathematics **Credits:** 1
- EDU 3666 - Teaching Elementary School Mathematics **Credits:** 3
- EDU 4011 - Teaching Elementary School Social Studies **Credits:** 3
- MTH 1610 - Integrated Mathematics I **Credits:** 3 (Note: MTH 1610 also satisfies a University General Studies requirement.)
- MTH 2620 - Integrated Mathematics II **Credits:** 3
- MTL 3600 - Mathematics of the Elementary Curriculum **Credits:** 3
- PETE 2130 - Health and Physical Education for Elementary Teachers **Credits:** 2
- RDG 3111 - Emergent Literacy K-3 **Credits:** 3
- RDG 3222 - Teaching Elementary School Writing **Credits:** 3
- RDG 3333 - Intermediate Literacy 4-6 **Credits:** 3
- RDG 3335 - Field Experience: K-6 Literacy **Credits:** 1
- SCI 2600 - Integrated Biology and Earth Science **Credits:** 3 (Note: SCI 2600 also satisfies a University General Studies requirement.)
- SCI 2610 - Integrated Physics and Chemistry **Credits:** 3 (Note: SCI 2610 also satisfies a University General Studies requirement.)
- SED 3600 - Exceptional Learners in the Classroom **Credits:** 3

Students in the Elementary Education Major may differentiate their studies by choosing one of two pathways: Licensure (22 credits leading to a state teaching license) or Non-Licensure (18 credits).

Licensure Pathway: 22 credits

Teacher candidates in the Elementary Education Major, who seek a state teaching license, complete a two-semester, culminating clinical experience: Residency I (3 days per week) and Residency II (4 days per week). One co-requisite course is paired with each residency semester (RDG 4444 and EDU 4222).

- EDU 4222 - Designing Instruction For All Learners **Credits:** 3
- RDG 4444 - Accountability in Whole Class Literacy Assessment **Credits:** 3

All teacher candidates (2018 catalog year or later) within the licensure pathway complete 7 credits of Residency I. For most teacher candidates, this is EDU 4115. However, teacher candidates earning an endorsement in Culturally and Linguistically Diverse (CLD) Education or as a CLD Bilingual Education Specialist, complete EDU 4116 CLD Residency I instead of EDU 4115 Residency I. All state initial licensure requirements must be met in order to qualify for the additional CLD or CLD BES endorsement.

- EDU 4115 - Residency I **Credits:** 3-7
  or
- EDU 4116 - CLD Residency I **Credits:** 3-7

All teacher candidates seeking initial teacher licensure complete 9 credits of Residency II. Teacher candidates, who are completing the requirements for an additional endorsement in CLD or CLD BES, complete EDU 4226 CLD Residency II instead of EDU 4225 Residency II. All state licensure requirements must be met in order to qualify for the additional state CLD or CLD BES endorsement.

- EDU 4225 - Residency II **Credits:** 9 *
  or
- EDU 4226 - CLD Residency II **Credits:** 9 *

*Either EDU 4225 or EDU 4226 can fulfill the Senior Experience requirement.

Non-Licensure Pathway: 18 credits

Students majoring in Elementary Education may differentiate their plan of study by choosing 18 credits of coursework that supports a professional pathway related to educational studies. Non-licensure pathway students are encouraged to complete EDS 4010 Action Research within Communities of Practice, as a means to bridge their differentiated studies to their future professional communities through the high leverage practice of engaging in undergraduate research.

- EDS 4010 - Action Research within Communities of Practice **Credits:** 3 (fulfills the Senior Experience requirement)
- PSY 1001 - Introductory Psychology **Credits:** 3
- PSY 2850 - Psychology of Sexuality **Credits:** 3
- PSY 3000 - Theories of Personality **Credits:** 3
- PSY 3030 - Cultural Psychology **Credits:** 3
- PSY 3050 - Psychology of Gender **Credits:** 3
- PSY 3070 - Psychology of Sexual Orientation **Credits:** 3
- PSY 3170 - Social Justice: Self and Citizenship: A Service Learning Course **Credits:** 3
- PSY 3370 - Undergraduate Research Assistant **Credits:** 3
- PSY 3390 - Undergraduate Teaching Assistant Training **Credits:** 3
- PSY 3410 - Health Psychology **Credits:** 3
- PSY 3450 - Organizational Psychology **Credits:** 3
- PSY 3460 - Psychology of Play **Credits:** 3
- PSY 3700 - Psychology of Group Prejudice **Credits:** 3
- PSY 3920 - Gender Politics of Health **Credits:** 3
- PSY 4100 - Clinical/Counseling Psychology: Treatment, Practice, and Skills **Credits:** 3

Concentration Choices: 13-15 credits

Students further differentiate their plan of study through selecting one of the following ~~15-credit~~ concentrations. While students are only required to complete one concentration, they may choose to declare an additional concentration.

Applied Developmental Psychology Concentration

- PSY 1001 - Introductory Psychology **Credits:** 3
- PSY 3250 - Child Psychology **Credits:** 3
- PSY 3340 - Cognitive Development and Learning **Credits:** 3
- PSY 3350 - Psychology of Social Development **Credits:** 3

Choose one elective from the following:

- PSY 2210 - Psychology of Human Development **Credits:** 3
- PSY 3240 - Infancy **Credits:** 3
- PSY 3260 - Psychology of Adolescence **Credits:** 3
- PSY 3400 - Child Psychopathology **Credits:** 3

Ethnic Studies Concentration

Required Course (choose one of the following):

- AAS 1030 - Introduction to Social Justice and Decoloniality **Credits:** 3
- CHS 1030 - Introduction to Social Justice and Decoloniality **Credits:** 3
- GWS 1030 - Introduction to Social Justice and Decoloniality **Credits:** 3
- NAS 1030 - Introduction to Social Justice and Decoloniality **Credits:** 3

Choose one AAS course from the following:

- AAS 1010 - Introduction to Africana Studies **Credits:** 3
- AAS 1130 - Survey of African History **Credits:** 3
- AAS 2200 - Politics and Black People **Credits:** 3

Choose one CHS course from the following:

- CHS 1000 - Introduction to Chicana/o Studies **Credits:** 3
- CHS 3020 - Chicana/o History, 1836 to the Present **Credits:** 3
- CHS 3300 - Education of Chicano Children **Credits:** 3
- CHS 3460 - Chicana Feminisms **Credits:** 3

Choose one GWS course from the following:

- GWS 1001 - Gender in a Transnational World **Credits:** 3
- GWS 1200 - Sexuality, Race, and Power **Credits:** 3
- GWS 1550 - Introduction to Trans Studies **Credits:** 3

Choose one elective from the following:

- AAS 2010 - Interdisciplinary Research Methods in Social Issues **Credits:** 3
- AAS 2100 - Women of Color **Credits:** 3
- CHS 2030 - Interdisciplinary Research Methods in Social Issues **Credits:** 3
- CHS 2100 - Women of Color **Credits:** 3
- GWS 2010 - Interdisciplinary Research Methods in Social Issues **Credits:** 3
- GWS 2100 - Women of Color **Credits:** 3
- NAS 1000 - Introduction to Native American Studies **Credits:** 3

Culturally and Linguistically Diverse Concentration

Students completing the CLD concentration as part of the licensure pathway can apply for an additional state CLD teaching endorsement upon completing all state initial licensure requirements. Students completing the CLD concentration as part of the non-licensure pathway would not qualify for a state endorsement.

- ANT 2330 - Cross-Cultural Communication **Credits:** 3
  or
- COMM 3000 - Race, Racism, and Communication in the United States **Credits:** 3

- CLD 2890 - Second Language Acquisition: K-12 Educational Implications **Credits:** 3
- CLD 3290 - Literacy Development for Culturally and Linguistically Diverse Students K-12 **Credits:** 3
- CLD 3310 - Integrated Methods of Teaching English as a Second Language **Credits:** 3

Choose one elective from the following:

- CHS 3300 - Education of Chicano Children **Credits:** 3
- CLD 3940 - Spanish Bilingual Language and Literacy Development **Credits:** 3
  Note: CLD 3940 Bilingual Language and Literacy is taught mainly in Spanish. This course is one of the courses required for the endorsement in Culturally and Linguistically Diverse (CLD) Bilingual Education Specialist K-12 in Spanish and English.
- LING 3011 - Analyzing English **Credits:** 4
- Any level language classes whether transfer, prior learning, or those taken at MSU Denver will be accepted as fulfilling this requirement. MSU Denver course prefixes include ASL, CHI, FRE, GER, ITA, JPS, LANG, SPA. Prior learning includes Advanced Placement (AP), College Level Examination Program (CLEP), or International Baccalaureate (IB) credit. General Studies status is not required.

Disciplinary Knowledge Concentration

Choose at least one elective of the following courses:

- ECO 2010 - Principles of Macroeconomics **Credits:** 3
  or
- ECO 2020 - Principles of Microeconomics **Credits:** 3
- HIS 1030 - World History to 1500 **Credits:** 3
- HIS 1040 - World History since 1500 **Credits:** 3
- HIS 3425 - Colorado and the Nation **Credits:** 3
- HIS 3430 - American Revolution and Early National Period, 1763-1848 **Credits:** 3
- PSC 1010 - American National Government **Credits:** 3

  - Choose at least one 3-credit elective in the Natural and Physical Sciences (prefixes: BIO, PHY, GEL, ENV, MTR, GEG, CHE).
  - Choose a remaining combination of courses among those listed above in order to total 15 credits in the concentration.

- Note: In addition to at least one of the Social Science courses listed above and at least one of the Natural and Physical Science courses, students select additional electives from the options listed above for either Social Sciences or Natural and Physical Sciences so that their overall total for the concentration is at least 15 credits. These courses do not need General Studies designation.

Mathematics Concentration

- MTL 3750 - Number and Algebra in the K-8 Curriculum **Credits:** 3
- MTL 3760 - Geometry and Statistics in the K-8 Curriculum **Credits:** 3

Choose one of the following three options in order to meet the Algebra requirement:

- MTH 1108 - College Algebra Stretch, Part I **Credits:** 4
  and
- MTH 1109 - College Algebra Stretch, Part II **Credits:** 4 Note: MTH 1108 and MTH 1109 counts as two of the five courses for the concentration.
  or
- MTH 1110 - College Algebra for Calculus **Credits:** 4
  or
- MTH 1112 - College Algebra Through Modeling **Credits:** 4

Choose among the following mathematics or mathematics education elective courses for a total of 5 credits.

