GEOLOGICAL ENGINEERING, BS

Geological engineering (GLE) brings the fields of geology and engineering to solve challenges with our natural and built environments. It offers opportunities to work outdoors; help communities grow, evolve, and respond to climate change; and guide the sustainable use of Earth's natural resources by:

- Solving issues with rock and soils
- Mitigating the risk of floods, landslides, earthquakes, and other natural hazards
- Managing groundwater and surface water to provide safe drinking water
- Designing and building foundation systems, transportation facilities, dams, tunnels, and other critical infrastructure
- Harnessing and storing alternative energy sources like wind, solar, and geothermal
- Creating systems for recycling, reusing, and disposing of solid and hazardous waste
- Remediating contaminated soil and water

Geological engineers are in demand as society adapts to climate change and resource depletion. Professionals in this field help us sustainably overcome the grand challenges we face in meeting our energy, infrastructure, and resource needs.

At the University of Wisconsin–Madison, geological engineering students excel with hands-on opportunities in well-equipped labs (https://engineering.wisc.edu/blog/gle-spotlight-sydney-klinzing-reflects-on-undergrad-research-and-student-life/), computer facilities, and field research sites. We study minerals, rocks, soil, and the history of the Earth to understand the natural world and how we can live and work in concert with it.

You will learn from faculty and staff from the College of Engineering and the College of Letters and Science, as well as practicing engineers. You'll use the tools and technology that geological engineers use every day, and you'll apply your knowledge to create multidisciplinary solutions for real-world challenges in our capstone design course (https://engineering.wisc.edu/blog/cee-capstone-course-wins-7th-ncees-award-for-renewable-energy-project/).

As a student in our program, you can increase your career potential by earning a dual major in geological engineering and geology and geophysics (https://guide.wisc.edu/undergraduate/letters-science/geoscience/geology-geophysics-bs/) in a single 126-credit program, with no extra coursework. There are also a variety of certificate programs that you can pair with your degree, including two options for sustainable energy, to set yourself up for success.

We encourage students to take the Fundamentals of Engineering (FE) exam before or shortly after graduating (https://engineering.wisc.edu/blog/taking-the-fe-exam-as-an-undergrad/), which is the first step in professional engineering licensure and its benefits. A pass rate of 90% among our geological engineering students surpasses the national average of 70%, ensuring our graduates are well-prepared for their careers.

Geological engineering alumni from our program find rewarding careers with planning and design consulting firms; the natural resource sector; construction companies; energy developers and providers; and city/county, state, and federal agencies. Typical entry-level position titles include geological engineer, geotechnical engineer (https://engineering.wisc.edu/blog/geological-engineering-degree-sparks-rewarding-career-for-devin-welch/), geologist, design engineer, and project engineer.

HOW TO GET IN

HOW TO GET IN

ADMISSION TO THE COLLEGE AS A FRESHMAN

Students applying to UW–Madison (https://www.admissions.wisc.edu/apply/) need to indicate an engineering major (https://engineering.wisc.edu/degrees-programs/undergraduate/) as their first choice in order to be considered for direct admission to the College of Engineering. Direct admission to a major means students will start in the program of their choice in the College of Engineering and will need to meet progression requirements (https://engineering.wisc.edu/student-services/undergraduate-student-advising/progression/) at the end of the first year to guarantee advancement in that program.

CROSS-CAMPUS TRANSFER TO ENGINEERING

UW–Madison students in other schools and colleges on campus must meet minimum admission requirements (https://engineering.wisc.edu/admissions/undergraduate/cross-campus-students/) for admission consideration to engineering degree granting classifications. Cross-campus admission is competitive and selective, and the grade point average expectations may increase as demand trends change. The student's overall academic record at UW–Madison is also considered. Students apply to their intended engineering program by submitting the online application by stated deadlines for spring and fall. The College of Engineering offers an online information tutorial and drop-in advising (https://engineering.wisc.edu/admissions/undergraduate/cross-campus-students/) for students to learn about the cross-campus transfer process.

OFF-CAMPUS TRANSFER TO ENGINEERING

With careful planning, students at other accredited institutions can transfer coursework that will apply toward engineering degree requirements at UW–Madison. Off-campus transfer applicants are considered for direct admission to the College of Engineering by applying to the Office of Admissions with an engineering major listed as their first choice. Those who are admitted to their intended engineering program must meet progression requirements (https://engineering.wisc.edu/admissions/undergraduate/transfer-from-off-campus/) at the point of transfer or within their first two semesters at UW–Madison to guarantee advancement in that program. A minimum of 30 credits in residence in the College of Engineering is required after transferring, and all students must meet all requirements for their major in the college. Transfer admission to the College of Engineering is competitive and selective, and students who have exceeded the 80 credit limit at the time of application are not eligible to apply.

