



# 2014-2015 PETITION/PROGRAM SHEET

Degree: Bachelor of Science

Major: Geosciences

Concentration: Secondary Teaching

### 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 general education 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 211, *Foundations of Education*, 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 Social 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)

NAME: \_\_\_\_\_ STUDENT ID # \_\_\_\_\_

LOCAL ADDRESS AND PHONE NUMBER: \_\_\_\_\_

\_\_\_\_\_ ( ) \_\_\_\_\_

I, (Signature) \_\_\_\_\_, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

\_\_\_\_\_  
Signature of Advisor \_\_\_\_\_ 20\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Content Advisor \_\_\_\_\_ 20\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Department Head \_\_\_\_\_ 20\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Registrar \_\_\_\_\_ 20\_\_\_\_  
Date

**Students should work closely with a faculty advisor when selecting and scheduling courses prior to registration.**

**Degree Requirements:**

- 126 semester hours total (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 (A minimum of 15 taken at the 300-400 course levels within the major at CMU).
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A cumulative grade point average of 2.8 or higher must be maintained for content courses and overall GPA.
- 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**
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares a major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student's responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student's faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.
- Students must PASS the PLACE or PRAXIS II exam in the content area prior to beginning the internship. Also, ALL other coursework toward the degree must be successfully completed prior to the internship.

**GENERAL EDUCATION REQUIREMENTS (31 semester hours)**

See the current catalog for a list of courses that fulfill the requirements below. If a course is on the general education list of options and a requirement for your major, you must use it to fulfill the major requirement and make a different selection within the general education requirement.

| Course No | Title | Sem.hrs | Grade | Term | Trns |
|-----------|-------|---------|-------|------|------|
|-----------|-------|---------|-------|------|------|

**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 | _____ | _____ | _____ |

**Math:** (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* | _____ | _____ | _____ |
|----------|-----------------|----|-------|-------|-------|

\*3 credits apply to the General Ed requirements and 1 credit applies to Foundation Courses

**Humanities** (3 semester hours)

|       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|-------|-------|

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

|          |                            |   |       |       |       |
|----------|----------------------------|---|-------|-------|-------|
| PSYC 233 | Human Growth & Development | 3 | _____ | _____ | _____ |
|----------|----------------------------|---|-------|-------|-------|

(PSYC 233 required with a grade of "B" or better)

GEOG 103 recommended

**History** (3 semester hours)

|            |       |       |       |       |       |
|------------|-------|-------|-------|-------|-------|
| HIST _____ | _____ | _____ | _____ | _____ | _____ |
|------------|-------|-------|-------|-------|-------|

**Fine Arts** (3 semester hours)

|       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ | _____ | _____ |
|-------|-------|-------|-------|-------|-------|

| Course No | Title | Sem.hrs | Grade | Term | Trns |
|-----------|-------|---------|-------|------|------|
|-----------|-------|---------|-------|------|------|

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

|           |                              |   |       |       |       |
|-----------|------------------------------|---|-------|-------|-------|
| BIOL 105  | Attributes of Living Systems | 3 | _____ | _____ | _____ |
| BIOL 105L | Attributes of Living Systems | 1 | _____ | _____ | _____ |

**OTHER LOWER DIVISION REQUIREMENTS** (6 semester hours)

**Kinesiology** (3 semester hours)

|             |                     |   |       |       |       |
|-------------|---------------------|---|-------|-------|-------|
| KINE 100    | Health and Wellness | 1 | _____ | _____ | _____ |
| KINA 1_____ | _____               | 1 | _____ | _____ | _____ |
| KINA 1_____ | _____               | 1 | _____ | _____ | _____ |

**Applied Studies** (3 semester hours)

|          |              |   |       |       |       |
|----------|--------------|---|-------|-------|-------|
| SPCH 102 | Speechmaking | 3 | _____ | _____ | _____ |
|----------|--------------|---|-------|-------|-------|

(SPCH 102 Required with a grade of "B" or better)

**FOUNDATION COURSES** (17 semester hours)

|           |                       |   |       |       |       |
|-----------|-----------------------|---|-------|-------|-------|
| CHEM 131  | General Chemistry     | 4 | _____ | _____ | _____ |
| CHEM 131L | General Chemistry Lab | 1 | _____ | _____ | _____ |
| PHYS 101  | Elementary Astronomy  | 3 | _____ | _____ | _____ |
| PHYS 111  | General Physics       | 4 | _____ | _____ | _____ |
| PHYS 111L | General Physics Lab   | 1 | _____ | _____ | _____ |
| *MATH 113 | College Algebra       | 1 | _____ | _____ | _____ |
| MATH 130  | Trigonometry          | 3 | _____ | _____ | _____ |

**GEOLOGY – LEADING TO SECONDARY TEACHING**

**LICENSURE MAJOR REQUIREMENTS** (40 semester hours)

A "C" or higher is required in all major courses.

