



2017-2018 PROGRAM REQUIREMENTS
Degree: Bachelor of Science
Major: Biological Sciences
Concentration: Biology, Secondary Education

About This Major . . .

The Biology program offers coursework, in conjunction with the Center for Teacher Education, leading to licensure in secondary education science. Graduates of the program can teach in the state of Colorado or use their teaching expertise in other careers. After completing foundation sciences classes in Biology, Chemistry, Physics and Geology, students choose 10 hours of upper level Biology course work, in consultation with their advisor.

The secondary licensure program provides teacher education candidates with broad content knowledge in science and prepares them as teachers for grades 7 through 12. A minimum of 75 credit hours of Essential Learning and content area coursework must be completed with a minimum GPA of 2.80 before a candidate may apply for admission to the Center for Teacher Education secondary licensure program. Please see the Teacher Education Admission Packet for further information on admissions criteria. EDUC 115, What It Means to be a Teacher, and EDUC 215, Teaching as a Profession, must be taken before applying to the program.

For more information on what you can do with this major, go to <http://www.coloradomesa.edu/career/whatmajor.html>.

All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Utilize the scientific approach to address novel questions and problems through the development of hypotheses, design of experiments, collection of data, analysis of data, and interpretation of results. (Quantitative Fluency/Applied Learning)
2. Identify, examine, evaluate and discuss the scientific literature. (Critical Thinking)
3. Articulate biological principles and ideas effectively, both in written and oral form. (Communication Fluency)
4. Instruct students based on self-written learning plans to address individual learning and developmental patterns in the Biological Sciences. (Specialized Knowledge)
5. Design a safe and supportive learning environment for secondary education students. (Applied Learning)
6. Apply Biology content knowledge while working with learners to access information in real world settings assuring learner mastery of Biological Sciences. (Specialized Knowledge)
7. Integrate assessment, planning, and instructional strategies in coordinated and engaging ways through multiple means of communication. (Critical Thinking/Communication Fluency)
8. Engage in meaningful and intensive professional learning and self-renewal by regularly examining practice through ongoing study, self-reflection, and collaboration. (Specialized Knowledge)

Advising Process and DegreeWorks

This document is intended for informational purposes to help determine what courses and associated requirements are needed to earn a degree. The suggested course sequencing outlines how students could finish degree requirements. Some courses are critical to complete in specific semesters, while others may be moved around. Meeting with an academic advisor is essential in planning courses and altering the suggested course sequencing. It is ultimately the student's responsibility to understand and fulfill the requirements for her/his intended degree(s).

DegreeWorks is an online degree audit tool available in MAVzone. It is the official record used by the Registrar's Office to evaluate progress towards a degree and determine eligibility for graduation. Students are responsible for reviewing their DegreeWorks audit on a regular basis and should discuss questions or concerns with their advisor or academic department head. Discrepancies in requirements should be reported to the Registrar's Office.

Graduation Process

Students must complete the following in the first two months of the semester prior to completing their degree requirements:

- Review their DegreeWorks audit and create a plan that outlines how unmet requirements will be met in the final semester.
- Meet with their advisor and modify their plan as needed. The advisor must approve the final plan.
- Submit the "Intent to Graduate" form to the Registrar's Office to officially declare the intended graduation date and commencement ceremony plans.
- Register for all needed courses and complete all requirements for each degree sought.

Submission deadlines and commencement details can be found at <http://www.coloradomesa.edu/registrar/graduation.html>.

If a student's petition for graduation is denied, it will be her/his responsibility to consult the Registrar's Office regarding next steps.

INSTITUTIONAL DEGREE REQUIREMENTS

The following institutional degree requirements apply to all CMU baccalaureate degrees. Specific programs may have different requirements that must be met in addition to institutional requirements.

- 120 semester hours minimum.
- Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher.
- 40 upper-division credits (an alternative credit limit applies to the Bachelor of Applied Science degree).
- 2.00 cumulative GPA or higher in all CMU coursework.
- A course may only be used to fulfill one requirement for each degree/certificate.
- No more than six semester hours of independent study courses can be used toward the degree.
- Non-traditional credit, such as advanced placement, credit by examination, credit for prior learning, cooperative education and internships, cannot exceed 30 semester credit hours for a baccalaureate degree; A maximum of 15 of the 30 credits may be for cooperative education, internships, and practica.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- Capstone exit assessment/projects (e.g., Major Field Achievement Test) requirements are identified under Program-Specific Degree Requirements.
- The Catalog Year determines which program sheet and degree requirements a student must fulfill in order to graduate. Visit with your advisor or academic department to determine which catalog year and program requirements you should follow.
- See "Requirements for Undergraduate Degrees and Certificates" in the catalog for a complete list of graduation requirements.

