GEOLOGY, GENERAL GEOLOGY EMPHASIS, COMPREHENSIVE MAJOR

Liberal Arts (Code 160-010)

University Requirements

GRADUATION REQUIREMENTS FOR BACCALAUREATE DEGREE	
Credit Requirements	
Minimum total for graduation [1]	120
Upper division credits (courses numbered 300 and higher)	39
Liberal Education Core (http://catalog.uwec.edu/undergraduate/graduation-requirements/#header1)	36
Academic Concentrations (http://catalog.uwec.edu/undergraduate/graduation-requirements/#header16)	
Grade Point Requirements (http://catalog.uwec.edu/undergraduate/graduation-requirements/#header14) [2]	
Total	2.00 average
Resident	2.00 average
Major	2.00 average
Minor	2.00 average
Certificate	2.00 average
University Residency Requirements (http://catalog.uwec.edu/undergraduate/graduation-requirements/#header15)	
Minimum total	30
Senior year	23
Major, Standard, upper division in residence	12
Major, Comprehensive, upper division in residence	21
Certificate	25 percent of credits
Procedures Required for Graduation	
Obtain admission to the degree program and/or the College offering it.	
Apply for graduation on CampS.	

[1] Certain programs exceed this minimum.
[2] See special requirements in each College.

Applicability of Credits Toward Graduation

Junior College or Two-Year College Credits. A maximum of 72 semester credits earned in a junior college or two-year college will be accepted as degree credits at UW-Eau Claire.

Extension Credits. Credits earned in credit outreach courses offered by UW-Eau Claire are treated as resident credits. Credits earned in extension courses offered by other units of the University of Wisconsin System are treated as transfer credits. All other (non-UW) extension and correspondence credits are normally limited to one-fourth of the total required for graduation from any curriculum.

WTCS Credits. A maximum of 72 semester credits earned in college parallel programs at Madison Area Technical College, Milwaukee Area Technical College, Nicolet Area Technical College, or Chippewa Valley Technical College may be accepted as degree credits at UW-Eau Claire. A set number of general education courses will be accepted from other technical schools. Occupational and technical courses may also be considered for transfer if the quality and content of the course work from the technical college is judged to be comparable to course work at UW-Eau Claire. Refer to the Transfer Credit Wizard (https://my.uwec.edu/psp/PUBLIC/EMPLOYEE/HRMS/c/EAU_SS_CUSTOM.EAU_TRNCRDWZ.GBL) or contact the UW-Eau Claire Admissions Office for information about the current transfer policy.

USAFI Credit. UW-Eau Claire will accept up to 32 semester credits for work done through the United States Armed Forces Institute, under the provision for non-UW correspondence credit (see Extension Credits above).

Activity Credit (band, chorus, drama, KINS 100-184 courses) Students may count toward graduation no more than one credit of KINS 110-184 courses. Students may count toward graduation no more than four credits earned in any single activity course and no more than 12 credits resulting from any combination of activity courses (excluding KINS 110-184 courses).

Other Restricted Credits. For other University restrictions, see the following: Cooperative Education; Credit by Examination; Satisfactory/Unsatisfactory Registration; Transfer of Credits. College or departmental restrictions may also be placed on Independent Study (399-499 courses), Directed Study (395-495), and other types of credits.

APPLICABILITY OF CREDITS TOWARD GRADUATION	Credit Restrictions
Satisfactory/Unsatisfactory	
Total degree credit	maximum 12
Major, Standard	maximum 1 course
Major, Comprehensive	maximum 2 courses
Minor	maximum 1 course
Credit by Examination	
Total degree credit	maximum ¼ of total
Major or minor	maximum ½ of total
Two-Year College Credits	
Total degree credit	maximum 72 credits
Activity credit (band, chorus, drama, KINS 100-184)	
Total KINS 100-184	maximum 1 credit
Total Band, chorus, drama	maximum 12 credits
Single course band, chorus, drama	maximum 4 credits
Extension credits	
UW-System	no maximum
Other extension/correspondence	maximum ¼ of total
USAFI	
USAFI	maximum 32 credits

Liberal Education Core

The University of Wisconsin-Eau Claire measures learning outcomes to ensure that its graduates have achieved a liberal education and prepared themselves to contribute to a complex society. Upon graduation, each undergraduate will have met the five learning goals of our liberal education core and the 12 learning outcomes they comprise.

