GEOLOGY, DUAL DEGREE GEOLOGICAL ENGINEERING EMPHASIS, COMPREHENSIVE MAJOR

Liberal Arts (Code 160-014)

University Requirements

GRADUATION REQUIREMENTS FOR BACCALAUREATE DEGREE	
Credit Requirements	
Minimum total for graduation [1]	120
Upper division credits (courses numbered 300 and higher)	39
Core General Education	10 courses, 36 credits
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 Universities 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://www.uwec.sis.wisconsin.edu/psp/eauprd-tb/EMPLOYEE/SA/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

Core General Education Requirements (CGER)

CGER Categories	
Mathematics & Quantitative Reasoning (MQR) (http://catalog.uwec.edu/undergraduate/outcome-mqr/)	4 credit hours, 1 course min
Includes University Math Requirement [1]	
Communication & Literacy (CL) (http://catalog.uwec.edu/undergraduate/outcome-cl/)	8 credit hours, 2 course min (including CL-W)
Includes University Writing Requirement (CL-W) (http://catalog.uwec.edu/undergraduate/outcome-clw/) [2]	
Natural Sciences & Wellness (NSW/NSWL) (http://catalog.uwec.edu/undergraduate/outcome-NSW/)	6 credit hours, 1 course min (NSW-Lab required)
Social & Behavioral Sciences (SBS) (https://catalog.uwec.edu/undergraduate/outcome-sbs/)	6 credit hours, 2 course min
Humanities & Arts (HA) (http://catalog.uwec.edu/undergraduate/outcome-ha/)	6 credit hours, 2 course min
Civics & Perspectives (CP) (http://catalog.uwec.edu/undergraduate/outcome-cp/)	6 credit hours, 2 course min
CGER Totals [3]	
Credits	minimum 36 credits
Courses	minimum 10 courses

[1] **University Mathematics Requirement:**
Students satisfy the University Mathematics Requirement in one of four ways:
- completing an approved university-level mathematics course (MQR) with a grade of C (not C-) or above
- achieving a suitable score on the UW Math Placement Test (https://www.uwec.edu/academics/academic-support/advising/testing/placement-testing/)
- achieving a suitable score on an exam such as the Advanced Placement Calculus or Advanced Placement Statistics exams
- achieving a suitable score on a Credit by Examination administered by the Department of Mathematics.

[2] **University Writing Requirement:**
Students satisfy the University Writing Requirement in one of four ways:
- completing a Blugold Seminar in Critical Reading and Writing course (WRIT 102 (https://catalog.uwec.edu/search/?P=WRIT%20102), WRIT 114 (https://catalog.uwec.edu/search/?P=WRIT%20114), WRIT 116 (https://catalog.uwec.edu/search/?P=WRIT%20116), WRIT 118 (https://catalog.uwec.edu/search/?P=WRIT%20118), or WRIT 120 (https://catalog.uwec.edu/search/?P=WRIT%20120)) with a grade of C (not C-) or above
- achieving a suitable score on the English Placement Test (https://www.uwec.edu/academics/blugold-seminar/writ-courses-placement/) (WPT ENGL)
- achieving a suitable score on an exam such as the Advanced Placement English Literature and Composition or Advanced Placement English Language and Composition exams
- achieving a suitable score on the University Writing Program Portfolio.

[3] **Completion via Placement Tests**
- Writing: If the CL-W subcategory is satisfied through a placement test, the CGER Communication and Literacy requirement will be reduced from 8 credits (2 courses) to 3 credits (1 course).
- Mathematics: If the University Math Requirement is satisfied through a placement test, the CGER Mathematics & Quantitative Reasoning requirement will be considered fully met, replacing the 4-credit (1 course) requirement.
- Students must still complete 36 credits across 10 courses, with any remaining credits or courses eligible to be taken from any CGER category.