The College of Engineering has dual degree programs with select four-year UW System campuses. Eligible dual degree applicants are not subject to the 80 credit limit.

Off-campus transfer students are encouraged to discuss their interests, academic background, and admission options with the Transfer Coordinator in the College of Engineering: ugtransfer@engr.wisc.edu or 608-262-2473.

SECOND BACHELOR'S DEGREE

The College of Engineering does not accept second undergraduate degree applications. Second degree student (https://engineering.wisc.edu/admissions/undergraduate/adult-students-second-degree-students/)s (https://engineering.wisc.edu/student-services/undergraduate-student-advising/) might explore the Biological Systems Engineering program at UW–Madison, an undergraduate engineering degree elsewhere, or a graduate program in the College of Engineering.

REQUIREMENTS

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (http://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytext) section of the *Guide*.

General Education
- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Breadth—Social Studies: 3 credits
- Communication Part A & Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

Students must complete the College of Engineering Liberal Studies Requirements (http://guide.wisc.edu/undergraduate/engineering/#requirementstext).

Students completing the geological engineering degree are also eligible to earn an additional major in geology and geophysics with no additional coursework. Students must contact an advisor to complete the necessary paperwork to declare the additional geology and geophysics major.

The following curriculum applies to students admitted to the geological engineering degree program.

SUMMARY OF REQUIREMENTS

Code	Title	Credits
Mathematics		13
Engineering Principles and Professional Issues		11-14
Physical Science, Engineering Science, and Geoscience		44
Required Geological Engineering Courses		19
Technical Electives		15
Geological Engineering Design		
Communication Skills		8-9
Liberal Studies Electives		16
Fundamentals of Engineering Exam		
Total Credits		**126-130**

MATHEMATICS

Code	Title	Credits
MATH 221	Calculus and Analytic Geometry 1	5
or MATH 217	Calculus with Algebra and Trigonometry II	
MATH 222	Calculus and Analytic Geometry 2	4
MATH 234	Calculus--Functions of Several Variables	4
Total Credits		**13**

ENGINEERING PRINCIPLES AND PROFESSIONAL ISSUES

Code	Title	Credits
STAT 324	Introductory Applied Statistics for Engineers	3
or STAT 311	Introduction to Theory and Methods of Mathematical Statistics I	
or I SY E 210	Introduction to Industrial Statistics	
CIV ENGR/G L E 291	Problem Solving Using Computer Tools	4
I SY E 313	Engineering Economic Analysis	3
Select one:		1-4
E P D 690	Special Topics in Engineering Professional Development (Topic: Core Competence in Sustainability)	
ENVIR ST/ GEOG 339	Environmental Conservation	
ENVIR ST/ PHILOS 441	Environmental Ethics	
G L E 401	Special Topics in Geological Engineering (Topic: Ethics & Professionalism - GLE)	
INTEREGR 303	Applied Leadership Competencies in Engineering	
Total Credits		**11-14**

PHYSICAL SCIENCE, ENGINEERING SCIENCE AND GEOSCIENCE

Code	Title	Credits
Select one of the following:		5-9
CHEM 109	Advanced General Chemistry	

CHEM 103 & CHEM 104	General Chemistry I and General Chemistry II	
PHYSICS 202	General Physics	5
or PHYSICS 208	General Physics	
E M A 201	Statics (C grade or better)	3
E M A 202	Dynamics	3
E M A 303	Mechanics of Materials	3
CIV ENGR 310	Fluid Mechanics	3
GEOSCI 100	Introductory Geology: How the Earth Works	3
or GEOSCI/ ENVIR ST 106	Environmental Geology	
GEOSCI 202	Introduction to Geologic Structures	4
GEOSCI 204	Geologic Evolution of the Earth	4
GEOSCI/G L E 360	Principles of Mineralogy	3
GEOSCI/G L E 370	Elementary Petrology	3
GEOSCI/G L E 431	Sedimentary & Stratigraphy Lab	1
GEOSCI/G L E 455	Structural Geology	4
Total Credits		**44-48**

