



## 2017-2018 PROGRAM REQUIREMENTS

Degree: Bachelor of Science

Major: Geosciences

Concentration: Secondary Education

### About This Major . . .

The Geosciences secondary licensure degree is structured for graduates to pursue teaching careers at the middle or high school level. The basic curriculum includes all of the major topics within a traditional geology program while also incorporating teacher education courses required for licensure by the state of Colorado. The degree plan includes basic chemistry, physics, and biology. Instruction takes place in a state of the art science complex on campus which houses several instructional laboratories, projects rooms, a computer applications lab, petrology-mineralogy lab, and rock storage facilities. Most classes include a strong field component, allowing students to take advantage of the diverse geological setting of the Grand Junction area. Students have access to department equipment that includes research petrographic microscopes, binocular microscopes, a computer-assisted x-ray diffractometer, scanning electron microscopes, GPS units, short- and long-period seismometers, and a magnetometer. 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 an Educator, 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. Articulate the fundamental knowledge base and ideas of the major fields of geoscience. (Specialized Knowledge)
2. Collect and interpret geoscience field data. (Applied Learning/Critical Thinking)
3. Collect and interpret geoscience laboratory data. (Applied Learning/Critical Thinking)
4. Use technology (e.g. computer software) for evaluating quantitative geoscience data. (Quantitative Fluency)
5. Write an effective report on a geoscience study. (Communication Fluency)
6. Give an effective oral presentation on a geoscience study. (Communication Fluency)
7. Instruct K-12 students based on self-written learning plans to address individual learning and developmental patterns in the Physical Sciences. (Specialized Knowledge)
8. Design a safe and supportive learning environment for elementary and secondary education students. (Applied Learning)
9. Apply content knowledge while working with learners to access information in real world settings assuring learner mastery of the content. (Specialized Knowledge)
10. Integrate assessment, planning, and instructional strategies in coordinated and engaging ways through multiple means of communication. (Critical Thinking/Communication Fluency)
11. Engage in meaningful and intensive professional learning and self-renewal by regularly examining practice through ongoing study, self-reflection, and collaboration. (Applied Learning)

### 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**

- 126 semester hours required for the BS in Geosciences, Secondary Education.
- 2.80 cumulative GPA or higher in all CMU coursework.
- 2.80 cumulative GPA or higher in coursework toward the major content area.
- A "C" or higher is required in all major and foundation courses.
- 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.

### **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 "C" 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 foundation courses.

**Humanities** (3 semester hours)

- Select one Humanities course (3)

**Social and Behavioral Sciences** (6 semester hours)

- PSYC 233 - Human Growth and Development (3) (must receive a grade of "B" or better)
- Select one Social and Behavioral Sciences course (3)  
GEOG 103 - World Regional Geography (3) recommended

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

- Select one Natural Science course (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** (17 semester hours, must earn a grade of "C" or better in each course.)

- MATH 113 - College Algebra (1)
- CHEM 131 - General Chemistry I (4)
- CHEM 131L - General Chemistry I Laboratory (1)
- PHYS 101 - Elementary Astronomy (3)
- PHYS 111 - General Physics (4)
- PHYS 111L - General Physics Laboratory (1)
- MATH 130 - Trigonometry (3)

**BS, GEOSCIENCES SECONDARY EDUCATION REQUIREMENTS** (40 semester hours, must pass all courses with a grade of "C" or higher)