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

\*Choose either GEOL 103 or GEOL 104

|             |                                       |   |       |       |       |
|-------------|---------------------------------------|---|-------|-------|-------|
| *GEOL _____ | _____                                 | 3 | _____ | _____ | _____ |
| GEOL 111    | Principles of Physical Geology        | 3 | _____ | _____ | _____ |
| GEOL 111L   | Principles of Physical Geology Lab    | 1 | _____ | _____ | _____ |
| GEOL 112    | Principles of Historical Geology      | 3 | _____ | _____ | _____ |
| GEOL 112L   | Principles of Historical Geology Lab  | 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 Lab                | 1 | _____ | _____ | _____ |
| GEOL 331    | Crystallography & Mineralogy          | 3 | _____ | _____ | _____ |
| GEOL 331L   | Crystallography & Mineralogy Lab      | 1 | _____ | _____ | _____ |
| GEOL 340    | Igneous and Metamorphic Petrology     | 3 | _____ | _____ | _____ |
| GEOL 340L   | Igneous and Metamorphic Petrology Lab | 1 | _____ | _____ | _____ |
| GEOL 402    | Applications of Geomorphology         | 3 | _____ | _____ | _____ |
| GEOL 402L   | Applications of Geomorphology Lab     | 1 | _____ | _____ | _____ |
| GEOL 444    | Sedimentology and Stratigraphy        | 3 | _____ | _____ | _____ |
| GEOL 444L   | Sedimentology and Stratigraphy Lab    | 1 | _____ | _____ | _____ |

**Electives** (3 semester hours)

|       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |

**Secondary Education Requirements** (29 Semester Hours)

**\*Prerequisites:** ENGL 111, ENGL 112, SPCH 102, PSYC 233, EDUC 211 (all with a grade of B or better), MATH 113 or higher (with grade of C or higher, Declared major in Geology – Leading to Secondary Teacher Licensure and formal acceptance to the Teacher Education Program

| Course No   | Title   | Sem.hrs | Grade | Term/Trns |  |
|-------------|---|---------|-------|-----------|--|
| EDUC 211    | Foundations of Education                      | 2       | _____ | _____     | 20 Field Experience Hours                |
| EDUC 342*   | Pedagogy & Assessment:<br>Secondary/K-12      | 3       | _____ | _____     | 20 Field Experience Hours                |
| EDUC 343*   | Teaching to Diversity                         | 3       | _____ | _____     | 20 Field Experience Hours                |
| EDUC 442*   | Integrating Literacy Across the<br>Curriculum | 4       | _____ | _____     | 60 Field Experience Hours                |
| EDUC 497*   | Content Methodology<br>Practicum              | 3       | _____ | _____     | 80 Field Experience Hours with EDUC 497D |
| EDUC 497D** | Methods of Teaching Secondary<br>Science      | 2       | _____ | _____     |  |
| EDUC 499G*  | Teaching Internship and<br>Colloquium         | 12      | _____ | _____     | 600 Field Experience Hours               |

Students must PASS the PLACE or 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.

\*\*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.

\*\*\*All EDUC prefix courses listed above must be completed with a grade of B or better to progress through the program sequence.

## SUGGESTED COURSE SEQUENCING FOR A MAJOR IN GEOLOGY – LEADING TO SECONDARY TEACHER LICENSURE

This is a recommended sequence of course work. Certain courses may have prerequisites and/or are only offered during the Fall or Spring semesters. It is the student's responsibility to meet with the assigned advisor and check the 2 year course matrix on the Colorado Mesa website for course availability.