REQUIRED GEOLOGICAL ENGINEERING COURSES

Code	Title	Credits
G L E 171	Introduction to Geological Engineering	1
or INTEREGR 170	Design Practicum	
G L E/CIV ENGR 291	Problem Solving Using Computer Tools	4
G L E/ CIV ENGR 330	Soil Mechanics	3
G L E/CIV ENGR/ GEOSCI/ M S & E 474	Rock Mechanics	3
G L E 479	Geological Engineering Design	4
G L E/GEOSCI 594	Introduction to Applied Geophysics	3
G L E/GEOSCI 595	Field Methods in Applied and Engineering Geophysics	1
G L E/GEOSCI 627	Hydrogeology	4
Total Credits		**23**

TECHNICAL ELECTIVES (15 CREDITS)

Students must take a minimum 15 credits in the Technical Electives category, of which 5-6 credits must be design-focused (noted as 'D' in the tracks below), including at least one design-focused course taken prior to G L E 479 Geological Engineering Design. If students take G L E/ CIV ENGR 430 Introduction to Slope Stability and Earth Retention, G L E/CIV ENGR 432 Introduction to Shallow and Deep Foundation Systems and G L E/CIV ENGR 434 Introduction to Underground Openings Engineering, these combine to count as one design course. Additionally, if students take G L E/CIV ENGR 530 Seepage and Slopes, they can use G L E/CIV ENGR 432 and G L E/CIV ENGR 434 to count as one design credit; or, if students take G L E/CIV ENGR 532 Foundations, they can use G L E/CIV ENGR 430 and G L E/CIV ENGR 434 to count as one design credit.

The technical electives are organized into five tracks, described below. Students may select courses within these tracks to focus coursework in a particular area. However, students may complete the technical electives requirement using courses listed in multiple tracks. Suggested technical electives and associated design-focused credits (noted as 'D' in the tracks below) for each track are included below.

Students may take up to 6 credits of directed research credits as technical electives. In addition, one credit of G L E 1 Cooperative Education Program can be used as technical elective.

Energy, Minerals & Mining

Geological engineers possess knowledge and a skill set that serve society's need to manage extraction of traditional energy and mineral resources in more sustainable and efficient ways, develop renewable energy systems such as solar and wind energy sites, and to lead in new technologies to limit carbon emissions through geological sequestration or to develop geothermal exchange fields and reservoirs.

Within this track, the 16 credits of liberal studies can be framed to match those of the Energy Institute certificate in Energy Sustainability (http://guide.wisc.edu/undergraduate/engineering/engineering-physics/engineering-energy-sustainability-certificate/).

Code	Title	Credits
BSE/ENVIR ST 367	Renewable Energy Systems	3
CBE 562	Special Topics in Chemical Engineering (Topic: Energy & Sustainability)	1-3
CIV ENGR/ ENVIR ST/ GEOG 377	An Introduction to Geographic Information Systems	4
E M A 405	Practicum in Finite Elements	3
GEOSCI/ ENVIR ST 411	Energy Resources	3
GEOSCI 457	Conducted Field Trip	2
GEOSCI 459	Field Geology	6
GEOSCI 515	Principles of Economic Geology	4
G L E 401	Special Topics in Geological Engineering (D) [1]	1-3
G L E/ CIV ENGR 430	Introduction to Slope Stability and Earth Retention (D)	1
G L E/ CIV ENGR 434	Introduction to Underground Openings Engineering (D)	1
G L E/ CIV ENGR 530	Seepage and Slopes (D)	3
G L E/ CIV ENGR 535	Wind Energy Balance-of-Plant Design (D)	3
G L E/GEOSCI 757	Advanced Rock Mechanics	3
G L E 801	Special Topics in Geological Engineering (Topic: Geomechanics)	1-3

[1] Only certain G L E 401 topics count as design courses. Please consult with your academic advisor for details.

Sustainability & Environment

Methods for quantifying the long-term effects of development, natural resource extraction, and environmental damage are often neglected or misapplied in cost-benefit life cycle analysis. This track intends to produce professionals capable of leading the field in sustainable design

and construction. The Sustainability & Environment track focuses on quantification, design, and optimization in relation to the use of natural resources and construction materials/methods as well as minimizing the long-term impacts of these activities.