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 Core General Education Requirements); all College-level degree requirements (major and minor/certificate emphases, GPAs, earning at least 90 credits in Arts and Sciences course work); second language competency at the 102 level. Second language competency may be met in one of two ways: (1) Demonstrate a level of second language competency that qualifies the student to enter the 201-level course in a second language. (2) Earn a grade of at least C (not C-)

or a mark of S in a 102-level second language course (or AIS 112 or AIS 122 or SLHS 103).

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

Fulfillment of all University Graduation Requirements (which includes the Core General Education Requirements); 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 160-014)

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
27-29 credits		
Select one of the following:		4
GEOL 106	Earth Science	
GEOL 110	Physical Geology	
GEOL 115	Environmental Geology	
Required:		
GEOL 312	Mineralogy and Petrology I	5
GEOL 320	Sedimentology and Stratigraphy	4
GEOL 330	Structural Geology	4
GEOL 468	Geological Field Methods	1
GEOL 470	Field Geology I	3
CHEM 115	Chemical Principles (or equivalent)	6
Capstone Experience (required for all majors)		0-2

All Geology majors are required to complete a capstone experience. Approved capstone experiences include 1) successful completion of GEOL 470 and GEOL 471 with a grade of C or above in both courses, 2) successful completion of GEOL 470 and GEOL 472 with a grade of C or above in both courses, 3) student-faculty collaborative research that includes the student giving a public presentation of the research and being listed as the first author of the research presentation, 4) a department-approved internship, 5) other department-approved experiences. Working with their advisor, students submit a proposal to the department faculty outlining their capstone experience choice and explicitly stating how the capstone fits into their personal career goals. The capstone experience proposal must be submitted to the Chair of the Department no later than the second week of the fall semester of the senior year.

Dual Degree Geological Engineering Emphasis

This emphasis combines the benefits of a traditional geology degree with those of a formal engineering education. In this program students receive a UW-Eau Claire geology degree in conjunction with a bachelor's degree in engineering from the University of Minnesota. Students will typically complete most of the UW-Eau Claire University requirements and Dual Degree geology requirements while at UW-Eau Claire before transferring to the engineering school. Students should visit the department office for a sample course schedule that would allow them to complete three full years at UW-Eau Claire and be prepared to transfer to the University of Minnesota for an additional one to two years.

Students must complete a minimum of 84 semester credits before transferring to the engineering school, 56 of which must be taken in residence at UW-Eau Claire.

This emphasis requires completion of the Comprehensive Geology Major Core plus the required credits as listed below. Successful completion of GEOL 470 with a grade of C or above will constitute completion of the capstone experience. Students must fulfill the Core General Education Requirements for UW-Eau Claire and the Liberal Education requirements for University of Minnesota. This can be accomplished in a reasonable manner with careful course selection. Please see Geology advisor.

Code	Title	Credits
Minimum 60 semester credits, including:		
Required Courses		
GEOL 315	Hydrogeology I	4
GEOL 345	Geomorphology and Aerial Photography Interpretation	3
or GEOL 420	Glacial Geology	
MATH 215	Calculus II	4
MATH 216	Calculus III	4
PHYS 231	University Physics I	5
PHYS 232	University Physics II	5
PHYS 255	Statics	3

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: For students planning to practice as professional engineers, GEOG 335; GEOL 416 at UW-Eau Claire or equivalent courses at University of Minnesota are strongly recommended.

NOTE 3: Students should plan on taking MATH 311 (UW-Eau Claire; Differential Equations) or Math 2243 (University of Minnesota; Differential Equations and Linear Algebra) prior to the first semester at University of Minnesota. Differential Equations is a prerequisite for the fluid mechanics course which is to be taken during the first semester at UM.

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.

- Develop geologic models and effectively communicate an applied geology interpretation based on observations.

Geology, Dual Degree Geological Engineering Emphasis, Comprehensive Major, B.S.