- MTH 1210 - Introduction to Statistics **Credits:** 4
- MTL 4630 - Teaching Secondary Mathematics **Credits:** 4
- MTL 3850 - STEM Teaching and Learning **Credits:** 2
- MTL 3858 - STEM Teaching and Learning Practicum **Credits:** 1
- Or any mathematics course that has MTH 1110 as a prerequisite.
  Notes:
  - MTL 3630 is recommended for teacher candidates who intend to add a middle school mathematics endorsement to their elementary license. For teacher candidates in the Elementary Education Mathematics concentration, the course instructor will waive the co-requisite field.
  - In order to count MTL 3850 towards the concentration, students must also participate in the STEM Learning Assistant program.

Bilingual Education Specialist (BES) Concentration

Students completing the BES concentration as part of the licensure pathway can apply for an additional state BES teaching endorsement upon completing all state initial licensure requirements.

- CLD 2890 Second Language Acquisition: K-12 Educational Implications **Credits:** 3
- CLD 3930 Spanish Bilingual Education Theory and Research **Credits:** 3
- CLD 3940 Spanish Bilingual Language and Literacy Development **Credits:** 3
- CLD 3950 Spanish Bilingual Methods and Materials **Credits:** 3
- CLD 3951 Spanish Culturally and Linguistically Diverse (CLD) Bilingual Education Specialist K-12 Added Endorsement Field Experience **Credits:** 1

Senior Experience: 3-7 credits

For students completing the Licensure Pathway, the following will fulfill the Senior Experience requirement:

- EDU 4115 - Residency I **Credits:** 3-7
  or
- EDU 4116 - CLD Residency I **Credits:** 3-7

For students completing the Non-Licensure Pathway, the following course will fulfill the Senior Experience requirement:

- EDS 4010 - Action Research within Communities of Practice **Credits:** 3

Please note: Senior Experience course credit is counted elsewhere in the major

Summary of Requirements

General Studies Requirements	33 credits
ESSJ Requirement	0-3 credits
Required Courses	62 credits
Licensure Pathway	22 credits
Non-Licensure Pathway	18 credits
Selected Concentration	13-15 credits
Senior Experience	counted elsewhere in major
Unrestricted Electives	0-~~10~~ 12 credits
Total for the Elementary Education Major, B.A.	**Minimum of 120 credits**

Required courses for the major may also count for General Studies and ESSJ requirements, so the total credits listed may be greater than the number required to complete the degree. Therefore, it is important that you work with your advisor to make sure you are meeting requirements for your degree.

Department of Secondary, K-12 and Educational Technology

New Program

K-12 Theatre Licensure: Post-Baccalaureate Program

The Post-Baccalaureate Program in Theatre Education is designed for individuals who have completed a bachelor's degree in theatre or a related field and seek initial teacher licensure in theatre for K-12 settings. This program provides the pedagogical training, field experience, and professional preparation necessary to become effective, licensed theatre educators.

K-12 Theatre Teacher Licensure: Post-Baccalaureate

Theatre content coursework aligned with all current Colorado teacher licensure endorsement standards for K-12 Theatre teachers is required. Coursework to meet these standards typically falls under the following categories.

- Directing
- Acting
- Technical Theatre
- Theatre History

Licensure Education Core

All students must complete the following courses in Licensure Education Core. Before registering for these courses, students must obtain at least provisional admission to the School of Education. Application information can be found on the School of Education website.

- CLD 3510 - Perspectives in Education for Culturally and Linguistically Diverse Learners **Credits:** 3
- EDS 3130 - Democratic Foundations of Education, Schooling, and Learning **Credits:** 3
- EDS 3150 - Critical Sociocultural Lenses for Teachers **Credits:** 3
- EDS 3170 - Building Humanizing and Culturally Sustaining School Ecosystems **Credits:** 3
- EDS 3210 - Design of Curriculum, Instruction, and Assessment in Secondary Schools **Credits:** 3

- EDS 3240 - Field Experience: Curriculum Planning and Assessment in Secondary Schools **Credits:** 1
- EDS 3280 - Disciplinary Literacy in Culturally and Linguistically Diverse Schools **Credits:** 3
- EDS 4290 - Student Teaching and Seminar: Secondary 7-12 **Credits:** 6,12
  Student Teaching offers an essential conclusion to this degree program. Typically, students should register for 12 credits of EDS 4290 - Student Teaching and Seminar: Secondary 7-12 in their final semester. Students who register for only 6 credits of EDS 4290 - Student Teaching and Seminar: Secondary 7-12 should also register for 6 credits of CLD 4590 - Culturally and Linguistically Diverse: ESL Student Teaching and Seminar.

- EDT 3010 - Integrating Educational Technology into Teaching Credits: 3
- SED 3600 - Exceptional Learners in the Classroom Credits: 3
- THE 3265 - Teaching General Theatre Credits: 2
- THE 4225 - Field Experience in Teaching Theatre in K-12 Credits: 1

Summary of Requirements

Content Courses for K-12 Theatre Teacher Licensure	varies
K-12 Theatre Licensure Education Core	40 credits
Total for K-12 Theatre Teacher Licensure	40 or more credits

Program Modification

Secondary Education Minor (Non-Licensure)

Department of Secondary, K-12 and Educational Technology

School of Education CIP Code: 13.0101

About the Program

The Secondary Education Minor will be of interest to candidates who wish to work with secondary aged children outside the classroom (for example, recreation programs, travel, summer camps, enrichment programs) or work with learners of all ages in corporate or other training/education programs. It provides necessary knowledge, skills and applications in real school settings to develop candidates' understanding of the principles of teaching and learning in middle and high schools. The minor provides an option that assists degree-seeking candidates pursuing licensure to complete their baccalaureate and teacher licensure requirements in four years. To emphasize the application of knowledge in the field as required in new performance standards for teachers, the minor features 120 field experience hours.

Program Requirements

- The third field experience (which is normally connected to the content methods courses), is not required in the minor, but may be a required corequisite ~~co-requisite~~ for the methods course.
- Candidates seeking licensure need to complete additional requirements including formal admission to the Teacher Licensure Program and student teaching.
- The minor does not include all courses required for teacher licensure.
- A minimum grade of C- is required for each course to count toward the Secondary Education Minor.

Required Courses: 23-31 ~~24-30~~ credits

Foundations: (13-15 ~~14~~ credits)

- EDS 3130 - Democratic Foundations of Education, Schooling, and Learning **Credits:** 3
- EDS 3140 - First Field Experience in Secondary Education **Credits:** 1

Or

- EDS 3170 - Building Humanizing and Culturally Sustaining School Ecosystems **Credits:** 3
- EDS 3150 - Critical Sociocultural Lenses for Teachers **Credits:** 3
- EDT 3010 - Integrating Educational Technology into Teaching **Credits:** 3
- SED 3600 - Exceptional Learners in the Classroom **Credits:** 3

Methods: (10-16 credits)

- EDS 3210 - Design of Curriculum, Instruction, and Assessment in Secondary Schools **Credits:** 3
- EDS 3240 - Field Experience: Curriculum Planning and Assessment in Secondary Schools **Credits:** 1
- EDS 3280 - Disciplinary Literacy in Culturally and Linguistically Diverse Schools **Credits:** 3

~~Or or~~

- RDG 3280 - Teaching Content Literacy Skills **Credits:** 3
- XXX XXX Content Methods in Major*

Summary of Requirements

Required Courses	23-31 ~~24-30~~ credits
Total for the Secondary Education Minor (Non-Licensure)	**23-31 ~~24-30~~ credits**

~~*Content and Methods coursework may be waived if required as part of major. See department.~~

School of Hospitality

Rita and Navin Dimond Department of Hotel Management

New Program

Graduate Certificate in Data-Informed Decision Making for Hospitality and Events

This online, 9-credit certificate equips students with advanced financial, analytical, and data visualization skills essential for strategic decision-making. The curriculum emphasizes forecasting, budgeting, revenue analytics, and the interpretation of operational and performance data in hospitality and event contexts.

Minimum Passing Grade:

Students in the Graduate Certificate in Data-Informed Decision Making for Hospitality program must complete the certificate with a cumulative GPA of 3.0 or higher.

No grade lower than a “C” will count toward the certificate. Students receiving a “D” or below will be required to repeat the course.

Required Courses: 9 credits

- ACCM 5150 - Hospitality Forecasting, Budgeting, and Revenue Management **Credits:** 3
- ACCM 5250 - Financial Leadership and Revenue Analytics for Hospitality **Credits:** 3
- HLDR 5340 - Hospitality Data Interpretation and Visualization **Credits:** 3

New Program

Graduate Certificate in Event Fundraising, Sponsorship and Marketing

This online 9-credit graduate certificate program prepares students to plan, fund, market, and manage events through advanced revenue-generation strategies. The curriculum emphasizes fundraising models, sponsorship development, contract and risk management, and strategic marketing within the event and hospitality environments.

Minimum Passing Grade:

Students in the Graduate Certificate in Event Fundraising, Sponsorship, and Marketing program must complete the certificate with a cumulative GPA of 3.0 or higher.

No grade lower than a “C” will count toward the certificate. Students receiving a “D” or below will be required to repeat the course.

Required Courses: 9 credits

- HLDR 5030 - Hospitality Contracts, Risk, and Compliance Credits: 3
- HLDR 5300 - Advanced Hospitality Marketing and Sales Credits: 3
- HLDR 5678 - Advanced Event Fundraising and Sponsorship Credits: 3

New Program

Graduate Certificate in Experience Design and Service Innovation

The Graduate Certificate Program in Experience Design and Service Innovation is an online 9-credit certificate that focuses on the strategic design, delivery, and continuous improvement of guest and attendee experiences. The curriculum integrates experience management, design thinking, and advanced marketing to prepare students to create innovative, human-centered service solutions across hospitality and event contexts.