LIBERAL EDUCATION CORE REQUIREMENTS	a minimum of 36 credits
Knowledge Goal	
Knowledge Outcome 1 (K1): Natural Sciences (http://catalog.uwec.edu/undergraduate/attribute-k1/)	Two (2) learning experiences
One experience in laboratory science must be selected from either K1 or K2.	
Knowledge Outcome 2 (K2): Social Sciences (http://catalog.uwec.edu/undergraduate/attribute-k2/)	Two (2) learning experiences
One experience in laboratory science must be selected from either K1 or K2.	
Knowledge Outcome 3 (K3): Humanities (http://catalog.uwec.edu/undergraduate/attribute-k3/)	Two (2) learning experiences
Knowledge Outcome 4 (K4): Fine Arts (http://catalog.uwec.edu/undergraduate/attribute-k4/)	One (1) learning experience
Skills Goal	
Skills Outcome 1 (S1): Written and Oral Communication (http://catalog.uwec.edu/undergraduate/attribute-S1/)	Two (2) learning experiences
One S1 must meet the University Writing Requirement (http://catalog.uwec.edu/undergraduate/graduation-requirements/#header10)	
Skills Outcome 2 (S2): Mathematics (http://catalog.uwec.edu/undergraduate/attribute-S2/)	One (1) learning experience
One S2 to meet the University Mathematics Requirement (http://catalog.uwec.edu/undergraduate/graduation-requirements/#header11)	
Skills Outcome 3 (S3): Creativity (http://catalog.uwec.edu/undergraduate/attribute-S3/)	One (1) learning experience
Responsibility Goal	
Responsibility Outcome 1 (R1): Equity, Diversity, and Inclusivity (http://catalog.uwec.edu/undergraduate/attribute-R1/)	Two (2) learning experiences
One R1 must satisfy Design for Diversity (http://catalog.uwec.edu/undergraduate/attribute-DDIV/#header13)	
Responsibility Outcome 2 (R2): Global Perspectives (http://catalog.uwec.edu/undergraduate/attribute-R2/)	One (1) learning experience
Responsibility Outcome 3 (R3): Civic and Environmental Issues (http://catalog.uwec.edu/undergraduate/attribute-R3/)	One (1) learning experience
Integration Goal	
Integration Outcome 1 (I1): Integration (http://catalog.uwec.edu/undergraduate/attribute-I1/)	Two (2) learning experiences
Service-Learning Goal	
Service-Learning (http://catalog.uwec.edu/undergraduate/attribute-SL/#header13)	30 hours

College Degree Requirements

Bachelor of Arts or Bachelor of Science Degree (B.A./B.S.)

University Graduation Requirements. All candidates for degrees must fulfill the requirements for credits, curriculum, GPA, and University residency as specified in the section of this catalog titled University Graduation Requirements (http://catalog.uwec.edu/undergraduate/graduation-requirements/).

College Graduation Requirements: Grade Point Averages. All candidates for degrees in the College of Arts and Sciences must earn minimum resident and total GPAs of 2.00 in the major, the minor, and the certificate. The resident and total GPAs for the major are computed using all attempted credits applicable to the major including those offered by departments other than the major department. The resident and total GPAs for the minor and the certificate are computed similarly.

Major-Minor and Major-Certificate Requirements. A standard major (a minimum of 36 credits) must be supplemented by a minor (a minimum of 24 credits) or by a certificate (12 to 18 credits) to meet graduation requirements for completing a first and second degree program. No minor or certificate is required with a Comprehensive Major (60 or more credits) or with two majors of 36 or more credits each.

Certain degree programs, which include Comprehensive Majors, may require more than the minimum of 120 credits for graduation.

Acceptable academic program combinations are determined at the college level. A major and a minor or a major and certificate or two majors (if available) may not be elected in the same department or program, except in the approved combinations listed here (http://catalog.uwec.edu/undergraduate/arts-sciences/#academicprogramstext).