**Required Core Courses** (40 semester hours)

- One of the following courses:
  - GEOL 103 - Weather and Climate (3)
  - GEOL 104 - Oceanography (3)
- GEOL 111 - Principles of Physical Geology (3)
- GEOL 111L - Principles of Physical Geology Laboratory (1)
- GEOL 112 - Principles of Historical Geology (3)
- GEOL 112L - Principles of Historical Geology Laboratory (1)
- GEOL 202 - Introduction to Field Studies (3)
- GEOL 204 - Computer Applications in Geology (3)
- GEOL 250 - Environmental Geology (3)
- GEOL 301 - Structural Geology (3)
- GEOL 301L - Structural Geology Laboratory (1)
- GEOL 331 - Crystallography and Mineralogy (3)
- GEOL 331L - Crystallography and Mineralogy Laboratory (1)
- GEOL 340 - Igneous and Metamorphic Petrology (3)
- GEOL 340L - Igneous and Metamorphic Petrology Laboratory (1)
- GEOL 402 - Applications of Geomorphology (3)
- GEOL 402L - Applications of Geomorphology Laboratory (1)
- GEOL 444 - Stratigraphy and Sedimentation (3)
- GEOL 444L - Stratigraphy and Sedimentation Laboratory (1)

**GENERAL ELECTIVES** (All college level courses appearing on your final transcript, not listed above that will bring your total semester hours to 120 hours. 3 semester hours)

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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 an Educator (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 (3) (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)

All EDUC prefix courses listed above must be completed with a grade of B or better to progress through the program sequence. Students must take the PRAXIS II exam in the content area prior to commencing the internship. Also, ALL other coursework toward the degree must be successfully completed prior to the internship.

## SUGGESTED COURSE SEQUENCING

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### Freshman Year, Fall Semester: 15 credits

- GEOL 103 - Weather and Climate (3) or GEOL 104 - Oceanography (3)
- GEOL 111 - Principles of Physical Geology (3) and GEOL 111L - Principles of Physical Geology Laboratory (1)
- ENGL 111 - English Composition (3)
- MATH 113 - College Algebra (4)
- KINE 100 - Health and Wellness (1)

### Freshman Year, Spring Semester: 16 credits

- GEOL 112 - Principles of Historical Geology (3) and GEOL 112L - Principles of Historical Geology Laboratory (1)
  - ENGL 112 - English Composition (3)
  - MATH 130 - Trigonometry (3)
  - PSYC 233 - Human Growth and Development (3)
  - GEOG 103 - World Regional Geography (3)
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### Sophomore Year, Fall Semester: 17 credits

- GEOL 202 - Introduction to Field Studies (3)
- GEOL 250 - Environmental Geology (3)
- CHEM 131 - General Chemistry I (4) and CHEM 131L - General Chemistry I Laboratory (1)
- PHYS 111 - General Physics (4) and PHYS 111L - General Physics Laboratory (1)
- EDUC 115 - What It Means to be an Educator (1)

### Sophomore Year, Spring Semester: 17 credits

- GEOL 204 - Computer Applications in Geology (3)
  - BIOL 105 - Attributes of Living Systems (3) and BIOL 105L - Attributes of Living Systems Laboratory (1)
  - PHYS 101 - Elementary Astronomy (3)
  - Essential Learning - Fine Arts (3)
  - Essential Learning - Natural Science (3)
  - KINA Activity (1)
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### Junior Year, Fall Semester: 16 credits

- GEOL 301 - Structural Geology (3) and GEOL 301L - Structural Geology Laboratory (1)
- GEOL 331 - Crystallography and Mineralogy (3) and GEOL 331L - Crystallography and Mineralogy Laboratory (1)
- Essential Learning - History (3)
- ESSL 290 - Maverick Milestone (3)
- ESSL 200 - Essential Speech (1)
- EDUC 215 - Teaching as a Profession (1)

### Junior Year, Spring Semester: 17 credits

- GEOL 340 - Igneous and Metamorphic Petrology (3) and GEOL 340L - Igneous and Metamorphic Petrology Laboratory (1)
  - GEOL 444 - Stratigraphy and Sedimentation (3) and GEOL 444L - Stratigraphy and Sedimentation Laboratory (1)
  - EDUC 342 - Pedagogy and Assessment: Secondary and K-12 (3)
  - EDUC 343 - Teaching to Diversity (3)
  - General Elective (3)
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### Senior Year, Fall Semester: 16 credits

- GEOL 402 - Applications of Geomorphology (3) and GEOL 402L - Applications of Geomorphology Laboratory (1)
- Essential Learning - Humanities (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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