Minimum Passing Grade:

Students in the Graduate Certificate in Experience Design and Service Innovation program must complete the certificate with a cumulative GPA of 3.0 or higher.

No grade lower than a “C” will count toward the certificate. Students receiving a “D” or below will be required to repeat the course.

Required Courses: 9 credits

- HLDR 5300 - Advanced Hospitality Marketing and Sales Credits: 3
- HLDR 5540 - Experience Management and Service Innovation for Hospitality and Events Credits: 3
- HLDR 5668 - Design Thinking in Event Planning Credits: 3

Batch Changes

The following batch changes were completed:

1. CIP Codes were added to the program header on all undergraduate programs.
2. Available program formats were added to the program header on undergraduate certificates.
3. Student learning outcomes were added to all undergraduate certificates and minors.
    a. Note: Certificates and minors in the Marketing Department and the Business minor updated SLOs via regular addendum proposals, instead of using the batch change. Those specific program changes are listed above in the College of Business section.

Course Descriptions (Undergraduate)

M=Course Modification N=New Course C=Conversion to Regular Course

(M) AES 1010 - Introduction to Aviation and Aerospace Management

Credits: 3
Description: Students are introduced to a comprehensive exploration of the principles, practices, and challenges of aviation and aerospace management. Students will examine the operations, regulations, and strategic planning involved in managing complex aviation and aerospace systems, including airports, airlines, spaceports, and air traffic control. The course covers essential management areas such as safety and risk management, aerospace mission logistics, regulatory compliance, and sustainability within the aviation and aerospace sectors.

(M) AES 1500 - Private Pilot Flight Lab

Credits: 2
Prerequisite(s): Instructor Permission
Description: Students engage in Federal Aviation Administration (FAA) pilot training under Code of Federal Regulations (CFR) Part 61 or Part 141 towards a Private Pilot Certificate. Students receive course credit after obtaining the FAA Private Pilot Certificate.
Note: This course cannot be certified for veteran benefits.
These courses are the only allowable AES Electives that can substitute for flight lab courses: AES 1040, AES 2050, AES 2330, AES 2350, AES 3220, AES 3230, AES 3240, AES 3600, AES 4100, AES 4230, ~~and~~ AES 4610, AES 4870.

Only students using veteran benefits can use these VA-approved AES Electives in place of an AES flight lab.

(M) AES 1910 - Aerospace Industry Exploration and Analysis

Credits: 3
Description: Students will be introduced to the aerospace industry, which encompasses both aviation and space sectors. This course provides an overview of key organizations and the dynamics that shape the industry. It will examine critical factors, including emerging technologies, competitive forces, globalization, and demographic trends, that influence the industry's future. Given the wide range of aerospace organizations in Colorado, students will participate in field visits to observe and analyze industry activities. ~~Students will be introduced to the aviation and aerospace industry, including an overview of key organizations and dynamics that shape the industry. Given availability of organizations, students will perform field visits to participate in tours and analyze the types of activities performed. Industry factors such as emerging technology, competition, globalization, and demographic diversification will also be discussed.~~

(M) AES 1950 - Aerospace Digitalization: Technology and Processes

Credits: 3
Description: Students will be introduced to the digital transformation of the aerospace industry, exploring the digitalization of key technologies and processes that are enabling it. This includes an introduction and overview of the fourth industrial revolution, with a focus on how it is shaping the aerospace domain. Selected digitalization applications will be discussed, specifically from aerospace supply chain and manufacturing perspectives. ~~Students are introduced to the concepts of digitization, digitalization, and digital transformation, as well as enabling technologies and business processes, including the fourth industrial revolution in the aviation and space sectors of the aerospace industry. This course specifically focuses on the application of those concepts, technologies, and processes from the aerospace supply chain and manufacturing perspectives.~~

(M) AES 2220 - Flight Dispatch and Load Planning

Credits: 3
Prerequisite(s): AES 1100 or AES 1010~~,~~ and AES 1400~~, and Any Approved Quantitative Literacy Course~~
Description: Students are introduced to the topics needed to prepare them to work as a flight dispatcher. Regulations required for operations are a vital area of knowledge and will be covered. Students examine the methods of decision-making, safety, and weather conditions related to dispatch decisions.

(M) AES 2630 - Spacecraft Mission Operations I

Credits: 3
Prerequisite(s): AES 1050

Corequisite(s): ~~AES 3600~~
Prerequisite(s) or Corequisite(s): AES 3600
Description: ~~Provides the student with~~ Students gain an overview of the real-time skills, techniques, and methods necessary to conduct a space mission as a Spacecraft Operator including generation of the daily planning and successful execution of the real-time portion of a space mission. The differences in ground and space system architectures, mission dynamics (orbit, spacecraft agility, etc.), operations tempo, and the planning timeline inherent in various types of missions are examined. The laboratory includes hands-on exercises in the AES Mission Operations Center to create a daily mission plan, conduct spacecraft real-time command and control, and perform post contact (pass) data analysis. A real-time ops environment is created using an interactive spacecraft simulator. Focus is on learning the skills necessary to operate a space mission.

(M) AES 2500 - Instrument Pilot Flight Lab

Credits: 2
Prerequisite(s): AES 1100 and instructor permission
Description: Students engage in Federal Aviation Administration (FAA) pilot training under Code of Federal Regulations (CFR) Part 61 or Part 141 towards an Instrument Rating. Students receive course credit after obtaining the FAA Instrument Rating.
Note: This course cannot be certified for veteran benefits
These courses are the only allowable AES Electives that can substitute for flight lab courses: AES 1040, AES 2050, AES 2330, AES 2350, AES 3220, AES 3230, AES 3240, AES 3600, AES 4100, AES 4230, ~~and~~ AES 4610, AES 4870.

Only students using veteran benefits can use these VA-approved AES Electives in place of an AES flight lab.

(M) AES 3000 - Aircraft Systems and Propulsion

Credits: 3
Prerequisite(s): AES 1100 or AES 1010 ~~FAA Private Pilot Certificate~~
Description: Students are introduced to aircraft nomenclature, design features, systems, and their components. Students learn the theory, components, instrumentation, and operation of internal combustion, turboprop, and turbojet engines. Additionally, the student learns about pressurization, electrical, hydraulic, anti-ice/de-ice, turbocharging, and pneumatic aircraft systems.

(M) AES 3520 - Commercial Single-Engine Flight Lab

Credits: 2
Prerequisite(s): FAA Private Pilot certificate and Permission of instructor
Description: Students engage in Federal Aviation Administration (FAA) pilot training under Code of Federal Regulations (CFR) Part 61 or Part 141 towards a Commercial Single-Engine Certificate. Students receive course credit after obtaining the FAA Commercial Single-Engine Certificate.
Note: This course cannot be certified for veteran benefits
These courses are the only allowable AES Electives that can substitute for flight lab courses: AES 1040, AES 2050, AES 2330, AES 2350, AES 3220, AES 3230, AES 3240, AES 3600, AES 4100, AES 4230, ~~and~~ AES 4610, AES 4870.

Only students using veteran benefits can use these VA-approved AES Electives in place of an AES flight lab.

(M) AES 3530 - Aerodynamics

Credits: 3
Prerequisite(s): Any Approved Quantitative Literacy Course ~~MTH 1080 or MTH 1109 or MTH 1110 or MTH 1111 or MTH 1112 or MTH 1210 or MTH 1310 or MTH 1610~~
Description: The student is introduced to the basic principles of aerodynamics, including airfoil shapes and aerodynamic forces, airplane performance, stability and control, strength limitations, and the application of these to specific flight situations. Included in this course are flight performance with air flow in the sub-, trans-, and supersonic envelopes.
Note: It is highly recommended that students complete the MSU Denver General Studies Quantitative Literacy requirement prior to taking this course.

(M) AES 3610 - Elements of Spacecraft Design ~~I~~

Credits: 3
Prerequisite(s): ~~AES 3600 and Junior Standing or Permission of Instructor~~
Description: Students are introduced to spacecraft system components and their relationships to each other. Design requirements and functional

criteria for the following spacecraft components will be covered, specifically payload, propulsion, attitude control, power systems, thermal control, command and data system, telecommunication, and structures. Design considerations will be analyzed in retrospect to space mission architecture and related flight operations. ~~Introduces students to spacecraft operational perspectives and system components. This includes a focus on System Engineering and Orbital Mechanics. Additional topics areas discussed with spacecraft design is propulsion, attitude control, power systems, thermal control, command and data system, telecommunication, and structures. The operational aspect of acquiring and monitoring a spacecraft will be covered through lecture and laboratory exercises.~~

(M) AES 4500 - Commercial Multi-Engine Flight Lab

Credits: 2
Prerequisite(s): FAA Commercial Pilot certificate and Permission of instructor
Description: Students engage in Federal Aviation Administration (FAA) pilot training under Code of Federal Regulations (CFR) Part 61 or Part 141 towards a Commercial Multi-Engine Certificate or Rating. Students receive course credit after obtaining the FAA Commercial Multi-Engine Certificate or Rating.
Note: This course cannot be certified for veteran benefits.
These courses are the only allowable AES Electives that can substitute for flight lab courses: AES 1040, AES 2050, AES 2330, AES 2350, AES 3220, AES 3230, AES 3240, AES 3600, AES 4100, AES 4230, ~~and~~ AES 4610, AES 4870.

Only students using veteran benefits can use these VA-approved AES Electives in place of an AES flight lab.

(M) AES 4510 - Flight Instructor Flight Lab

Credits: 2
Prerequisite(s): FAA Commercial/Instrument Pilot certificate and instructor permission
Description: Students engage in Federal Aviation Administration (FAA) pilot training under Code of Federal Regulations (CFR) Part 61 or Part 141 towards a Certified Flight Instructor Certificate. Students receive course credit after obtaining the FAA Certified Flight Instructor Certificate.
Note: This course cannot be certified for veteran benefits.
These courses are the only allowable AES Electives that can substitute for flight lab courses: AES 1040, AES 2050, AES 2330, AES 2350, AES 3220, AES 3230, AES 3240, AES 3600, AES 4100, AES 4230, ~~and~~ AES 4610, AES 4870.