College Credits. Earn at least 90 credits in courses offered by the College of Arts and Sciences.

Bachelor of Arts Degree in the College of Arts and Sciences (B.A.)

Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); foreign language competency at the 102 level. Foreign language competency may be met in one of two ways: (1) Achieve a score on the foreign language placement test that qualifies the student to enter the 201-level course in a foreign language. (2) Earn a grade of at least C (not C-) or a mark of S in a 102-level foreign language course (or AIS 112 or AIS 122 / LANG 122 or CSD 103).

Bachelor of Science Degree in the College of Arts and Sciences (B.S.)

Fulfillment of all University Graduation Requirements (which includes the Liberal Education Core); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); mathematics competency at the MATH 111, MATH 112

or MATH 113 level. Mathematics competency can be met in one of three ways: (1) Achieve a score on the mathematics placement test that qualifies the student to enter MATH 114. (2) Earn a grade of at least C (not C-) or a mark of S in MATH 111, MATH 112, or MATH 113. (3) Achieve a satisfactory score on the MATH 112 competency test. This test may be attempted no more than two times.

Major Requirements

Liberal Arts (Code 160-010)

The objective of the comprehensive major in geology is to prepare students for graduate programs in geological sciences or for careers as professional geologists, hydrogeologists, or geological engineers. The liberal arts comprehensive major requires completion of the Core and one of the four Emphases.

NOTE: Communication classes, both written and oral, are strongly recommended to fulfill liberal education requirements in any of the emphases.

Core Requirements for all Liberal Arts Emphases in the Comprehensive Geology Major

Code	Title	Credits
23-25 credits		
Select one of the following:		4
GEOL 106	Earth Science	
GEOL 110	Physical Geology	
GEOL 115	Environmental Geology	
GEOL 118	Societal Issues in Earth Science	
Required:		
GEOL 312	Mineralogy and Petrology I	5
GEOL 320	Sedimentology and Stratigraphy	4
GEOL 468	Computers in Geology	1
GEOL 470	Field Geology I	3
CHEM 115	Chemical Principles (or equivalent)	6
Capstone Experience (required for all majors)		0-2

For liberal arts majors, the capstone options may include: GEOL 395 (for a minimum of two credits) or GEOL 471. The capstone will consist of student selection of one of the following options: faculty/student collaborative research, preparation and presentation of a department seminar, internship, field experiences, or other approved experiences. Students working with their adviser will submit a proposal to the department faculty outlining their choice of the capstone experience and explicitly stating how the capstone fits into their personal career goals. The proposal for a capstone experience must be submitted to the chair of the department no later than the second week of the first semester of the senior year.

General Geology Emphasis

Recommended for students planning careers in geology, especially those planning to attend graduate school in geology or engineering.

This emphasis requires completion of the Comprehensive Geology Major Core plus the required and elective credits as listed below.

Code	Title	Credits
Minimum 60 semester credits, including:		
Required Courses		
GEOL 313	Mineralogy and Petrology II	4
GEOL 315	Hydrogeology I	4
GEOL 330	Structural Geology	4
GEOL 418	Earth History	4
GEOL 471	Field Geology II	3
MATH 215	Calculus II	4
PHYS 211	General Physics	5
or PHYS 231	University Physics I	
CS 170	Computing for the Sciences and Mathematics	3
or GEOG 335	Geographic Information Systems I	
Electives		
At least two courses selected from:		
GEOL 336	Introduction to Geochemistry	
GEOL 345	Geomorphology and Aerial Photography Interpretation	
or GEOL 420	Glacial Geology	
GEOL 365	Economic Mineral Deposits	
GEOL 416	Hydrogeology II	
GEOL 445	Engineering Geology and Geophysics	
Select additional electives to total at least 60 credits from the following:		
BIOL 308	Evolution	
BIOL 338	Vegetation Ecology	
BIOL 345	Invertebrate Zoology	
BIOL 356	Wisconsin Wildlife	
CHEM 213	Quantitative Analysis	
CHEM 218	Introduction to Inorganic Chemistry	
CHEM 433	Physical Chemistry I	
CHEM 434	Physical Chemistry II	
GEOG 338	Remote Sensing of the Environment	
GEOG 345	Quaternary Environments	
GEOG 350	Soils and the Environment	
GEOG 363	Watershed Analysis	
GEOG 364	Fluvial Processes and Landforms	
GEOG 435	Geographic Information Systems III	
MSE 315	Materials Characterization	
Any Geology course numbered 300 or above		
MATH 216	Calculus III	
MATH 246	Elementary Statistics	
MATH 311	Differential Equations	
MATH 324	Linear Algebra	
PHYS 212	General Physics	
or PHYS 232	University Physics II	
PHYS 226	Astronomy-Solar System	
PHYS 229	Astronomy-Stars and Galaxies	
PHYS 350	Electric and Electronic Circuits	
PHYS 375	Electromagnetic Fields	

