2013-2014 PETITION/PROGRAM SHEET
Degree: Bachelor of Science
Major: Geosciences
Concentration: Environmental Geology

About This Major . . .

The Bachelor of Science degree with a major in Geosciences and a concentration in Environmental Geology is designed for students who (1) desire a strong liberal arts education with emphasis on environmental issues within the earth sciences, (2) wish to pursue a graduate degree in environmental geology, or (3) desire a professional or technical career. The Environmental Geology option has the same basic framework as the Geology concentration with a stronger emphasis on geologic hazards, ground-water and surface-water hydrology, low-temperature geochemistry, biological systems, and environmental science. Recent graduates are attending graduate programs at major universities or have entered the work force as geological technicians or professional geologists.

Most classes have a strong field component so that students can enjoy the diverse geological setting of the Grand Junction area. Equipment available includes research petrographic microscopes, binocular microscopes, a computer-assisted x-ray diffractometer, several scanning-electron microscopes (available through the Biology Department), GPS units, short-period and long-period seismometers, and a magnetometer. Computer facilities include modern PC systems with software for communications, database management, word-processing, geographical information systems (GIS) and geostatistics.

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)

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.

_____ _____ 20_____
Signature of Advisor Date

_____ _____ 20_____
Signature of Department Head Date

_____ _____ 20_____
Signature of Registrar Date

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

Degree Requirements:

- 120 semester hours total (A minimum of 28 taken at CMU in no fewer than two semesters).
- 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.
- 2.00 cumulative GPA or higher in all CMU coursework
- A "C" or higher is required in all major and foundation courses.
- 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.

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 "C" 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 151	Calculus I	5*		
*3 credits apply to the General Ed requirements and 2 credits apply to Foundation Courses				
Humanities (3 semester hours)				
Social and Behavioral Sciences (6 semester hours)				
Natural Sciences (7 semester hours, one course must include a lab)				
BIOL 102/102L **or** BIOL 105/105L **or** PHYS 112/112L **or** PHYS 132/132L **or** CHEM 132/132L				
History (3 semester hours)				
HIST				
Fine Arts (3 semester hours)				

Course No	Title	Sem.hrs	Grade	Term/Trns
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)				
FOUNDATION COURSES (15 semester hours)				
CHEM 131	General Chemistry	4		
CHEM 131L	General Chemistry Lab	1		
PHYS 111/111L **or** PHYS 131/131L				
PHYS		4		
PHYS L		1		
STAT 200	Probability and Statistics	3		
*MATH 151	Calculus I	2		
PHYSICAL SCIENCES MAJOR – ENVIRONMENTAL GEOLOGY CONCENTRATION REQUIREMENTS (58 semester hours)				
Geology Core Courses (39 semester hours)				
GEOL 111/111L or GEOL 113/113L *				
*GEOL		3		
*GEOL L		1		
* Either GEOL 111/111L or GEOL 113/113L may be taken for credit, but not both.				
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 301	Structural Geology	3		
GEOL 301L	Structural Geology Lab	1		
GEOL 331	Crystallography & Mineralogy	3		
GEOL 331L	Crystallography & Mineralogy Lab	1		
GEOL 402	Applications of Geomorphology	3		
GEOL 402L	Applications of Geomorphology Lab	1		
GEOL 444	Stratigraphy and Sedimentation	3		
GEOL 444L	Stratigraphy and Sedimentation Lab	1		
GEOL 480	Summer Field Camp	6		
GEOL 490	Seminar	3		
Required Geology Courses (10 semester hours)				
GEOL 250	Environmental Geology	3		
GEOL 355	Basic Hydrology	3		
GEOL 415	Intro to Ground Water	3		
GEOL 415L	Intro to Ground Water Lab	1		

Course No Title Sem.hrs Grade Term/Trns

Restricted Electives (9 semester hours) chosen from the list below
NOTE: Eight hours of Restricted and General Electives must be upper division.

_____ ____ _____ ____ _____ _____
_____ ____ _____ ____ _____ _____
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**Either PHYS 112/112L or PHYS 132/132L may be taken for credit, but not both.

Course No Title Sem.hrs Grade Term/Trns

ELECTIVES (All college level courses appearing on your final transcript, **not listed above** that will bring your total semester hours to 120 hours. 10 semester hours)
NOTE: Eight hours of Restricted and General Electives must be upper division.