Only students using veteran benefits can use these VA-approved AES Electives in place of an AES flight lab.

(M) AES 4580 - Turbojet Flight Engineer or Type Rating

Credits: ~~4~~ 1
Prerequisite(s): FAA Flight Engineer Knowledge examination and/or Permission of instructor
Description: Students engage in Federal Aviation Administration (FAA) pilot training under Code of Federal Regulations (CFR) Part 61 or Part 141 towards a Certified Flight Engineer Certificate or Aircraft Type Rating. Students receive course credit after obtaining the FAA Flight Engineer Certificate or an Aircraft Type Rating.
Note: This course cannot be certified for veteran benefits.

(M) AGE ~~ITP~~ 3111 - Aging Warriors: Understanding the Health Issues of Aging Men

Credits: 3
Prerequisite(s): ENG 1009 or ENG 1010; and ENG 1020 or ENG 1021
Description: ~~This course examines~~ Students will examine the health issues of aging men. It is an integrative perspective on contributing factors to the health, disease, and demise of aging men such as masculinity, behavioral factors, environmental influences, and cultural influences. ~~The course will include~~ Students will explore physical health, socio-emotional health, mental health, and sexual health issues of men growing older.

(M) ART 2643 - Figure Drawing: Wet and Dry

Credits: 3
Prerequisite(s): ~~(ARTH 1600 or ARTH 1700 or ARTH 1800), ART 1101 and~~ ART 1141 or ART 1531 with "C-" or better in each; or permission of the department.
~~**Prerequisite(s) or Corequisite(s):** ART 1501 or permission of the department~~
Description: Students in this course focus on the human form through observational rendering from live models. Students examine human anatomy, both structural and muscular systems, through both in-class exercises and assigned homework. Both wet and dry applications are investigated; as are

black and white media, color media, and conceptual development. Historic and contemporary artists and themes are reviewed and inspected through lectures, critiques and outside assignments.

(M) ARTE 4230 - Secondary Art Education: Curriculum and Instruction

Credits: 3
~~**Prerequisite(s):** ARTE 3601 with "C-" or better; or permission of department~~
Corequisite(s): ARTE 4240 or permission of department
Pre/Corequisite(s): ARTE 3601 with "C-" or better; or permission of department
Description: Students in this course develop age-appropriate curriculum and instructional methodologies for teaching art that foster fluency, flexibility and ingenuity for grades 6-12. Students generate connections between concepts developed in class, studio practices, and discussions based on observations made in the concurrent field experience. Using these skills, students explore, analyze, and formulate pedagogical strategies necessary to become informed practitioners and advocates within the field of art education.

(M) CS 3600 - Operating Systems

Credits: 4
Prerequisite(s): CS 2050~~,~~ and CS 2400~~, and CS 3250, all~~ both with grades of "C" or better; or permission of instructor
Description: This course provides an introduction to modern computer operating systems, their use, design, development, and implementation. Topics covered include: operating system modes, structuring methods, process and thread scheduling and dispatch, concurrency, inter-process communication, memory management, file system organization (in both stand-alone and networked environments), and system security. Students are required to write programs that implement some operating system functions.

(C) CSS ~~190A~~ 1020 - Python Fundamentals ~~(Fall 2025)~~

Credits: 3
Description: In this course, students study how to identify fundamental concepts of the Python programming language and how to apply basic programming techniques to solve introductory computing problems. Emphasis is placed on building fundamental programming abilities, applying core concepts such as variables, loops, conditionals, and functions, and developing a structured approach to solving introductory computing problems. Students practice breaking down problems into manageable steps and constructing clear, efficient solutions using Python. Through hands-on practice, students explore real-world applications of Python and observe how programming can be utilized to solve practical, introductory problems across various domains. By the end of the course, students will have the foundational knowledge necessary to construct basic programs and adapt their skills to more advanced computational challenges.

(M) EDS 3150 - Critical Sociocultural Lenses for Teachers

Credits: 3
Prerequisite(s) or Corequisite(s): ~~EDS 3140 or EDS 3240 or MUS 3351 or PETE 3010 or PETE 3410 or PETE 3510~~ ARTE 3601 or EDS 3130 or MUS 3351 or PETE 3130
Description: This course supports teacher candidates' ability to critically analyze the historically situated systems of racism, colonialism, and institutional oppression that shape classroom interactions, curricular knowledge, and schooling in the United States and engages with ways to meaningfully transforms these classrooms. The course centers racial, ethnic, and linguistic inequities and unequal power relationships as primary lenses for examining the socially constructed dimensions of teacher and student intersectional identities and their relationship to formal educational systems. Teacher candidates analyze how these systems operate at institutional and structural levels, while also examining their own positioning within them, to develop the capacity to teach in ways that affirm and support students from historically marginalized communities within inclusive classrooms, to interrupt inequitable educational practices, and to develop culturally sustaining practices for all. ~~The ethnic studies and social justice framework of this course supports teacher candidates' ability to critically analyze systems that shape classroom interactions, curricula, and schooling. It addresses racial, ethnic, and linguistic inequities and hierarchies of power as primary lenses for understanding and analyzing the socially constructed concepts related to human identity and the relationship of these social constructs to systems of formal education in the United States. Teacher candidates will examine their own location in larger systems so they may better serve their students, especially those from historically marginalized communities.~~
~~*Note:* This course requires previous completion of or concurrent enrollment in a field experience: EDS 3140, EDS 3240, or MUS 3351.~~
General Studies: Social and Behavioral Sciences
University Requirement(s): Ethnic Studies & Social Justice

(M) EDS 3280 - Disciplinary Literacy in Culturally and Linguistically Diverse Schools

Credits: 3
Prerequisite(s): EDS 3150; EDS 3210 and EDS 3240 (or PETE 3400 and 3410; or PETE 3500 and 3510; or MUS 3351; or MUS 4361; or ~~ARTE 4202~~ ARTE 4130; or ~~ARTE 4203~~ ARTE 4230)
Description: This course brings together future teachers of various secondary education academic disciplines, grade levels, and backgrounds to explore disciplinary literacy and the teaching of literacy and language acquisition in K-12 classrooms, and to consolidate their learning throughout the licensure program. Students will learn about the role of language, specifically the literacy practices of reading, writing, speaking, listening, thinking, visualizing, and representing to gain content knowledge across academic disciplines in culturally and linguistically diverse schools, as well as a hands-on, student-centered approach to prepare teachers who actively promote justice through diversity, equity and inclusion.

(M) EDUC ~~SED~~ 1009 - Academic Success

Credits: 3
Description: ~~This course couples learning strategies with executive functioning coaching to develop the study and executive functioning skills needed for academic and workplace success.~~ Students gain learning strategies through executive function coaching. Students and academic coaches ~~will~~ work together to discover and practice tools and strategies to reach each student's academic and workforce potential with individualized support.

(C) EDUC 1010 ~~SED 290A~~ - Introduction to Student Centered Planning ~~(Fall 2024)~~

Credits: 3
Description: ~~This course empowers students to~~ Students design goal-oriented plans for their future across various facets of adult life encompassing academic, employment, community living, safety and security, social and spiritual, and healthy living. Through the identification of individual assets, interests, and capabilities, students create a specific vison for their best life. ~~The course guides students in setting~~ Students set goals and priorities to initiate a comprehensive plan for their future.

(C) EDUC 1020 ~~SED 290B~~ - ~~Advanced~~ Applied Student-Centered Planning ~~(Spring 2025)~~

Credits: 3
Description: This course provides guidance in ongoing self-evaluation, allowing students to assess and monitor goals in all aspects of adult life, including academic, employment, community living, safety and security, social and spiritual, and healthy living. Students will develop the skills to create and maintain personal visions of a “good life,” implement effective evaluations systems, and creatively adapt the plans to meet individual and evolving needs.

(C) EDUC 1021 ~~SED 290C~~ - Self Advocacy ~~(Spring 2025)~~

Credits: 3
Description: This course is designed to equip students with essential skills and knowledge for effective self-advocacy, enabling them to achieve social, academic and career goals. By engaging in individualized and applied learning opportunities, students will learn to express their individual differences and abilities, build systems of support, and make decisions that impact their sense of belonging across various settings.

(M) ENG 3114 - Studies in Later World Literature

Credits: 4
Prerequisite(s): ENG 2000 OR ENG 2100
Description: ~~This~~ Students in this course focus~~es~~ on the study of world literature (non-Anglophone) within its historical and cultural contexts, examining characteristic writers responding to ideas and events in world literature from c. 1600 to the present. Readings include primary literature of the period read in translation as well as materials exploring the literature's contexts.

(M) ENG 3120 - Literature and Film: Variable Topics

Credits: 4
Prerequisite(s): ENG 2000 OR ENG 2100 OR ENG 2860
Description: ~~This~~ Students in this course focus~~es~~ on variable topics in the study of literature and film. ~~The course addresses~~ They learn to address the development of specific themes (such as representational modes, schools of thought, or specific social issues) across written texts and visual media narratives, considering both the representations and explorations of the theme under study in individual works from various periods and/or contexts and differences in narrative and representational strategies between print texts and film texts.
Note: This course may be repeated under different topics two times.

(M) ENG 3520 - Research Methods in Rhetoric and Composition

Credits: 4
Prerequisite(s): ~~ENG 2510~~ ENG 1020 or ENG 1021
Description: ~~This course introduces students to~~ Students in this course learn the types of research methods used in rhetoric and composition. Students explore what types of questions are answered by different types of research methodologies and how empirical studies in rhetoric and composition are designed. Methodological issues such as data collection, coding, validity, and reliability are considered, as well as participant rights and protections and other ethical issues. Students design an empirical study.