NOTE 1: No degree credit may be earned under the Satisfactory/Unsatisfactory option in any required courses in a geology major or minor.

NOTE 2: Students should be advised that a second semester of physics is usually required for entrance to graduate school.

Program Learning Outcomes

Students completing this program will be expected to meet the following learning outcomes:

- Explain Earth processes.
- Use mathematics and computational methods to analyze scientific and geological data.
- Read, write, and critically evaluate geological papers.
- Construct an internally consistent geological map utilizing field data, topographic maps, geological maps, air photos, geographic information systems (GIS) data, and geological cross sections.
- Describe and identify common rocks, minerals, and fossils.

Sample Degree Plan

Geology, General Geology Emphasis, Comprehensive Major, B.S.

The following is a sample degree plan, based on the 2023-2024 catalog. It is based on the 120-credit graduation requirement and assumes no transferred credits, no requirements waived by placement tests, no courses taken in the summer or winter, no repeated courses, and no remedial courses that may be required. This sample degree plan is intended for first-year students entering UW-Eau Claire in the fall semester. Your own degree plan may differ depending on the course of study selected (second major, minor, etc.). UW-Eau Claire cannot guarantee all courses will be offered as shown, but will provide a range of courses that may enable prepared students to fulfill their requirements in a timely period. This sample degree plan is just a guide. Please consult your advisor, your degree audit, and the catalog to create your own degree plan. *Note*: In order to earn the required minimum of 120 credits for the degree in four years, you should plan to take 15 credits each semester or 30 credits each year.

To earn a degree, students must fulfill all University Graduation Requirements, including the Liberal Education (LE) Core. LE Core course work in the following sample degree plan uses abbreviations such as LE-K1, LE-S2, LE-R3, and LE-I1 to represent the learning outcomes students will meet via completion of their liberal education course work. Please click (https://catalog.uwec.edu/undergraduate/graduation-requirements/)here for a description of the Liberal Education Core outcomes and requirements. Note that the LE Core may be completed through both course and non-course experiences.

Students in this major have the option to pursue either a Bachelor of Arts (B.A.) or a Bachelor of Science (B.S.) degree. The degrees are distinguished by foreign language competency for the B.A. and a higher level of mathematics competency for the B.S.