Code	Title	Credits
BSE/ENVIR ST 367	Renewable Energy Systems	3
CBE 562	Special Topics in Chemical Engineering (Topic: Energy & Sustainability)	1-3
CIV ENGR 320	Environmental Engineering	3
CIV ENGR/G L E 421	Environmental Sustainability Engineering	3
CIV ENGR 427	Solid and Hazardous Wastes Engineering (D)	3
CIV ENGR 522	Hazardous Waste Management	3
CIV ENGR 619	Special Topics in Hydrology	1-3
CIV ENGR 649	Special Topics in Structural Engineering (Topic: Sustainable Construction)	1-3
GEOSCI/ ENVIR ST 411	Energy Resources	3
GEOSCI/G L E 629	Contaminant Hydrogeology (D)	3
G L E 401	Special Topics in Geological Engineering (D) [1]	1-3
G L E/ CIV ENGR 635	Remediation Geotechnics (D)	3
G L E/ CIV ENGR 732	Unsaturated Soil Geoengineering	3
SOIL SCI 321	Soils and Environmental Chemistry	3
SOIL SCI/ ENVIR ST 324	Soils and Environmental Quality	3

[1] Only certain G L E 401 Special Topics in Geological Engineering topics count as design courses. Please consult with your academic advisor for details.

Geohazards

The number of fatalities and amount of economic loss due to geohazards increase every year. These losses may result from various geohazards, such as volcanic eruptions, earthquakes, landslides, flooding and tsunamis. The Geohazards track aims to provide students with the necessary skills to perform analyses that minimize loss of life and economic costs associated with geohazards.

Code	Title	Credits
CIV ENGR/ ENVIR ST/ GEOG 377	An Introduction to Geographic Information Systems	4
CIV ENGR 514	Coastal Engineering (D)	2-3
E M A 405	Practicum in Finite Elements	3
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI/GEOG 326	Landforms-Topics and Regions	3
GEOSCI/G L E 350	Introduction to Geophysics: The Dynamic Earth	3
GEOSCI 459	Field Geology	6
G L E/ CIV ENGR 430	Introduction to Slope Stability and Earth Retention (D)	1
G L E/CIV ENGR/ ENVIR ST/ GEOSCI 444	Practical Applications of GPS Surveying	2
G L E/ CIV ENGR 530	Seepage and Slopes (D)	3
G L E/ CIV ENGR 735	Soil Dynamics (D)	3

Water

Water is an essential resource for humans and ecosystems. Water is also linked to mineral and energy resource production, waste management, and land reclamation. Population growth and climate change are creating increasing challenges to this resource. Development and sustainable management of groundwater and surface water, including prevention and mitigation of water quality problems, require combined expertise in geoscience, hydrology, and water resources engineering offered through the Water track.

Code	Title	Credits
CIV ENGR 311	Hydroscience	3
CIV ENGR 412	Groundwater Hydraulics	3
CIV ENGR 414	Hydrologic Design (D)	3
CIV ENGR 415	Hydrology	3
CIV ENGR 500	Water Chemistry	3
CIV ENGR 618	Special Topics in Hydraulics and Fluid Mechanics (D) [1]	1-3
CIV ENGR 619	Special Topics in Hydrology	1-3
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI/GEOG 326	Landforms-Topics and Regions	3
GEOSCI/GEOG 420	Glacial and Pleistocene Geology	3
GEOSCI 430	Sedimentology and Stratigraphy	3
GEOSCI/G L E 629	Contaminant Hydrogeology (D)	3
G L E 401	Special Topics in Geological Engineering (D) [2]	1-3
G L E/ CIV ENGR 430	Introduction to Slope Stability and Earth Retention (D)	1
G L E/CIV ENGR 511	Mixing and Transport in the Environment	3
G L E/ CIV ENGR 530	Seepage and Slopes (D)	3
G L E/ CIV ENGR 732	Unsaturated Soil Geoengineering	3

[1] Must take one of these topics: "Waterfront & Coastal Planning" or "Lake & River Rehabilitation."

[2] Only certain G L E 401 Special Topics in Geological Engineering topics count as design courses. Please consult with your academic advisor for details.

Infrastructure

There are many challenges that need to be overcome to address the aging infrastructure of this country as well as to develop cost effective solutions for new infrastructure in developing nations. The Infrastructure track is developed to provide students a background that enables them to perform engineering calculations to design, construct, assess the current

condition (level of safety), and develop repair and retrofit solutions for civil engineering structures resting on, or constructed in, soil or rock.