(M) ENV 3350 - Climate Change Solutions

Credits: 3
Prerequisite(s): ~~ENV 3340 or MTR 1600 or MTR 3340~~ ENV 1200 or ENV 3340 or MTR 1400 or MTR 1600 or MTR 3330 or MTR 3340 or GEG 1000 or GEG 1100 or GEG 1300 or GEG 3330
Description: ~~This course builds on student's~~ Students in this course build on their prior knowledge of the science of climate change and focuses on ways that scientists, policy makers, and the general public can work to solve climate change. Students learn about current technologies that can reduce our carbon emissions including renewable energy and electric vehicles. In addition, students evaluate strategies for cooling our planet including geoengineering and carbon sequestration. Finally, students consider policy, social, and economic strategies for reducing carbon emissions.

(A) ~~ENV 3440 - Energy and Mineral Resources~~

~~Credits: 4~~
~~Prerequisite(s): GEL 1010 or GEG 1100 or ENV 1200 or permission of instructor~~
~~Description: This course provides an overview of the Earth's energy and mineral systems with an emphasis on origin, characteristics, distribution, and the interaction of people and geologic resources.~~
~~*Note:* Credit will be granted for only one prefix.~~
~~Field Trips: Field trips are required~~
~~Cross Listed Course(s): GEG 3440, GEL 3440~~

(A) ~~GEG 2300 - Geographic Analysis of Social Issues~~

~~**Credits:** 3~~
~~**Prerequisite(s):** GEG 1300~~
~~**Description:** This course is a geographic analysis of current social issues. Topics include urban spatial problems such as crowding and crime, drugs and gangs, population growth, environmental perception, resource use, and culturally based land-use patterns. The administration of space, boundaries, territoriality, and spatial learning are discussed.~~

(M) GEG 3440 - Energy and Mineral Resources

Credits: 4
Prerequisite(s): GEL 1010 or GEG 1100 or ENV 1200 or permission of instructor
Description: This course provides an overview of the Earth's energy and mineral systems with an emphasis on origin, characteristics, distribution, and the interaction of people and geologic resources.
Note: Credit will be granted for only one prefix.
Field Trips: Field trips are required.
Cross Listed Course(s): ~~ENV 3440,~~ GEL 3440

(M) GEG 3600 - Urban Geography

Credits: 3
Prerequisite(s): ~~GEG 1300 or Junior or higher standing~~ GEG 1000 or GEG 1100 or GEG 1300 or GEG 1700 or GEG 1910 or GIS 2250 or ENV 1200 or MTR 1600
Description: ~~The course surveys~~ Students survey the theories and debates in urban geography - an interdisciplinary and continually changing body of knowledge that aims to analyze and to interpret the form, function and structure of cities. ~~The course covers~~ Students cover a range of theoretical topics relevant to the study of cities, which include urban form and design, culture and society, urban space, and urban politics and economics. Besides this theoretical background, ~~the course provides~~ students gain an empirical analysis of the main issues concerning the contemporary process of urbanization in developed and developing societies, with an emphasis on urban poverty, inequality and housing; and the role of urban social movements and activist urbanists in finding innovative solutions to persistent problems.

(M) GEG 3630 - Transportation Planning and Land Use

Credits: 3
Prerequisite(s): ~~GEG 3610, six additional hours of geography~~ GEG 1000 OR GEG 1300 OR GEG 1700 OR permission of instructor
Description: ~~This course is~~ Students in this course conduct an analysis of transportation systems as they relate to other types of land use. Transportation networks are examined in terms of types, patterns, and densities. Consideration is given to alternative transportation systems as they relate to energy savings, pollution prevention, and the reduction of congestion.

(M) GEG 3700 - Urban Sustainability

Credits: 3
Prerequisite(s): ~~GEG 1700 or Junior or higher standing~~ GEG 1000 or GEG 1100 or GEG 1300 or GEG 1700 or GEG 1910 or GIS 2250 or ENV 1200 or MTR 1600
Description: ~~This course examines~~ Students in this course examine the relationship between urbanization and sustainability. ~~It analyzes~~ Students analyze the opportunities and challenges of cities to initiate, foster and manage the pace of change needed to transition to sustainability. ~~It evaluates~~ Students evaluate how cities throughout the world are planning for sustainability and reducing their carbon footprint and, in doing so, learning how to foster change in local contexts. ~~The course also provides students~~ Students are also provided with the professional tools to identify and learn how sustainable urban planning practices generated in dynamic U.S. and international contexts can be adapted to different urban local settings to find creative ways to transition to urban sustainability.

(M) GEG 3720 - Global Sustainable Development

Credits: 3
Prerequisite(s): ~~GEG 1700 or Junior or higher standing~~ GEG 1000 or GEG 1100 or GEG 1300 or GEG 1700 or GEG 1910 or GIS 2250 or ENV 1200 or MTR 1600
Description: This course surveys the sustainability concept and sustainable development practices focusing on: economic growth and environmental degradation, the overuse of resources and the generation of waste, and the effectiveness of environment protection and environmental justice. It examines the environmental implications of production systems, consumption patterns, and waste generation in the global north as well as poverty and exclusion in the global south. It reviews the evolution of sustainability and sustainable development as major policy-making paradigms for addressing the tension between economic development and environmental protection. The course also examines the technocentric approach to environmental degradation and other alternative approaches that emphasize justice, socio/economic equity and ecological responsibility.

(M) GEG 4610 - Advanced Urban and Regional Planning

Credits: 3
Prerequisite(s): ~~GEG 1000 or GEG 1300 or GEG 1700 or junior or higher standing~~ GEG 1000 or GEG 1100 or GEG 1300 or GEG 1700 or GEG 1910 or GIS 2250 or ENV 1200 or MTR 1600
Description: ~~This course is an examination of~~ Students in this course examine the philosophy and scope of urban and regional planning, and the principles and factors of planning and their interrelationships; with an emphasis on ~~Research~~ research methods in planning ~~are emphasized~~. ~~This course includes~~ Students also explore a global context of urban planning and 21st century developments and technologies.

(M) GEG 4700 - Sustainability in Resource Management

Credits: 3
Prerequisite(s): ~~GEG 1700 or Junior or higher standing~~ GEG 1000 or GEG 1100 or GEG 1300 or GEG 1700 or GEG 1910 or GIS 2250 or ENV 1200 or MTR 1600
Description: ~~The course traces~~ Students trace the evolution of current thought and practice in the environmental debate of resources. ~~It reviews~~ Students review the politics of resource management as it relates to a broader set of issues about economic development, sustainability, and social equity. ~~It examines~~ Students examine the environmental and social effects associated with development of specific land-based resources. ~~Topics covered include~~ Students study consumerism, the growth economy, global climate change, hydropolitics, food systems and agriculture, deforestation, warfare, and ecological and human impacts of environmental degradation. ~~The course provides a~~ Students study within an effective framework to examine the politics of resource management and environmental policy and how contending approaches and practices impact human development and environments.

(M) GEL 3440 - Energy and Mineral Resources

Credits: 4
Prerequisite(s): GEL 1010 or GEG 1100 or ENV 1200 or permission of instructor

Description: This course provides an overview of the Earth's energy and mineral systems with an emphasis on origin, characteristics, distribution, and the interaction of people and geologic resources.
Note: Credit will be granted for only one prefix.
Field Trips: Field trips are required
Cross Listed Course(s): ~~ENV 3440,~~ GEG 3440

(M) GWS 3280 - Queer Theory

Credits: 3
~~**Prerequisite(s):** GWS 1001 or GWS 1200 or GWS 1550~~
Description: In this course, students survey a broad array of scholarship in queer theory, as well as applications of queer theory to explore the ways individuals, groups and communities form and resist norms. Ultimately, students analyze a variety of issues such as sexuality and gender, race and nation, medical and carceral practices, trans studies, disability studies, and decolonial practices, using queer theories.
Note: Credit will be granted for only one prefix: SOC or GWS.
Cross Listed Course(s): SOC 3280

(M) HCM 3500 - Health Care Research Methods

Credits: 3
Prerequisite(s): HCM 3150 and a statistics class
Description: This course examines the research process, research terminology and the role of research as a tool for understanding and improving financing, delivery, and management in health care organizations. Students critique relevant research articles, explore sources of funding for research projects, and apply this knowledge to health care management projects.

(M) HCM 4030 - Financial Management in Health Care

Credits: 3
Prerequisite(s): ACC 2010 and ~~HCM 3020~~ HCM 3150 with a grade of C or better.
Description: This course surveys the organizational and operational aspects of fiscal analysis and control of health care institutions. Particular attention is given to the importance of third-party payer and reimbursement issues. Emphasis is placed on the practical processes involved in the determination and analysis of tax status, revenues, costs, charges, inventory/materials management, working capital levels, budgets, and financial reporting.

(M) HSP 2020 - Small Group Dynamics: Theory and Experience

Credits: ~~4~~ 3
Prerequisite(s): ENG 1009 or ENG 1010 or equivalent
Description: Students will be introduced to the basic theories of small groups with experiential learning experiences to develop skills and strategies for effective group participation and leadership. The universality of feelings and concerns are shared to recognize the dynamics of interpersonal interaction, predict dynamics, accurately demonstrate effective leadership skills, and learn to facilitate the group process and interpersonal interactions in small-group situations.

(M) HSP 2030 - Theory and Practice of Counseling

Credits: ~~4~~ 3
Prerequisite(s): HSP 1010; or permission of instructor
Description: This course familiarizes students with major theoretical approaches to counseling and psychotherapy and basic interview techniques. Emphasis will be placed on introducing behavioral intervention techniques common to most behavioral therapies. Students examine and practice effective interviewing skills and learn how to gather essential information about clients using the fundamental theories of counseling and psychotherapy.

(M) HSP 2040 - Family Systems

Credits: ~~4~~ 3
Prerequisite(s): ENG 1009 or ENG 1010
Description: This class provides a brief review of family systems and the roles of family members in traditional and nontraditional families. The theoretical basis of family therapy modalities that serve as guidelines for therapy is described.

(M) HSP 3320 ~~4320~~ - Psychopathology and the Mental Health Clinician

Credits: ~~4~~ 3
Prerequisite(s): ENG 1009 or ENG 1010 and ENG 1020 or ENG 1021, HSP 1010, and HSP 2030; or permission of instructor
Description: This course introduces and describes psychopathology nomenclature so that students will be able to recognize psychopathology. Biological, psychosocial, and sociocultural etiological perspectives of psychopathology will be discussed. The course will introduce the basic treatment approaches and critically analyze the advantages and disadvantages of mental disturbance labeling and societal implications.

