MAJOR: GEOLOGY
DEGREE: BACHELOR OF SCIENCE

Graduates of the geology program at CMU will be prepared for a variety of career opportunities such as an elementary or secondary teacher, engineering geologist, environmental scientist, geochemist, hydrologist, mineralogist, museum scientist, or science policy adviser.

<table>
<thead>
<tr>
<th>Schoolcraft College</th>
<th>Credits</th>
<th>Central Michigan University Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 101 College Composition I</td>
<td>3</td>
<td>ENG 101 Freshman Composition</td>
</tr>
<tr>
<td>ENG 102 College Composition II</td>
<td>3</td>
<td>ENG 201 Intermediate Composition</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
<td>Satisfied by COMA 103 or THEA 241 (see below)</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>Satisfied by MATH 150 (see below)</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td></td>
<td>Satisfied by PHYS 211 (see below) or at CMU</td>
</tr>
<tr>
<td>Writing Intensive</td>
<td></td>
<td>Six credits waived if MTA or MACRAO is satisfied. The remaining 6 must be completed at CMU</td>
</tr>
</tbody>
</table>

**General Education – University Program Requirements**

All MTA applicable courses require a grade “C” or higher

**Group I Humanities (6 – 8) from at least 2 subjects**

MACRAO: Requires 8 hours – MTA: Requires 2 courses

Select one of the following:

- COMA 103 Fundamentals of Speech
- THEA 241 Oral Interpretation of Literature

Select additional courses from:


**Group II Natural Sciences (4 – 8) from at least 2 subjects**

MACRAO: Requires 8 hours (Math + Natural Science) - MTA: Requires 2 courses

At least one course must be a lab science

- GEOL 133 Physical Geology
- CHEM 111 General Chemistry

**Group III Social Sciences (6 – 8) from at least 2 subjects**

MACRAO: Requires 8 hours – MTA: Requires 2 courses

Select courses from:

- ANTH 112, 117, 201, 211, 214; ECON 103, 201, 202; GEOG 133, 241; HIST 134, 137, 138, 141, 151, 152, 153, 230; POLS 105, 109, 205, 207, 209; PSYCH 153, 201, 205, 206, 207, 209, 219, 229, 239, 249; SOC 201, 205, 209, 210, 220, 290

**Group IV Studies in Culture and Diversity**

**Mathematics (3 – 4):**

MACRAO: Requires 8 hours (Math + Natural Science) - MTA: Requires 1 course

MATH 150 Calculus w/ Analytical Geometry I

**MTH 132 Calculus I**

**Major or Degree Related Courses**

- CHM 117 General Chemistry/Qualitative Analysis
- GEOL 134 Historical Geology
- GEOL 237 Mineralogy
- MATH 151 Calculus w/ Analytical Geometry II
- PHYS 211 Physics/Scientists and Engineers I
- PHYS 212 Physics/Scientists and Engineers II

**Important Notes**

- It is strongly recommended that transfer students contact CMU early in their college career to ensure proper course sequencing for their major, optimizing course scheduling, and timely degree completion at CMU. CMU College of Science & Technology 989.774.1870
- Students choose between this major or a Geology major with a hydrogeology/environmental concentration. Students are encouraged to meet with a departmental advisor to discuss the concentration that is in alignment with their individual goals.
- Additional MTH and PHY courses strongly recommended for students who plan to go to graduate school.
- A minor is encouraged but not required.
- In order to sign a Geology major or minor in the Department of Earth and Atmospheric Sciences, a student must first meet with a Geology program advisor and provide written evidence that the student has successfully completed GEL 100, or GEL 130QR, or GEL 101 and GEL 102, or GEL 105 and GEL 102 with a minimum grade of B-.
# Central Michigan University Competency and University Program Course Requirement Information

## CORE COURSES I (3-4 HOURS): 
*Introduction to the Geosciences*

Select one of the following options:

**Option A (4 hours):**
- GEL 101 satisfied at Schoolcraft with GEOL 133
- GEL 102 satisfied at Schoolcraft with GEOL 133

**Option B (4 hours):**
- GEL 102 Physical Geology Laboratory (1)
- GEL 105 Dangerous Planet (3)

**Option C (3 hours):**
- GEL 100 Introduction to Earth Systems (3)

**Option D (3 hours):**
- GEL 130QR Earth Processes (3)

## CORE COURSES II (26 HOURS):
*Geoscience Fundamentals*

- GEL 201 satisfied at Schoolcraft with GEOL 134
- GEL 280 Geomath (2)
- GEO 240 Stratigraphy and Sedimentology (3)
- GEL 290 Introduction to Geologic Investigation (3)
- GEL 310 satisfied at Schoolcraft with GEOL 237
- GEL 370 Structural Geology (3)
- GEL 440 Stratigraphy and Sedimentology (3)
- GEL 450 Geology Field Camp (5)
- MET 101QR Our Changing Climate (3)

## REQUIRED COURSES I (23 HOURS)

- CHM 131 satisfied at Schoolcraft with CHEM 111
- CHM 132 satisfied at Schoolcraft with CHEM 117
- GEL 250/MET 250 Geoscience Mapping/Resource Eval. (3)
- GEO 203QR Introduction/Geographic Information Science (3)
- MTH 133 satisfied at Schoolcraft with MATH 151
- PHY 146 satisfied at Schoolcraft with PHYS 212
- PHY 175 satisfied at Schoolcraft with PHYS 211

**Note:** In addition, students interested in pursuing graduate school are strongly recommended to take:
- MTH 133 satisfied at Schoolcraft with MATH 151
- PHY 146 satisfied at Schoolcraft with PHYS 212

## REQUIRED COURSES II (6 HOURS):
*Advanced Geoscience*

- GEL 321 Petrology (3)
- GEL 430 Invertebrate Paleontology (3)

## REQUIRED COURSES III (6 HOURS)

Select two of the following courses:
- GEL 372 Introduction to Geophysics (3)
- GEL 380WI Hydrogeology (3)
- GEL 385 Introductory Petroleum Geology (3)
- GEL 420 Applied Geostatistics (3)
- GEL 460 Geochemistry (3)
- GEL 550 Economic Geology (3)

## ELECTIVES (3 HOURS)

Select one or more of the following for a total of 3 credits:

- GEL 275, GEL 304, GEL 305, GEL 325, GEL 397, GEL 406WI, GEL 413, GEL 502, GEL 505, GEL 510, GEL 515, GEL 597 OR choose any course from Required Courses III listed above, without double counting.

## General Notes

- A grade of C- or better is required for a course to transfer.
- A bachelor's degree requires a minimum of 124 semester hours of credit. CMU will accept community college transfer credits beyond the recommended 64 semester hours; however students will need to complete a minimum of 60 semester hours from an accredited 4-year degree granting institution. A minimum of 40 hours must be completed at the 300 level or above. A minimum of 30 semester hours of credit must be earned from CMU.
- The University Program Requirements and competencies may be fulfilled by students who satisfy the MACRAO Agreement or the MTA.
- Students are required to meet CMU Competency Requirements prior to reaching 56 credit hours. Competency requirements consist of: two Written English (composition) courses, one Oral English (communication) course, and one Mathematics course be completed with a grade of “C” or above.

Any remaining required and elective courses for a bachelor's degree will be selected in consultation with an academic advisor to ensure that CMU degree requirements are being met.

Contact Undergraduate Admissions at cmuadmit@cmich.edu for major related course information and or explore [CMU's Transfer Equivalency Tool](http://cmich.edu/transfer) and the CMU’s [Transfer Simulation Tool](http://cmich.edu/transfer).

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