_____ ____ _____ ____ _____ _____
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_____ ____ _____ ____ _____ _____

RESTRICTED ELECTIVES:

GEOL 325 Introduction to Engineering Geology (3)
GEOL 359 Surv of Energy-Related Nat Resources (3)
GEOL 361 Surv of Mineral-Related Natural Resources (3)
GEOL 370 Renewable Energy (3)
GEOL 394 Natural Resources of the West (1)
GEOL 404 Geophysics (3)
GEOL 404L Geophysics Lab (1)
GEOL 455 River Dynamics (3)
GEOL 455L River Dynamics Lab (1)
GEOL 497 Structured Research (1-3)
ENVS 312 Soil Science and Sustainability (3)
ENVS 312L Soil Science and Sustainability Lab (1)
ENVS 313 Characterization of Contaminated Sites (3)
ENVS 313L Characterization of Cont Sites Lab (1)
POLS 488 Environmental Politics and Policy (3)
CHEM 132 General Chemistry (4)
CHEM 132L General Chemistry Lab (1)
MATH 152 Calculus II (5)
STAT 311 Statistical Methods (3)
**PHYS 112 General Physics (4)
and PHYS 112L General Physics Lab (1)
or **PHYS 132 Electromagnetism and Optics (4)
and PHYS 132L Electromagnetism and Optics Lab (1)
**Either PHYS 112/112L or PHYS 132/132L may be taken for credit, but not both.

SUGGESTED COURSE SEQUENCING FOR A MAJOR IN PHYSICAL SCIENCE – ENVIRONMENTAL GEOLOGY

This is a recommended sequence of course work. Certain courses may have prerequisites 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
GEOL 111*	Principles of Physical Geology and	3
GEOL 111L*	Principles of Physical Geology Lab **or**	1
GEOL 113*	Fld. Based Intro to Phys Geology **and**	3
GEOL 113L*	Fld. Based Intro to Phys Geology Lab	1
ENGL 111	English Composition	3
MATH 151	Calculus I	5
General Education History		3
		15

Spring Semester		Hours
GEOL 112	Principles of Historical Geology	3
GEOL 112L	Principles of Historical Geology Lab	1
ENGL 112	English Composition	3
General Education Humanities		3
General Education Social/Behavioral Science		3
KINE 100	Health and Wellness	1
KINA	Activity	1
		15

SOPHOMORE YEAR

Fall Semester		Hours
GEOL 202	Introduction to Field Studies	3
GEOL 250	Environmental Geology	3
CHEM 131	General Chemistry	4
CHEM 131L	General Chemistry Lab	1
PHYS 111**	General Physics **and**	4
PHYS 111L**	General Physics Lab **OR**	1
PHYS 131**	Fundamental Mechanics **and**	4
PHYS 131L**	Fundamental Mechanics Lab	1
		16

Spring Semester		Hours
GEOL 204	Computer Applications in Geology	3
STAT 200	Probability and Statistics	3
General Education Social/Behavioral Science		3
Electives		3
General Education Natural Science		3
		15

JUNIOR YEAR

Fall Semester		Hours
GEOL 301	Structural Geology	3
GEOL 301L	Structural Geology	1
GEOL 331	Crystallography & Mineralogy	3
GEOL 331L	Crystallography & Mineralogy Lab	1
GEOL 355	Basic Hydrology	3
General Education Natural Science with Lab		4
		15

Spring Semester		Hours
General Education Fine Arts		3
General Education Applied Studies		3
Elective		3
Restricted Electives		4
		13

SENIOR YEAR

Fall Semester		Hours
GEOL 402	Applications of Geomorphology	3
GEOL 402L	Applications of Geomorphology	1
Restricted Electives		5
Electives		4
		13

Spring Semester		Hours
GEOL 415	Introduction to Ground Water	3
GEOL 415L	Introduction to Ground Water Lab	1
GEOL 444	Stratigraphy and Sedimentation	3
GEOL 444L	Stratigraphy and Sedimentation	1
GEOL 490	Seminar	3
KINA	Activity	1
		12

Summer Semester		Hours
GEOL 480	Summer Field Camp	6

* Either GEOL 111/111L or GEOL 113/113L may be taken for credit, but not both.
**Either PHYS 111/111L or PHYS 131/131L may be taken for credit, but not both.

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 a Major Field Achievement Test (exit exam).