(M) HSP 3470 - Counseling the Substance Abuser

Credits: ~~4~~ 3
Prerequisite(s): ENG 1009 or ENG 1010 and ENG 1020 or ENG 1021, HSP 1010, and HSP 2030; or permission of instructor
Description: This course is specifically oriented to assessing and counseling the addicted client. Course work is designed to provide the trainee with knowledge of and experience in applying the fundamentals of research, evidence-based treatment, client assessment, treatment planning, client records, and individual counseling skills. Satisfactory completion of the course will meet the requirements for Principles of Addiction Treatment~~, Client Record Management,~~ and Addiction Counseling Skills for Colorado Addiction Counselor Certification and Domestic Violence Counselor Certification.

(M) HSP 3490 - Multicultural Issues in Human Services

Credits: ~~4~~ 3
Prerequisite(s): ENG 1009 or ENG 1010, ENG 1020 or ENG 1021, and HSP 1010; or permission of instructor
Description: Students will learn through Ethnic Studies, examples of historical social injustices enacted upon communities of color and other marginalized people who have been oppressed by white supremacy power-over engagements. Students will be prepared to recognize and challenge such conduct through identifying and questioning relationships of power and privilege that can arise in counselor-client clinical interactions. The course addresses these concerns by introducing critical theories that instill social justice principles into the conducting of mental health and addiction counseling.

(M) HSP 3050 ~~4040~~ - Cognitive Behavior Therapy

Credits: 3
Prerequisite(s): ENG 1009 or ENG 1010 and ENG 1020 or ENG 1021, HSP 1010, and HSP 2030; or permission of instructor
Description: This course examines the early and current development of cognitive behavior therapy as pioneered by Drs. Aaron Beck and Albert Ellis. Cognitive behavior has become one of the most widely used therapies during the last two decades. Students will apply C.B.T. by examining thoughts and beliefs connected to moods, behaviors, physical experiences, and events.

(M) HSP 3570 - Case Management in Human Services

Credits: ~~2~~ 3
Prerequisite(s): ENG 1010, ENG 1020, HSP 1010~~, and HSP 2330~~; or permission of instructor
Description: This course will provide an opportunity to evaluate treatment as a part of a coordinated system that includes evaluating client needs and providing links with needed services, including physical health, behavioral health, and social services. Students will learn the process of identifying specific client needs and supporting clients in meeting identified needs and treatment goals.

(M) HSP 4425 ~~3425~~ - Pharmacology of Drugs and Related Infectious Diseases

Credits: ~~4~~ 3
Prerequisite(s): ENG 1009 or ENG 1010 and ENG 1020 or ENG 1021
Description: Students explore the composition, classification, effects, uses, and abuses of drugs and alcohol. Students learn the ways that psychoactive substances impact the central nervous and immune systems. Students also examine diseases and health issues including communicable and sexually transmitted diseases that are most likely to affect individuals with substance use disorders. In addition, the course addresses health issues found among individuals who might abuse mind-altering chemicals. Students perform risk assessments and prepare educational materials for clients. Related social and political issues are integrated into the course content. Satisfactory completion of this course meets the Pharmacology I, Advanced Pharmacology, and Infectious Disease course requirement for Colorado Certified Addiction Specialist (CAS).

(M) HSP 4700 ~~3710~~ – Research Methods and Program Evaluation in Human Services

Credits: ~~4~~ 3
Prerequisite(s): ENG 1020, HSP 3330 or permission of instructor
Description: Students will explore the many ways to study a research question, how to select the best method of investigation, how to safeguard the rights of participants, how to analyze data, report their findings, and the limitations of research. In addition, students will learn the essentials of program evaluation and its required steps. This course will allow all the students to design and complete a small research study or support the research interest of a program in the community. Finally, the students will be required to present their research projects.

(M) HSP 4780 - Human Services Internship II

Credits: 8
Prerequisite(s): Senior status, all general studies, ~~HSP 3560, HSP 3710, HSP 4770~~ HSP 4700, HSP 3760, HSP 4770
Description: Supervised by a faculty member within the major department, internships provide practical, hands-on experience in a professional field related to the major. Internship placements must be established prior to enrollment in this course in consultation with the Applied Learning Center. *Internship requirements vary by department. For information and instructions on finding and enrolling in an internship, contact the Classroom to Career (C2) Hub at c2hub@msudenver.edu.*
University Requirement(s): Senior Experience

(M) HSP 4840 - Human Services Internship

Credits: 5-~~20~~ 15
Prerequisite(s): ~~HSP 1020; HSP 2020; HSP 2030; HSP 2070; HSP 3330, HSP 3490 or permission of Field Director~~ HSP 1010, HSP 1020, HSP 2020, HSP 2030, HSP 3050, HSP 3220, HSP 3330, HSP 3470, HSP 3490, HSP 3760, mandatory orientation with program staff/faculty
Description: This Internship provides a beginning field experience in a human service agency or setting. In addition to the field service hours, students participate in an interactive seminar that supports the effectiveness of student learning at the placement site and allows students to apply theoretical knowledge learned in the core human services curriculum to real life situations and experiences. Students participate in a variety of hands-on activities to develop clinical and/or nonprofit management skills depending on the nature of the placement.
Note: Human Service Majors are required to complete 400 hours (1~~0~~2 credits) in either one semester or over 2 semesters (~~5~~6 credits each). ~~The course can be repeated for either 5 credits or 10 credits as an elective.~~ Students in catalog years prior to 2026/27 should meet with an advisor. Some sections of this course may be taught as Community Engaged Learning.
University Requirement(s): Senior Experience

(M) HSP 4880 - Addiction Studies Internship

Credits: 5 or 15
Prerequisite(s): ~~HSP 3470; HSP 3400 AND HSP 3460; HSP 4320; HSP 4840 or approval of Field Director~~ HSP 3470; HSP 4425; HSP 3320; HSP 4840 or approval of Field Director
Prerequisite(s) or Corequisite(s): ~~HSP 2040; HSP 3220; HSP 3710; HSP 4040; HSP 4660~~ HSP 2040; HSP 3220; HSP 4700; HSP 4660
Description: This specialized internship experience allows students to participate in a variety of hands-on activities to develop clinical skills within a substance abuse treatment setting. In addition to the field service hours, students participate in an interactive seminar that allows students to apply theoretical classroom knowledge to actual clinical situations and experiences. Students must complete a total of 600 hours to meet the state requirements for clinical hours for a Certified Addiction Technician.
Note: The course can be completed in one semester (15 credits/600 hours) or spread over 3 semesters in 5 credit (200 hour) increments.
University Requirement(s): Senior Experience

(M) JMP 4465 - Video Thesis

Credits: 3
Prerequisite(s): JMP ~~4430~~ 3435
Description: Students take individual video projects from script to screen under guided professor mentorship in this immersive capstone video production course.

(M) MGT 3510 - The People of Nonprofits: Staff, Board, Volunteers, Clients and You

Credits: 3
~~**Prerequisite(s) or Corequisite(s):** HSP 2010~~
Description: In this course, students examine the human capital component of the nonprofit sphere. Roles, responsibilities, rules, and regulations are all explored as they relate to self, staff, board members, volunteers, clients and outside agency partners. Students explore their unique strengths and build respective strategies to employ throughout their careers.

(M) MGT 4530 - Organizational Behavior

Credits: 3
Prerequisite(s): MGT 3000
Description: ~~This course examines the behavior of individuals and small groups in organizational settings. The emphasis is on how organizations influence behavior in their quest for operating efficiency and effectiveness.~~ This course provides participants with a comprehensive understanding of human behavior in organizational settings, while emphasizing the soft skills that are requisite for enhanced interpersonal interaction. Learners apply behavioral science principles to develop the critical thinking, management, and leadership skills that are needed to analyze and improve individual, group, and organizational outcomes.

(M) MTR 3420 - Radar and Satellite Meteorology

Credits: 3
Prerequisite(s): ~~MTR 2020 or MTR 2400 and MTH 1110~~ MTR 2020 and College Algebra OR MTH 1120 OR MTH 1400 OR MTH 1410
Description: ~~This course provides~~ Students in this course are provided with a physics-based study of the uses of radar and satellites and their application to various meteorological problems. ~~Basic~~ Students learn to apply theories of radar and satellites ~~will be applied~~ to the interpretation and analysis of various radar and satellite products. ~~The lab component focuses~~ In the lab component, students focus on the interpretation of radar and satellite imagery using ~~computer display software~~ digital visualization tools.

(M) MTR 3500 - Hazardous Weather

Credits: 3
Prerequisite(s): MTR 1400 ~~or MTR 2400~~ or AES 1400~~; and completion of General Studies requirements in Written Communication~~
Description: ~~This course considers~~ Students examine the nature and causes of hazardous weather, the predictability of hazardous weather events, and the economic and societal impacts of these events. ~~The~~ Students also learn the strategies for the protection of life and property from hazardous weather ~~are also considered~~.

(C) NUT - ~~490G~~ 4905 - Infant and Child Nutrition, Growth and Development ~~(Fall 2024)~~

Credits: 1
Description: Students in this course examine the progression of development in the nutritional physical, cognitive, social, and emotional domains and identifies developmental milestones for infants and toddlers. Emphasis is on the interactions between biological processes and environmental factors. Students learn about the major theories of infant development, the impact of culture and diversity, the role of caregivers and family, and the importance of observation and assessment.