### FRESHMAN YEAR

| Fall Semester | Hours                                | Spring Semester | Hours                                  |
|---------------|--------------------------------------|-----------------|--|
| GEOL 103      | Weather and Climate <b>or</b>        | GEOL 112        | Principles of Historical Geology 3     |
| GEOL 104      | Oceanography 3                       | GEOL 112L       | Principles of Historical Geology Lab 1 |
| GEOL 111      | Principles of Physical Geology 3     | ENGL 112        | English Composition 3                  |
| GEOL 111L     | Principles of Physical Geology Lab 1 | MATH 130        | Trigonometry 3                         |
| ENGL 111      | English Composition 3                | PSYC 233        | Human Growth and Development 3         |
| MATH 113      | College Algebra 4                    | SPCH 102        | Speechmaking 3                         |
| KINE 100      | Health and Wellness <u>1</u>         | KINA            | Activity <u>1</u>                      |
|               | 15                                   |                 | 17                                     |

### SOPHOMORE YEAR

| Fall Semester | Hours                           | Spring Semester                                 | Hours                              |
|---------------|---------------------------------|---|------------------------------------|
| GEOL 202      | Introduction to Field Studies 3 | GEOL 204  | Computer Applications in Geology 3 |
| GEOL 250      | Environmental Geology 3         | BIOL 105  | Attributes of Living Systems 3     |
| CHEM 131      | General Chemistry 4             | BIOL 105L                                       | Attributes of Living Systems 1     |
| CHEM 131L     | General Chemistry Lab 1         | PHYS 101  | Elementary Astronomy 3             |
| PHYS 111      | General Physics 4               | General Education Fine Arts                     | 3                                  |
| PHYS 111L     | General Physics Lab <u>1</u>    | General Education Social/Behavioral Science     |                                    |
|               | 16                              | (GEOG 103 World Regional Geography Recommended) | 3                                  |
|               |                                 | KINA  | Activity <u>1</u>                  |
|               |                                 |   | 17                                 |

### JUNIOR YEAR

| Fall Semester                      | Hours                                | Spring Semester | Hours                                 |
|------------------------------------|--------------------------------------|-----------------|---------------------------------------|
| GEOL 301                           | Structural Geology 3                 | GEOL 340        | Igneous & Metamorphic Petrology 3     |
| GEOL 301L                          | Structural Geology Lab 1             | GEOL 340L       | Igneous & Metamorphic Petrology 1     |
| GEOL 331                           | Crystallography and Mineralogy 3     | GEOL 444        | Sedimentology and Stratigraphy 3      |
| GEOL 331L                          | Crystallography and Mineralogy lab 1 | GEOL 444L       | Sedimentology and Stratigraphy Lab 1  |
| General Education Natural Sciences | 3                                    | EDUC 342        | Pedagogy/Assessment: Secondary/K-12 3 |
| General Education History          | 3                                    | EDUC 343        | Teaching to Diversity 3               |
| *EDUC 211                          | Foundations in Education <u>2</u>    | Elective        | <u>3</u>                              |
|                                    | 16                                   |                 | 17                                    |

\*\*Must be taken prior to acceptance into the Center for Teacher Education.  
Offered in summer, fall and spring semesters.

### SENIOR YEAR

| Fall Semester                | Hours  | Spring Semester | Hours   |
|------------------------------|--|-----------------|---|
| GEOL 402                     | Applications of Geomorphology 3                | EDUC 499G       | Teach. Intern/Colloquium: Secondary <u>12</u> |
| GEOL 402L                    | Applications of Geomorphology Lab 1            |                 | 12  |
| General Education Humanities | 3  |                 |   |
| EDUC 442                     | Integrating Literacy: Secondary/K-12 Art 4     |                 |   |
| EDUC 497                     | Content Methods Practicum 3                    |                 |   |
| EDUC 497D*                   | Methods of Teaching Secondary Science <u>2</u> |                 |   |
|                              | 16   |                 |   |

\*Only offered in fall

**POLICIES:**

1. It is your responsibility to determine whether you have met the requirements for your degree. Please see the Catalog for a complete list of graduation requirements.
2. You must turn in your "Intent to Graduate" form to the Registrar's Office **by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December.**
3. This program sheet must be submitted with your graduation planning sheet to your advisor during the **semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates.**
4. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature.
5. Finally, the Department Head or the department administrative assistant will take the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
6. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your "Intent to Graduate" does not automatically move to a later graduation date.
7. NOTE: The semester before graduation, you will be required to take an exit exam.