The following is a sample degree plan, based on the current 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 Core General Education Requirements (CGER). CGER course work in the following sample degree plan uses abbreviations such as CGER CL, CGER HA, and CGER NSWL to represent the learning outcomes students will meet via completion of the course. Please click here (http://catalog.uwec.edu/undergraduate/graduation-requirements/) for a description of the outcomes and requirements.

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 second 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 (CGER NSWL)	4
OR		
GEOL 110	Physical Geology (CGER NSWL)	
OR		
GEOL 115	Environmental Geology (CGER NSWL)	
MATH 114	Calculus I (CGER MQR)	4
CHEM 108	General Chemistry I	4
CGER Option: Humanities & Arts (HA) - e.g., ART 105, ENGL 130 [1]		3
or CGER Option: Civics & Perspectives (CP) - e.g., AIS 101 [1]		
CHEM 109	General Chemistry II	4
MATH 215	Calculus II	4
WRIT 114	Intensive Blugold Seminar in Critical Reading and Writing (CGER CL)	5
OR		
WRIT 116	Blugold Seminar in Critical Reading and Writing (CGER CL)	
BIOL 180	Environmental Biology and Conservation (CGER NSW)	3
AND		
BIOL 181	Environmental Biology and Conservation Lab (CGER NSWL) [2]	1
TOTAL FIRST YEAR		32
SECOND YEAR		
FIRST SEMESTER		
GEOL 212	Introduction to Geology and Environmental Science	1
GEOL 312	Mineralogy and Petrology I	5
GEOL 315	Hydrogeology I	4
SECOND SEMESTER		
GEOL 320	Sedimentology and Stratigraphy [3]	4
GEOG 335	Geographic Information Systems I [4]	3
GEOL 416	Hydrogeology II [3]	4
SOME TIME IN THE SECOND YEAR		
MATH 216	Calculus III	4
MATH 312	Differential Equations and Linear Algebra	4
CGER Option: Social & Behavioral Sciences (SBS) - e.g., CJ 201, ECON 103		3
or CGER Option: Communication & Literacy (CL) - e.g., CJ 203		
TOTAL SECOND YEAR		32
THIRD YEAR		
FIRST SEMESTER		
GEOL 330	Structural Geology [3, 5]	4
GEOL 345	Geomorphology and Aerial Photography Interpretation	3
OR		
GEOL 420	Glacial Geology [3]	
GEOL 468	Geological Field Methods [4]	1
PHYS 231	University Physics I (CGER NSWL)	5
SECOND SEMESTER		
PHYS 232	University Physics II	5
SOME TIME IN THE THIRD YEAR		
MATH 345	Introduction to Probability and Mathematical Statistics	4
CGER Option: 2 courses from CL, CP, HA, or SBS as appropriate		6
TOTAL THIRD YEAR		28
WINTERIM AND SUMMER DURING/AFTER THIRD YEAR		
GEOL 470	Field Geology I [6]	3
TOTAL		3
FOURTH YEAR		
FIRST SEMESTER		
PHYS 255	Statics	3
SOME TIME IN THE FOURTH YEAR		
Electives (possibly including GEOL 313 or GEOL 365) [7]		13
CGER Option: 4 courses from CL, CP, HA, or SBS as appropriate		12
TOTAL FOURTH YEAR		28

Minimum total for the baccalaureate degree = 120 credits

1 Many geological issues involve working with people from other cultures. Core General Education Requirement electives can help broaden students' perspectives. A valuable class counting toward this requirement, Civics & Perspectives (CP), is AIS 101. Courses such as HIST 114 and HIST 115 fulfill Humanities & Arts (HA) requirements at UWEC and UMN.

2 UMN's LE requirements must be fulfilled, as well as UWEC's CGER requirements. To satisfy UMN LE, students must take a BIOL lab course.