(M) PHI 3360 - Business Ethics

Credits: 3
Prerequisite(s): Any PHI or RLG lower division course; or Written Communication CO1, CO2, or CO3 course; or any other Arts and Humanities General Studies course
Description: Does the phrase "Business Ethics" sound like a contradiction in terms? Students explore the intersection of business goals and ethical values. ~~They~~ Students learn how to communicate about ethics in a clear and professional way. Topics include: What are the responsibilities of a good business? How can employees avoid causing moral harm? How might businesses morally contribute to society?
General Studies: Arts and Humanities

(M) PSY 2001 - Careers and Professional Development in Psychology

Credits: 3
Prerequisite(s): PSY 1001
Description: ~~This course provides students with an overview of careers and opportunities in the field of psychology.~~ In this course, students gain practical knowledge and skills for success as a psychology major, before and after graduation. Students learn strategies for academic success from experts and from each other. Regarding life after graduation, an overview of careers and opportunities in the field of psychology is explored. Topics include the sub- specialties and professions within psychology, career options for psychologists, and graduate school and/or bachelor's level employment. Students learn the differences between psychology sub-specialties and the educational requirements for entering different specialties. In addition, students learn professional skills such as creating a resume, creating a personal statement, using professional etiquette, ~~searching research databases,~~ and writing in APA style.

(M) PSY 3380 - Clinical Neuropsychology

Credits: 3
Prerequisite(s): PSY 1001 and (PSY 2120 or BIO 1000 or BIO 1030 or BIO 1080) and junior status
Description: ~~This course covers the history of neuropsychology; the assessment of organic and nonorganic brain damage; and the causes, assessment, behavioral outcomes, treatment, and prognosis of various brain disorders and diseases.~~ Students gain an understanding of the history of neuropsychology and how organic and nonorganic brain damage is determined. Students analyze the causes, assessment methods, behavioral outcomes, treatment, and prognosis of various brain disorders and diseases.

(M) PSY 3560 - Psychopharmacology

Credits: 3
Prerequisite(s): PSY 1001 and (PSY 2120 or BIO 1000 or BIO 1080 or BIO 1081) and junior standing
Description: ~~This course provides the foundation for understanding the basic mechanisms of drug action, specifically how drugs are delivered and removed from their sites of action. The pharmacological features of different classes of drugs and the ways in which drugs produce their biological effects are discussed. Pharmacodynamic and pharmacokinetic principles are explored through a study of both therapeutic drugs and recreational drugs. A review of regulatory and governmental control issues is included.~~ Students in this course gain the foundation for understanding the basic mechanisms of drug action, specifically how drugs are delivered and removed from their sites of action. Students analyze the pharmacological features of different classes of drugs and the ways in which drugs produce their biological effects. Students apply principles of pharmacodynamics and pharmacokinetics principles to understand effects of therapeutic drugs and recreational drugs. Students also understand regulatory and governmental control of psychoactive substances.

(M) PSY 4520 - Sensation and Perception

Credits: 3
Prerequisite(s): PSY 1001 and (PSY 2120 or BIO 1000 or BIO 1030 or BIO 1080 or BIO 1081) and junior standing.
Description: ~~This course examines how information about the outside world is sensed and how that information is organized and interpreted to form perceptions. Anatomy and physiology of the sensory systems are studied, as are perceptual theories, models, controversies, and applications.~~ Students will acquire foundational knowledge about the anatomy and physiology of the sensory systems (vision, hearing, touch, taste, and smell), including the perceptual process from detecting an environmental stimulus to the formation of a perception. In addition, students will learn about theories, models, controversies, and applications associated with the sensory systems, and experimental methodologies used to study the perceptual process.

(M) PUB 3020 - Introduction to Epidemiology in Public Health

Credits: 3
Prerequisite(s): PUB 1000
Prerequisite(s) or Corequisite(s): PSY 2310 or MTH 1210
Description: Students will learn basic principles, concepts, and methods of epidemiology within population health. Topics will include the dynamic behavior and study of disease, critical data gathering and analysis of population health measures, ethical concepts in epidemiological study design and analysis, and investigating disease problems and the associations between risk factors and disease outcomes.

(M) SCI 3950 - Teaching Science in Secondary Schools

Credits: 3
Prerequisite(s): EDS 3130~~, EDS 3140~~ and (EDS 3140 or EDS 3170)
Corequisite(s): SCI 3960
Prerequisite(s) or Corequisite(s): EDS 3210, EDS 3240
Description: Secondary Science Methods explores the nature of science and inquiry in preparation for teaching science in a secondary school environment. Teacher candidates learn to choose, develop, and implement curriculum based upon students' needs, a deep understanding of how people learn science, and how to align with both state and national content standards. Inclusive and anti-racist approaches to student assessment, family engagement, safety, and professional development are also emphasized.

(M) SCI 3960 - Field Experience in Teaching Science in Secondary Schools

Credits: 1
Prerequisite(s): EDS 3130~~, EDS 3140~~ and (EDS 3140 or EDS 3170)
Corequisite(s): SCI 3950
Prerequisite(s) or Corequisite(s): EDS 3210, EDS 3240
Description: This 60-hour field experience provides opportunities to develop teacher candidates' professional and pedagogical skills in a science

classroom. In coordination with the classroom teacher, teacher candidates design and implement science content lessons, prepare for and supervise laboratory investigations, and adjust science instruction for students with diverse needs. Course assignments and evaluations are designed to help teacher candidates become reflective practitioners. Field placements are arranged by the Office of Clinical Experiences & Partnerships in collaboration with local schools.

(M) SOC 3280 - Queer Theory

Credits: 3
~~**Prerequisite(s):** GWS 1001 or GWS 1200~~
Description: ~~This course surveys a broad array of scholarship in queer theory, as well as applications of queer theory in a variety of academic fields to explore practices, identities, and communities as well as the cultural construction of gender and sexuality.~~ In this course, students survey a broad array of scholarship in queer theory, as well as applications of queer theory to explore the ways individuals, groups and communities form and resist norms. Ultimately, students analyze a variety of issues such as sexuality and gender, race and nation, medical and carceral practices, trans studies, disability studies, and decolonial practices, using queer theories.
Note: Credit will be granted for only one prefix: SOC or GWS.
Cross Listed Course(s): GWS 3280

(M) SOC 3590 - Social Statistics

Credits: 3
~~**Prerequisite(s):** MTH 1210 or permission of instructor~~
Description: This course covers descriptive and inferential statistics and their application to social phenomena. It focuses on statistical significance, measures of association, and the use of SPSS to analyze data.

(M) THE 3265 - Teaching General Theatre

Credits: 2
Prerequisite(s): Permission of Department
Corequisite(s): THE 4225
Description: Students develop competencies for teaching general theatre in both elementary and secondary school settings. Course content includes experience with traditional elementary methodologies, application of technology to theatre, and theatrical performance opportunities. Additional instruction includes classroom management, assessment strategies, and the role of general theatre in education. THE 4225 Field Experience in Teaching Theatre in K-12 is a co-requisite course.

(M) THE 4210 - Variable Topics in Theatre

Credits: 1-3
Prerequisite(s): ~~THE 2210,~~ THE 2220~~,~~ and THE 2240; or permission of department
Description: This course provides detailed and intensive study of specific theatre genres and practices.
Note: This course may be repeated under different topics for up to 9 credits total.

(N) THE 4225 - Field Experience in Teaching Theatre in K-12

Credits: 1
Corequisite(s): THE 3265
Description: Students in this field-based course are provided with opportunities to develop teacher candidates' professional and pedagogical skills in a Theatre classroom. In coordination with the classroom teacher, teacher candidates design and implement content lessons, use content strategies to improve both information acquisition and literacy skills, and adjust instruction for students with diverse needs, including Culturally and Linguistically Diverse backgrounds. Course assignments and evaluations are designed to help teacher candidates become reflective practitioners. THE 3265 Teaching General Theatre is a co-requisite course.

Course Descriptions (Graduate)

(N) MBA - 5615 - Digital Content Creation

Credits: 3
Prerequisite(s): MBA 5605
Description: This course focuses on the principles and practices of creating high-impact digital content. Students learn to design, produce, and adapt content for various digital platforms using creative tools and techniques that drive engagement.

(N) MBA - 5685 - Digital Marketing Strategy

Credits: 3
Prerequisite(s): MBA 5605
Description: In this course students build a strategic framework for planning, executing, and evaluating digital marketing initiatives. Students examine current trends, platforms, and consumer behavior in digital environments to develop integrated marketing strategies that align with business goals.

(N) MLS - 5000 - Clinical Practice in Laboratory Science

Credits: 3
Description: Students in this class become familiar with the principles and applications of ethical practice and professionalism in medical laboratory science, including analytical techniques, laboratory mathematics and data handling, laboratory instrumentation and methodologies, specimen collection and handling, and safety regulations. Quality control, quality assurance, and quality improvement, including pre-analytical, analytical, and post-analytical variables, and method verification are emphasized.

(N) MLS - 5010 - Seminar in Education and Management in Medical Laboratory Sciences

Credits: 1
Description: Students explore basic theory in training and management in the medical laboratory. Through class discussions and case-based study, students prepare an instructional unit on a technical subject relevant to the medical laboratory. In the management unit, students develop a theoretical foundation and basic skills for assuming initial laboratory leadership roles and prepares students for MLS certification requirements and later advanced study in healthcare administration. Students develop professional assessment activities that can measure employee competency and to devise training checklists and activities that can be used for new employee orientation and MLS student internships.

(N) MLS - 5020 - Seminar in Medical Laboratory Science Research

Credits: 1
Description: Students explore the theory behind laboratory research practice, including evaluation of source materials and ethical considerations of research. Students complete a proposal in which they formulate a research question supported by a literature review and write a research paper based on their findings. Students in this course create a poster presentation at a national or regional MLS meeting.

(N) MLS - 5100 - Medical Microbiology I

Credits: 2
Description: Students explore the theoretical and technical aspects of the major categories of medically important bacteria and their relationship to both normal human microbiota and the pathogenic organisms found in clinical settings. During laboratory sections they learn principles of sample preparation and evaluation, rapid testing methods, and basic techniques used in clinical microbiology laboratories, including sterile technique, collection and transport of clinical specimens, gram stain testing and interpretation, testing methodologies, and the identification of the major classes of medically important aerobic organisms as they relate to human body site anatomy.