PROGRAM-SPECIFIC DEGREE REQUIREMENTS

- 2.80 cumulative GPA or higher in all CMU coursework
- 2.80 cumulative GPA or higher in coursework toward the major content area
- All EDUC prefix courses must be completed with a grade of B or better
- ALL other coursework toward the degree must be successfully completed prior to the internship.
- A grade of B or better must be earned in all required courses, unless otherwise stated.

ESSENTIAL LEARNING REQUIREMENTS (31 semester hours)

See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

English (6 semester hours, must receive a grade of "B" or better and must be completed by the time the student has 60 semester hours.)

- ENGL 111 - English Composition (3)
- ENGL 112 - English Composition (3)

Mathematics (3 semester hours, must receive a grade of "B" or better, must be completed by the time the student has 60 semester hours.)

- MATH 113 -College Algebra (4) or higher
3 credits apply to the Essential Learning requirements and one credit applies to the required related study area

Humanities (3 semester hours)

- Select one Humanities course (3)

Social and Behavioral Sciences (6 semester hours)

- PSYC 233 - Human Growth and Development (3)
- Select one Social and Behavioral Sciences course (3)

Natural Sciences (7 semester hours, one course must include a lab)

- One of the following courses:
 - ENVS 101 - Introduction to Environmental Science (3)
 - GEOL 103 - Weather and Climate (3)
 - GEOL 104 - Oceanography (3)
 - GEOL 105 - Geology of Colorado (3)
 - PHYS 101 - Elementary Astronomy (3)
- BIOL 105 - Attributes of Living Systems (3)
- BIOL 105L - Attributes of Living Systems Laboratory (1)

History (3 semester hours)

- Select one History course (3)

Fine Arts (3 semester hours)

- Select one Fine Arts course (3)

OTHER LOWER-DIVISION REQUIREMENTS

Wellness Requirement (2 semester hours)

- KINE 100 - Health and Wellness (1)
- Select one Activity course (1)

Essential Learning Capstone (4 semester hours)

Essential Learning Capstone must be taken after completion of the Essential Learning English and Mathematics requirements, and when a student has earned between 45 and 75 hours.

- ESSL 290 - Maverick Milestone (3)
- ESSL 200 - Essential Speech (1)

FOUNDATION COURSES (13 semester hours) Must receive a grade of "B" or better.

A higher level subject may be taken in the same category with advisor approval.

- CHEM 121 - Principles of Chemistry (4)
- CHEM 121L - Principles of Chemistry Laboratory (1)
- CHEM 122 - Principles of Organic Chemistry (4)
- CHEM 122L - Principles of Organic Chemistry Laboratory (1)
- STAT 200 - Probability and Statistics (3)

BS, BIOLOGICAL SCIENCES, BIOLOGY SECONDARY EDUCATION REQUIREMENTS (40 semester hours, must pass all courses with a grade of "B" or higher)

Required Core Courses (13 semester hours)

- BIOL 106 - Principles of Animal Biology (3)
- BIOL 106L - Principles of Animal Biology Laboratory (1)
- BIOL 107 - Principles of Plant Biology (3)
- BIOL 107L - Principles of Plant Biology Laboratory (1)
- BIOL 385 - Nature and Philosophy of Science (3)
- BIOL 483 - Senior Thesis (2)

Required Related Study Area (19 semester hours)

- MATH 113 - College Algebra (1)
- One of the following sets of courses:
 - GEOL 111 - Principles of Physical Geology (3) with GEOL 111L - Principles of Physical Geology Laboratory (1)
 - GEOL 113 - Field-Based Intro to Physical Geology (3) with GEOL 113L - Field-Based Intro to Physical Geology Laboratory (1)
- GEOL 112 - Principles of Historical Geology (3)
- GEOL 112L - Principles of Historical Geology Laboratory (1)
- PHYS 111 - General Physics (4)
- PHYS 111L - General Physics Laboratory (1)
- PHYS 112 - General Physics II (4)
- PHYS 112L - General Physics II Laboratory (1)

Biology Electives (8 semester hours)

Select 8 semester hours of upper division BIOL courses:

- _____
- _____
- _____
- _____

GENERAL ELECTIVES (All college level courses appearing on your final transcript, not listed above that will bring your total semester hours to 120 hours. 1 semester hour)

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SECONDARY EDUCATION REQUIREMENTS (29 semester hours)

Program Requirements: ENGL 111, ENGL 112, PSYC 233, EDUC 115 and 215 (all with a grade of B or better) and formal acceptance to the Teacher Education Program.