SOME TIME IN THE FIRST YEAR		
GEOL 106	Earth Science (LE-I1, LE-K1, LE-K1L)	4
GEOL 110	Physical Geology (LE-I1, LE-K1, LE-K1L)	
GEOL 115	Environmental Geology (LE-K1, L-K1L, LE-R3)	
GEOL 118	Societal Issues in Earth Science (LE-I1, LE-K1, LE-K1L)	
MATH 114	Calculus I (LE-S2)	4
CHEM 105	General Chemistry I Lecture	3
CHEM 106	General Chemistry I Laboratory	2
LE Option: Knowledge 3 (LE-K3) Humanities and LE Option: Responsibility 1 (LE-R1, DDIV) Equity, Diversity, and Inclusivity with Design for Diversity [1]		3
CHEM 109	General Chemistry II with Lab	4
MATH 215	Calculus II	4
WRIT 114	Intensive Blugold Seminar in Critical Reading and Writing (LE-S1)	5
OR		
WRIT 116	Blugold Seminar in Critical Reading and Writing (LE-S1)	
GEOL Elective - choose from GEOL 301, 304, 308 or 343 (LE-K1 +/- LE-R3) [2]		3
TOTAL FIRST YEAR		32
SECOND YEAR		
FIRST SEMESTER		
GEOL 312	Mineralogy and Petrology I	5
GEOL 491	Advanced Special Topics	1
SECOND SEMESTER		
GEOL 313	Mineralogy and Petrology II	4
GEOL 320	Sedimentology and Stratigraphy	4
SOME TIME IN THE SECOND YEAR		
GEOG 335	Geographic Information Systems I [3]	3
LE Option: Knowledge 4 (LE-K4) Fine Arts		3
GEOL Elective		4
OR		
PHYS 211	General Physics	
OR		
PHYS 231	University Physics I	
Elective - GEOG 337 not required but very useful for graduates		3
LE Option: Knowledge 2 (LE-K2) Social Sciences +/- LE Option: Skills 1 (LE-S1) Written and Oral Communication, e.g. CJ 201		3
TOTAL SECOND YEAR		30
THIRD YEAR		
FIRST SEMESTER		
GEOL 418	Earth History	4
GEOL 468	Computers in Geology [3]	1
GEOL 315	Hydrogeology I	4
SECOND SEMESTER		
GEOL 330	Structural Geology	4
GEOL 416	Hydrogeology II	4
SOME TIME IN THE THIRD YEAR		
LE Option: Knowledge 2 (LE-K2) Social Sciences and LE Option: Responsibility 1 (LE-R1) Equity, Diversity, and Inclusivity e.g. SOC 101		3
Elective Courses in writing, public speaking (CJ 203, LE-S1), etc.		3
PHYS 211	General Physics (LE-K1)	5
OR		
PHYS 231	University Physics I (LE-K1) [4]	
LE Option: Responsibility 3 (LE-R3) Civic and Environmental Issues [5]		3
LE Option: Knowledge 3 (LE-K3) Humanities and LE Option: Responsibility 2 (LE-R2) Global Perspectives		3
TOTAL THIRD YEAR		30
WINTERIM AND SUMMER DURING/AFTER THIRD YEAR		
FIRST SEMESTER New Mexico, 3 weeks		
GEOL 470	Field Geology I (LE-S3, I1)	3
SECOND SEMESTER Montana, 3 weeks		

GEOL 471	Field Geology II [6]	3
TOTAL		6
FOURTH YEAR		
FIRST SEMESTER		
GEOL Elective - choose from GEOL 345 / GEOL 420, 365 or 461 [7]		3-7
SECOND SEMESTER		
GEOL Elective - choose from GEOL 304, 336 [7, 8]		3-4
SOME TIME IN THE FOURTH YEAR		
Elective - additional PHYS, CHEM, MATH and LE-I1 [8]		3-4
LE Options of Interest		3-6
Elective Courses in writing, public speaking, GIS, etc		3
Elective - Additional PHYS, CHEM, MATH (246) and Ecology		3-4
LE Options of Interest		7-9
TOTAL		30