Code	Title	Credits
CIV ENGR 649	Special Topics in Structural Engineering (Topic: Sustainable Construction)	1-3
E M A 405	Practicum in Finite Elements	3
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI/GEOG 420	Glacial and Pleistocene Geology	3
GEOSCI 430	Sedimentology and Stratigraphy	3
G L E 401	Special Topics in Geological Engineering (D) [1]	1-3
G L E/ CIV ENGR 430	Introduction to Slope Stability and Earth Retention (D)	1
G L E/ CIV ENGR 432	Introduction to Shallow and Deep Foundation Systems (D)	1
G L E/ CIV ENGR 434	Introduction to Underground Openings Engineering (D)	1
G L E/CIV ENGR/ ENVIR ST/ GEOSCI 444	Practical Applications of GPS Surveying	2
G L E/ CIV ENGR 530	Seepage and Slopes (D)	3
G L E/ CIV ENGR 532	Foundations (D)	3
G L E/ CIV ENGR 535	Wind Energy Balance-of-Plant Design (D)	3
G L E/ CIV ENGR 730	Engineering Properties of Soils	3
G L E/ CIV ENGR 735	Soil Dynamics (D)	3

[1] Only certain G L E 401 topics count as design courses. Please consult with your academic advisor for details.

COMMUNICATION SKILLS

Code	Title	Credits
ENGL 100	Introduction to College Composition	3
or COM ARTS 100	Introduction to Speech Composition	
or LSC 100	Science and Storytelling	
or ESL 118	Academic Writing II	
E P D 275	Technical Presentations	2-3
or COM ARTS 105	Public Speaking	
or COM ARTS 181	Elements of Speech-Honors Course	
or COM ARTS 262	Theory and Practice of Argumentation and Debate	
or COM ARTS 266	Theory and Practice of Group Discussion	
INTEREGR 397	Engineering Communication	3
Total Credits		**8-9**

LIBERAL STUDIES (16 CREDITS)

Students must complete the **16 credits** of College of Engineering Liberal Studies Requirements (http://guide.wisc.edu/undergraduate/engineering/#requirementstext).

FUNDAMENTALS OF ENGINEERING EXAM

All students must take the Fundamentals of Engineering exam.

HONORS IN RESEARCH

Students in geological engineering that have completed at least two semesters on the Madison campus with a cumulative GPA of **at least** 3.5 may apply to participate in the Honors in Research program. Students may register for 1 to 3 credits per semester. A grade of P (Progress) will be assigned each semester until the student completes the honors in research program or drops out of the program, at which time a final grade is assigned (based on research progress and the written thesis, if completed). This becomes the grade for all credits taken in G L E 489 Honors in Research.

A senior thesis worth 3 credits of G L E 489 Honors in Research is required. The senior thesis is a written document reporting on a substantial piece of work that is prepared in the style of a graduate thesis. The thesis advisor determines the grade which the student receives for the thesis. A bound copy of the thesis must be submitted to the geological engineering office to complete the program.

The designation "Honors in Research" will be recorded on the student's transcript if the following criteria are met:

1. Satisfaction of requirements for an undergraduate degree in Geological Engineering.
2. A cumulative grade-point average of at least 3.3.
3. Completion of a total of at least 8 credits in G L E 489 Honors in Research.
4. Completion of a senior honors thesis with a final grade of B or better.

Students interested in the Honors in Research program should contact their advisor or the G L E director for more information. Applications to the program are to be submitted to the G L E director with a supporting letter from the student's academic and thesis advisors. Decisions regarding acceptance are made by the G L E director.

UNIVERSITY DEGREE REQUIREMENTS

Total Degree	To receive a bachelor's degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.
Residency	Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. "In residence" credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.
Quality of Work	Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

LEARNING OUTCOMES

LEARNING OUTCOMES

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

FOUR-YEAR PLAN

FOUR-YEAR PLAN

SAMPLE FOUR-YEAR PLAN

First Year

Fall	Credits	Spring	Credits
MATH 221	5	MATH 222	4
CHEM 109	5	E M A 201	3
GEOSCI 100 or 106	3	GEOSCI 204	4
Communications A	3	G L E 171	1
		Liberal Studies Elective	4
	16		**16**

Second Year

Fall	Credits	Spring	Credits
MATH 234	4	CIV ENGR 310	3
E M A 202	3	E M A 303	3
GEOSCI/G L E 360	3	PHYSICS 202 or 208	5
GEOSCI 202	4	GEOSCI/G L E 370	3
CIV ENGR/G L E 291	4	Liberal Studies Elective	3
	18		**17**