(N) MLS - 5110 - Medical Microbiology II

Credits: 6
Prerequisite(s): MLS 5100
Description: Students explore the theoretical and technical aspects of the major categories of medically important bacteria and their relationship to both normal human microbiota and the pathogenic organisms found in clinical settings. During laboratory sections they learn principles of sample preparation and evaluation, rapid testing methods, and basic techniques used in clinical microbiology laboratories, including sterile technique,

collection and transport of clinical specimens, gram stain testing and interpretation, testing methodologies, and the identification of the major classes of medically important aerobic organisms as they relate to human body site anatomy.

(N) MLS - 5150 - Parasitology for Medical Laboratory Scientists

Credits: 1
Prerequisite(s): MLS 5100
Description: Students study parasites present in the human body either as commensals or potential pathogens. They gain a knowledge of parasitic life cycles including an understanding of the ways infection is acquired and spread, the pathogenicity of disease, and the ways in which disease might be controlled. They also see examples of morphological criteria to permit the correct identification of a wide range of human parasites.

(N) MLS - 5160 - Mycology for Medical Laboratory Scientists

Credits: 1
Prerequisite(s): MLS 5100
Description: Students study medically important fungi, including yeast, dermatophytes, and opportunistic and dimorphic fungi. We put emphasis on morphologic identification, both macroscopically and microscopically, of pathogenic organisms as well as the saprophytes (contaminants) encountered in clinical specimens.

(N) MLS - 5170 - Mycology and Parasitology Laboratory

Credits: 2
Pre/Corequisite(s): MLS 5150, MLS 5160
Description: Students learn techniques used in clinical laboratories to collect, isolate, and identify fungi and parasites in patient samples.

(N) MLS - 5250 - Immunology, Serology, and Molecular Diagnostics

Credits: 2
Description: Students explore theories of immunodiagnostics and immunopathology, and apply those theories to practical applications in clinical analysis. They review principles of serologic and molecular methods of clinical diagnosis and correlate these with human disease. Specific assays are covered with a focus on diagnosis of clinical processes. We emphasize problem-solving of discrepant results and troubleshooting of assay performance through review of case simulations.

(N) MLS - 5300 - Urinalysis

Credits: 1
Description: Students analyze renal anatomy and physiology as they relate to urine formation and composition in health and disease. Through laboratory experiences, students perform chemical and microscopic analyses of urine, interpret findings in relation to normal and abnormal physiology, operate and maintain laboratory instrumentation, and correlate results with disease processes.

(N) MLS - 5310 – Body Fluids

Credits: 1
Prerequisite(s): MLS 5400, MLS 5300
Pre/Corequisite(s): MLS 5410
Description: Students in this course learn to accurately analyze certain body fluids encountered in the field of laboratory medicine. These fluids include cerebral spinal fluid (CSF), serous fluids, synovial fluid, and semen. The student learn to perform appropriate testing methods, analyze results, troubleshoot inconsistent results, recognize sources of error, and correlate testing results with clinical patient data and associated disease states.

(N) MLS - 5400 – Hematology I

Credits: 2
Description: Students become familiar with the structure and function of red blood cells, leukocytes and platelets, and the concepts of hematopoiesis and cell maturation with an emphasis on normal morphology and its correlation with the complete blood count (CBC) report. After reviewing the principles of laboratory techniques, students master routine testing methods including cell and reticulocyte counts, hemoglobin and hematocrit, sedimentation rates, and complete blood count reports and indices calculations.

(N) MLS - 5410 – Hematology II

Credits: 3
Prerequisite(s): MLS 5400
Description: Students become familiar with the morphology of abnormal blood cells and the pathogenesis and mechanisms of hematologic disorders, including proliferative disorders, normal and abnormal hemoglobin disorders, anemias, and leukemia. Students perform routine clinical tests and correlate results with disease state, hematopoiesis and identification of the maturation sequence as seen in peripheral blood and bone marrow, maintenance and quality control of instrumentation as well as back up manual methods. Problems of discrepant results and troubleshooting of methodologies are emphasized.

(N) MLS - 5430 - Coagulation

Credits: 2
Prerequisite(s): MLS 5400
Pre/Corequisite(s): MLS 5410, MLS 5310
Description: Students in this course explore hemostatic mechanisms, including the study of coagulation in the intrinsic and extrinsic systems, platelet and vessel function, and hypercoagulability. Analytical methodologies for the detection of abnormalities are studied for all systems.

(N) MLS - 5440 - Immunohematology

Credits: 4
Prerequisite(s): MLS 5250
Description: Students develop theoretical and technical skills related to blood banking (immunohematology) in the first half of the course, including quality control, blood group serology, human blood group antigens and antibodies and their significance, antibody detection and identification, current transfusion practices, and component transfusion therapy. They progress into advanced theoretical and laboratory techniques in the second half, covering hemolytic diseases of newborns and complex transfusion service problem-solving, as well as screening and care of donors, donor blood collection and processing, and storage of blood components.

(N) MLS - 5500 - Chemical Analysis of Biophysiology

Credits: 4
Pre/Corequisite(s): MLS 5000
Description: Students explore analytical procedures used in chemistry and the physiological chemistry of renal function, water balance, electrolytes, acid-base balance, point-of-care techniques, endocrinology, liver function, cardiac function, lipid metabolism, protein analysis/electrophoresis, therapeutic drug monitoring, drugs of abuse, and chemistry automation. Students engage in laboratory sessions with assorted clinical laboratory procedures, interpret results, troubleshoot, develop strategies for continuous assessment of laboratory performance, and analyze quality control data in each of the major areas of clinical chemistry. Their interpretation is enhanced through laboratory reports and clinical case analysis.

(N) MLS - 6000 - Advanced Medical Laboratory Sciences

Credits: 1
Prerequisite(s): MLS 5010, MLS 5110, MLS 5150, MLS 5160, MLS 5170, MLS 5310, MLS 5410, MLS 5430, MLS 5440, MLS 5500
Description: Students gain an advanced and comprehensive overview of medical laboratory science knowledge, concepts, correlations, and applications for the student who has completed the MLS didactic and lab curriculum. Course content aligns with student clinical courses. Students qualify to sit for national certification and entry into the profession upon successful completion of this course and applied clinical coursework.

(N) MLS - 6100 – Clinical Microbiology

Credits: 3
Prerequisite(s): MLS 5110, MLS 5150, MLS 5160, MLS 5170
Description: In a professional, clinical setting, students apply techniques and methods used for the isolation and identification of bacteria, viruses, fungi and parasites considered to be of human pathogenic significance. Students interpret results from rapid identification techniques, molecular testing, and organism culture by body site. Students also perform and interpret antibiotic susceptibility testing of bacteria. Emphasis is placed on quality control and performance improvement methods, and safety procedures used in the modern clinical laboratory.

(N) MLS - 6400 – Clinical Hematology

Credits: 3

Prerequisite(s): MLS 5410, MLS 5300, MLS 5310, MLS 5430
Description: Students in this course apply the theoretical and classroom laboratory knowledge of medical hematology to a professional, clinical setting. Students become familiar with medical laboratory workflow as they process specimens, analyze body fluids, perform routine and emergency testing procedures, read differential morphology, and interpret results. Instrument maintenance and quality control are emphasized.

(N) MLS - 6410 – Clinical Immunohematology

Credits: 3
Prerequisite(s): MLS 5250 and MLS 5440
Description: Students will perform routine testing in a hospital or blood donation center. Students learn and apply proper care and use of equipment and materials, perform blood group determinations, compatibility testing, antibody identification, and pre- and post-natal testing of newborns and mothers. Instruction includes appropriate follow up and specialized testing as it relates to transfusion reactions and result interpretation. Problem solving and troubleshooting as they relate to patient test results are emphasized.

(N) MLS - 6500 - Chemical Analysis of Clinical Biophysiology

Credits: 3
Prerequisite(s): MLS 5000, MLS 5500
Description: In this clinical rotation, students gain experience with automated testing procedures and high-volume workflow using a variety of clinical analysis methodologies. Areas of student participation include automated analysis using spectrophotometric and immunochemical single and multichannel discrete analysis systems, blood gas analysis, therapeutic drug monitoring, drugs of abuse screening and identification, hormone assessment, and computer-controlled instrumentation. This clinical practicum includes colorimetric, kinetic, and enzymatic analysis, the use of immunoassay and molecular techniques.

(N) MLS - 6600 - Clinical Molecular Diagnostics

Credits: 1
Prerequisite(s): MLS 5250
Description: Students in this course gain practical experience in clinical molecular diagnostics, including sample collection and preparation, methodologies, and instrumentation. Students work in a professional setting under the supervision of a practicing medical laboratory scientist.

(N) MLS - 6900 - Management Capstone in Medical Laboratory Sciences

Credits: 1
Prerequisite(s): MLS 5010, MHA 5000
Description: Working in small teams, students apply the theories in healthcare administration to practice in case-based analysis specific to medical laboratory sciences. Students prepare a written case analysis that they present for discussion by their peers and evaluation by internal and external stakeholders.

(M) NUT 5990 - Lactation Internship I

Credits: ~~1-12~~ 1
~~**Prerequisite(s):** NUT 4950/5950 and NUT 4970/5970~~
Description: This course teaches graduate level lactation counseling skills using virtual lactation support consultations. All student lactation internship placements will be conducted under the direct supervision of an International Board Certified Lactation Consultant (IBCLC) preceptor. ~~The lactation internship will provide 42.5 hours of clinical lactation internship placement for each 1 credit. The clinical lactation placement will be in hospitals, WIC clinics, outpatient lactation support offices, private practice lactation support settings and virtual lactation support consultations. All student lactation internship placements will conducted under the direct supervision of an International Board Certified Lactation Consultant (IBCLC) preceptor.~~

(M) SLHS 6100 - Clinical Practica I

Credits: ~~2~~ 1-2
Prerequisite(s): SLHS 5310
Corequisite(s): SLHS 6101
Pre/Corequisite(s): SLHS 5320
Description: Faculty supervised learning experience in which the student applies knowledge gained in the MS SLP program to the assessment and treatment of clients with communication differences/disorders. Required co-registration in weekly seminar will focus on application of knowledge

from didactic courses to clients as well as on professional issues surrounding the practice of speech and language pathology.
Note: *This course is repeatable for a maximum of six semester hours. Student must achieve a B- or better for this course to count towards the MS SLP.*