Minimum total for the baccalaureate degree = 120 credits

1. Many geological issues involve working with people from other cultures. Liberal education electives can help broaden students' perspectives. Potential courses that would count toward this requirement and R1 and Design for Diversity (DD) include AIS 101, AIS 243, and AIS 322/GEOG 322. Many other courses such as HIST 114 and HIST 115 also fulfill the same requirements.
2. A second Geology course might be desired by a student this semester. The upper-division elective classes listed here only have a GEOL 1XX prerequisite and would be available to students.
3. GEOL 468 prepares students for GEOL 470 offered during Winterim. GEOG 335 should be taken prior to GEOL 468.
4. Two semesters of Physics are generally required for attending graduate school, so PHYS 212 or PHYS 232 is strongly recommended.
5. GEOL 115, GEOL 201, GEOL 301, and GEOL 308 carry K1 and R3 designations. If the geology student takes one of these classes during the course of their program, then the R3 learning outcome is satisfied. If GEOL 115 is taken to satisfy the introductory geology requirement, then the student might need to take another I1 class outside of the Geology department.
6. GEOL 471 meets the Geology capstone requirement and prepares student for jobs in Geology.
7. Minimum of two courses from GEOL 336, GEOL 345 or GEOL 420, GEOL 365, GEOL 416, GEOL 461; additional credits needed from BIOL 308, BIOL 345, BIOL 356, CHEM 213, CHEM 218, CHEM 433, CHEM 434, GEOG 337, GEOG 338, GEOG 345, GEOG 350, GEOG 363, GEOG 364, GEOG 435, GEOL 300-level and higher, MATH 216, MATH 246, MATH 311, MATH 324, MSE 315, PHYS 212 or PHYS 232, PHYS 226, PHYS 229, PHYS 350, PHYS 375.
8. Electives must be selected to ensure that a student's degree comprises at least 39 credits of upper-division courses (300-400 level). Students are encouraged to take additional courses in chemistry, ecology, physics, math, GIS, and written and oral communication, but electives can be selected from any discipline as long as the course prerequisites are met. The degree also must have 120 credits.

Note: All students must complete the 30-hour Service-Learning Requirement via a non-credit or credit option (see University Graduation Requirements (http://catalog.uwec.edu/undergraduate/graduation-requirements/)).

RECOMMENDATIONS FOR HIGH IMPACT PRACTICES (HIPs)

The University of Wisconsin-Eau Claire encourages all students to participate in High Impact Practices. The following information identifies any specific recommendations that faculty in this major have concerning which HIPs might be most beneficial to students, and any recommendations about when those HIPs best fit into the degree plan. Students should also consult their faculty advisor for information on HIPs. There are many additional high impact opportunities available. Talk to your academic advisor for more information about incorporating HIPs like Study Abroad (https://studyabroad.apps.uwec.edu/), Intercultural Immersion (https://www.uwec.edu/immersion/), Internship (https://www.uwec.edu/career-services/info-students/internships/), and/or Student/Faculty Collaborative Research (https://www.uwec.edu/orsp/students/student-faculty-collaborative-research-guide/) into your time at UW-Eau Claire.

Liberal Education (LE) Core Guidance

Liberal Education Core (LE Core)

The LE Core comprises 17 learning experiences across 11 learning outcomes. Students must complete a minimum of 36 credits in courses approved for the LE Core.

- K1 – Natural Sciences; two experiences (one lab science experience is required in K1 or K2).
- K2 – Social Sciences; two experiences (one lab science experience is required in K1 or K2).
- K3 – Humanities; two experiences.
- K4 – Fine Arts; one experience.
- S1 – Written and Oral Communication; two experiences (one experience must satisfy the University writing requirement).
- S2 – Mathematics; one experience (must satisfy the University math competency requirement).
- S3 – Creativity; one experience (can be fulfilled in a student's major).
- R1 – Equity, Diversity, and Inclusivity; two experiences (one experience must meet the UW System Design for Diversity (DD) requirement).
- R2 – Global Perspectives; one experience.
- R3 – Civic and Environmental Issues; one experience.
- I1 – Integration; two experiences (one experience can be fulfilled in a student's major).
- SL—Service Learning; 30 hours

Additional LE Core Information

- Most LE Core learning experiences are course based, and many courses meet more than one learning outcome (e.g., K3 and R2 or K1 and R3).
- Some learning experiences can also be met outside of a traditional course (e.g., undergraduate research (S3), study abroad (I1)).
- S1 – An English placement score that fulfills the University writing requirement fulfills one S1 experience.
- S1 – A foreign Language placement score that qualifies the student to enter the 102 level satisfies one S1 experience.
- S1, R2 – A foreign language placement score that qualifies the student to enter the 202 level satisfies one experience in S1 and the R2 experience.

- S2 – A math placement score that qualifies the student to enter Math 111, 112, 113 or 114 fulfills the S2 experience.
- S3 – Completion of two credits from any approved music ensemble fulfills the S3 experience.
- I1 – Any semester long study abroad program can fulfill one I1 experience.