Third Year

Fall	Credits	Spring	Credits
STAT 324 or 311	3	Technical Elective	3
Technical Elective	3	Professional Issues	1-4
CIV ENGR/G L E 330	3	G L E/CIV ENGR/ GEOSCI/M S & E 474	3
G L E/GEOSCI 431	1	GEOSCI/G L E 455	4
Liberal Studies Elective	3	INTEREGR 397	3
E P D 275, COM ARTS 105, COM ARTS 181, COM ARTS 262, or COM ARTS 266	2-3		
	15-16		**14-17**

Fourth Year

Fall	Credits	Spring	Credits
Ethnic Studies	3	G L E 479	4
G L E/GEOSCI 594	3	Liberal Studies Elective	3
G L E/GEOSCI 595	1	I SY E 313	3
G L E/GEOSCI 627	4	Technical Elective	3
Technical Elective (design)	3	Technical Elective (design)	3
	14		**16**

Total Credits 126-130

ADVISING AND CAREERS

ADVISING AND CAREERS

ADVISING

Every College of Engineering undergraduate has an assigned academic advisor (https://engineering.wisc.edu/student-services/undergraduate-studentadvising/). Academic advisors support and coach students through their transition to college and their academic program all the way through graduation.

Advisors help students navigate the highly structured engineering curricula and course sequencing, working with them to select courses each semester.

When facing a challenge or making a plan toward a goal, students can start with their academic advisor. There are many outstanding resources at UW–Madison, and academic advisors are trained to help students navigate these resources. Advisors not only inform students about the various resources, but they help reduce the barriers between students and campus resources to help students feel empowered to pursue their goals and communicate their needs.

Students can find their assigned advisor in their MyUW Student Center.

ENGINEERING CAREER SERVICES

Engineering Career Services (https://ecs.wisc.edu) (ECS) assists students in finding work-based learning experiences such as co-ops and summer internships, exploring and applying to graduate or professional school, and finding full-time professional employment.

ECS offers two large career fairs per year, assists students with resume building and developing interviewing skills, hosts skill-building workshops, and meets one-on-one with students to discuss offer negotiations.

Students are encouraged to engage with the ECS office early in their academic careers. For more information on ECS programs and workshops, visit: https://ecs.wisc.edu.

PEOPLE

PEOPLE

PROFESSORS

Kurt L. Feigl
Laurel B. Goodwin
Tracey Holloway
William J. Likos
Steven P. Loheide II
Clifford H. Thurber
Basil Tikoff
Chin H. Wu

ASSOCIATE PROFESSORS

Michael Cardiff
Ken Ferrier
Dante Fratta
Matthew Ginder-Vogel
Andrea Hicks
Hiroki Sone
James Tinjum (Director)
Lucas Zoet

ASSISTANT PROFESSORS

Jesse Hampton
Christopher Zahasky

See also Geological Engineering Faculty Directory (https://engineering.wisc.edu/departments/civil-environmental-engineering/people/).

RESOURCES AND SCHOLARSHIPS

RESOURCES

LABS AND FACILITIES

The geological engineering program utilizes laboratories that are shared with other departments. They include:

Land Information and Surveying Laboratories
Fluid Mechanics Laboratory
Materials Testing Laboratory
Geology and Hydrogeology Laboratories
Rock Mechanics Laboratory
Geotechnical and Geoenvironmental Laboratories
The Halliburton Geoscience Visualization Center

ACCREDITATION

ACCREDITATION

Accredited by the Engineering Accreditation Commission ofABET, https://www.abet.org, under the commission's General Criteria and Program Criteria for Geological and Similarly Named Engineering Programs.

PROGRAM#EDUCATIONAL OBJECTIVES#FOR THE BACHELOR OF SCIENCE IN GEOLOGICAL ENGINEERING

We recognize that our graduates will choose to use the knowledge and skills that they have acquired during their undergraduate years to pursue a wide variety of career and life goals, and we encourage this diversity of paths. Whatever path our graduates may choose, we expect them to be meeting the following objectives at least three to five years after graduation:

1. apply geological engineering principles, analyses, and synthesis to design and implement projects in the natural and built environment;
2. incorporate economic, environmental, political, ethical, social, safety, and global considerations to generate sustainable solutions in the natural and built environment;
3. exhibit strong communication, leadership, and teamwork skills;
4. serve others through professional responsibility and participation in professional and public activities and good citizenship; and
5. demonstrate a continuing commitment to and interest in their own and others' education.

Note: Undergraduate Student Outcomes, number of degrees conferred, and enrollment data are made publicly available at the Geological Engineering#Undergraduate Program website. (In this Guide, the program's Student Outcomes are available through the "Learning Outcomes" tab.)