[3] Keep the syllabus and all written reports (including the description of the writing assignment, rough drafts, instructor comments, etc.) as documentation. A student might be able to petition that this course meets the "writing intensive" designation at UMN if the student can prove their case. A student needs four of these courses beyond WRIT 114/WRIT 116, so documenting writing experiences could save a student much time fulfilling UMN requirements.

[4] GEOG 335 should be taken prior to GEOL 468.

[5] Fulfills a technical elective at UMN.

[6] A grade of C (not C-) or above in GEOL 470 meets the Geology capstone requirement for this major.

[7] 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 course prerequisites are met.

Students will typically spend four years at UWEC and 1.5 years at UMN. Students must satisfy Core General Education Requirements for UWEC and Liberal Education requirements for UMN, and they must achieve a satisfactory GPA to be accepted at UMN (floating, but generally >3.2). Graduates of this program will receive a Geology degree from UWEC and a Geoengineering degree from UMN.

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/offices-services/advising-retention-career-center/career-services/internship/job-searching-and), and/or Student/Faculty Collaborative Research (https://www.uwec.edu/offices-services/office-research-and-sponsored-programs/getting-involved-student-faculty-research) into your time at UW-Eau Claire.

Core General Education Requirements (CGER)

Core General Education Requirements (CGER)

The Core General Education Requirements (CGER) includes a minimum of 10 courses across 6 categories. Students must complete a minimum of 36 credits in courses approved for the CGER Core.

- Mathematics & Quantitative Reasoning (MQR) - 4 credits, one course minimum
  - Includes the University Mathematics Requirement[1]
- Communication & Literacy (CL) - 8 credits, two courses minimum
  - Includes the University Writing Requirement (CL-W)[2]
- Natural Sciences & Wellness (NSW/NSWL) - 6 credits, one course minimum (NSW-Lab required)
- Social & Behavioral Sciences (SBS) - 6 credits, two courses minimum
- Humanities & Arts (HA) - 6 credits, two courses minimum
- Civics & Perspectives (CP) - 6 credits, two courses minimum

[1] **University Mathematics Requirement:**
Students satisfy the University Mathematics Requirement in one of four ways:

- completing an approved university-level mathematics course (MQR) with a grade of C (not C-) or above
- achieving a suitable score on the UW Math Placement Test (https://www.uwec.edu/academics/academic-support/advising/testing/placement-testing/)
- achieving a suitable score on an exam such as the Advanced Placement Calculus or Advanced Placement Statistics exams
- achieving a suitable score on a Credit by Examination administered by the Department of Mathematics.

[2] **University Writing Requirement:**
Students satisfy the University Writing Requirement in one of four ways:

- completing a Blugold Seminar in Critical Reading and Writing course (WRIT 102 (https://catalog.uwec.edu/search/?P=WRIT%20102), WRIT 114 (https://catalog.uwec.edu/search/?P=WRIT%20114), WRIT 116 (https://catalog.uwec.edu/search/?P=WRIT%20116), WRIT 118 (https://catalog.uwec.edu/search/?P=WRIT%20118), or WRIT 120 (https://catalog.uwec.edu/search/?P=WRIT%20120)) with a grade of C (not C-) or above
- achieving a suitable score on the English Placement Test (https://www.uwec.edu/academics/blugold-seminar/writ-courses-placement/) (WPT ENGL)
- achieving a suitable score on an exam such as the Advanced Placement English Literature and Composition or Advanced Placement English Language and Composition exams
- achieving a suitable score on the University Writing Program Portfolio.

Completion via Placement Test

- Writing: If the CL-W subcategory is satisfied through a placement test, the CGER Communication and Literacy requirement will be reduced from 8 credits (2 courses) to 3 credits (1 course).
- Mathematics: If the University Math Requirement is satisfied through a placement test, the CGER Mathematics & Quantitative Reasoning requirement will be considered fully met, replacing the 4-credit (1 course) requirement.
- Students must still complete 36 credits across 10 courses, with any remaining credits or courses eligible to be taken from any CGER category.