- EDUC 115 - What It Means to be a Teacher (1) (8 field experience hours)
- EDUC 215 - Teaching as a Profession (1) (12 field experience hours)
- EDUC 342 - Pedagogy and Assessment: Secondary and K-12 (4) (20 field experience hours)
- EDUC 343 - Teaching to Diversity (3) (20 field experience hours)
- EDUC 442 - Integrating Literacy across the Curriculum: Secondary and K-12 Art (3) (60 field experience hours)
- EDUC 475 - Classroom Management (1)
- EDUC 497 - Content Methodology Practicum (3) (80 field experience hours)
- EDUC 497D - Methods of Teaching Secondary Science (2)
This course is only offered in the fall semester. It may be taken with either the 300-level or 400-level EDUC courses but must be taken before the student teaching semester.
- EDUC 499G - Teaching Internship and Colloquia: Secondary (12) (600 field experience hours)

SUGGESTED COURSE SEQUENCING

Freshman Year, Fall Semester: 16 credits

- BIOL 105 - Attributes of Living Systems (3) and BIOL 105L - Attributes of Living Systems Laboratory (1)
- ENGL 111 - English Composition (3)
- CHEM 121 - Principles of Chemistry (4) and CHEM 121L - Principles of Chemistry Laboratory (1)
- MATH 113 - College Algebra (4)

Freshman Year, Spring Semester: 15 credits

- BIOL 106 - Principles of Animal Biology (3) and BIOL 106L - Principles of Animal Biology Laboratory (1)
 - ENGL 112 - English Composition (3)
 - CHEM 122 - Principles of Organic Chemistry (4) and CHEM 112L - Principles of Organic Chemistry Laboratory (1)
 - STAT 200 - Probability and Statistics (3)
 - EDUC 115 - What It Means to be a Teacher (1)
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Sophomore Year, Fall Semester: 16 credits

- BIOL 107 - Principles of Plant Biology (3) and BIOL 107L - Principles of Plant Biology Laboratory (1)
- PHYS 111 - General Physics (4) and PHYS 111L - General Physics Laboratory (1)
- PSYC 233 - Human Growth and Development (3)
- ESSL 290 - Maverick Milestone (3)
- ESSL 200 - Essential Speech (1)

Sophomore Year, Spring Semester: 15 credits

- GEOL 111/111L - Principles of Physical Geology (4) or GEOL 113/113L - Field-Based Introduction to Physical Geology (4)
 - PHYS 112 - General Physics II (4) and PHYS 112L - General Physics II Laboratory (1)
 - ENVS 101 or GEOL 103 or GEOL 104 or GEOL 105 or PHYS 101
 - EDUC 215 - Teaching as a Profession (1)
 - KINA Activity (1)
 - KINE 100 - Health and Wellness (1)
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Junior Year, Fall Semester: 15 credits

- Essential Learning - Social and Behavioral Sciences (3)
- GEOL 112 - Principles of Historical Geology (3) and GEOL 112L - Principles of Historical Geology Laboratory (1)
- Upper Division Biology Elective (4)
- Essential Learning - Humanities (3)

Junior Year, Spring Semester: 16 credits

- EDUC 342 - Pedagogy and Assessment: Secondary and K-12 (3)
 - EDUC 343 - Teaching to Diversity (3)
 - BIOL 385 - Nature and Philosophy of Science (3)
 - Upper Division Biology Elective (4)
 - Essential Learning - History (3)
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Senior Year, Fall Semester: 15 credits

- BIOL 483 - Senior Thesis (2)
- Elective (1)
- Essential Learning - Fine Arts (3)
- EDUC 442 - Integrating Literacy Across the Curriculum (3)
- EDUC 475 - Classroom Management (1)
- EDUC 497 - Content Methodology Practicum (3)
- EDUC 497D - Methods of Teaching Secondary Science (2)

Senior Year, Spring Semester: 12 credits

- EDUC 499G - Teaching Internship and Colloquia (12)
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