GEOLOGY - B.S.

College of Arts and Sciences
Department of Geology
221 McGilvrey Hall
Kent Campus
330-672-2680
geology@kent.edu
www.kent.edu/geology

Description

The Bachelor of Science degree in Geology is designed for those interested in a professional career in the field. The curriculum focuses on minerals, rocks, landforms, fossils, structural geology, geochemistry and field mapping, among others. Supplemental courses include introductory chemistry, physics, biology and mathematics. Students are also encouraged to specialize in a applied or theoretical area of the science.

The program features a capstone summer field course in the Black Hills of South Dakota.

The Geology major includes the following optional concentration:

- The **Environmental Geology** optional concentration provides students with specialized training for careers in the well-established and growing field of environmental geology, including water resources, resource management and energy resources. The concentration's curriculum focuses on hydrology, hydrogeology, engineering geology and environmental monitoring techniques.

Fully Offered At:

- Kent Campus

Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

Freshman Students on the Kent Campus: The freshman admission policy on the Kent Campus is selective. Admission decisions are based upon the following: cumulative grade point average, ACT and/or SAT scores, strength of high school college preparatory curriculum and grade trends. The Admissions Office at the Kent Campus may defer the admission of students who do not meet admissions criteria but who demonstrate areas of promise for successful college study. Deferred applicants may begin their college coursework at one of seven regional campuses of Kent State University. For more information on admissions, including additional requirements for some academic programs, visit the admissions website for new freshmen.

Freshman Students on the Regional Campuses: Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Regional Academic Center in Twinsburg, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

English Language Proficiency Requirements for International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score or minimum 48 PTE score, or by completing the ESL level 112 Intensive Program. For more information on international admission, visit the Office of Global Education's admission website.

Transfer, Transitioning and Former Students: For more information about admission criteria for transfer, transitioning and former students, please visit the admissions website.

Program Learning Outcomes

Graduates of this program will be able to:

1. Understand and communicate to others on the nature of scientific investigation and evidence.
2. Understand and communication to others on the complex interrelationships of the biosphere, atmosphere, hydrosphere and the lithosphere through geologic time.
3. Understand Earth materials and interpret geologic and environmental processes.
4. Synthesize geologic information to understand and solve geologic and environmental problems.
5. Demonstrate critical thinking skills.
6. Develop the skills to work as a geologist in the field and in the laboratory.

University Requirements

All students in a bachelor's degree program at Kent State University must complete the following university requirements for graduation.

NOTE: University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Destination Kent State: First Year Experience	1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	
Kent Core (see table below)	36-37
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 (or 42)
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate. Students in a B.A. and/or B.S. degree in the College of Arts and Sciences must complete 42 upper-division credit hours.	
Total Credit Hour Requirement	120
Some bachelor's degrees require students to complete more than 120 credit hours.	

Kent Core Requirements

Kent Core Composition (KCMP)	6
Kent Core Mathematics and Critical Reasoning (KMCR)	3

Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each)	9
Kent Core Social Sciences (KSS) (must be from two disciplines)	6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory)	6-7
Kent Core Additional (KADL)	6
Total Credit Hours:	**36-37**

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
BSCI 10002	LIFE ON PLANET EARTH (KBS)	3-4
or BSCI 10110	BIOLOGICAL DIVERSITY (KBS) (KLAB)	
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
GEOL 11040	HOW THE EARTH WORKS (KBS)	3
GEOL 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
GEOL 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
GEOL 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
GEOL 22000	DEGREE AND CAREER PATHS IN GEOLOGY (ELR)	1
GEOL 23063	EARTH MATERIALS I	4
GEOL 31070	EARTH MATERIALS II (WIC)	4
GEOL 31080	STRUCTURAL GEOLOGY	4
GEOL 34061	INVERTEBRATE PALEONTOLOGY	4
GEOL 41092	SUMMER FIELD CAMP (ELR)	6
GEOL 42035	SCIENTIFIC METHODS IN GEOLOGY	3
or MATH 30011	BASIC PROBABILITY AND STATISTICS	
GEOL 44070	SEDIMENTOLOGY AND STRATIGRAPHY	4
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
Additional Requirements (courses do not count in major GPA)		
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language (see Foreign Language College Requirement below)		8
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		6
General Electives (total credit hours depends on earning 120 credit hours, including 42 upper-division credit hours)		13-14
Additional Requirements or Concentration		
Choose from the following:		20-21
Additional Requirements for Students Not Declaring a Concentration		
Environmental Geology Concentration		
Minimum Total Credit Hours:		120

Additional Requirements for Students Not Declaring a Concentration

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
Geology (GEOL) Upper-Division Electives (30000 or 40000 level) [1]		15-16
Science Electives, choose from the following: [2]		4-5
CHEM 10061 & CHEM 10063	GENERAL CHEMISTRY II (KBS) and GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	
GEOG 49070	GEOGRAPHIC INFORMATION SCIENCE	
PHY 13002 & PHY 13022	GENERAL COLLEGE PHYSICS II (KBS) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
Minimum Total Credit Hours:		20

1 The following courses may not count toward the elective requirement: GEOL 41073, GEOL 41077 and GEOL 41079.

2 Students who intend to pursue graduate studies in geology are recommended to complete both science lectures and labs courses: CHEM 10061, CHEM 10063, PHY 13002, PHY 13022.

Environmental Geology Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
GEOL 32066	GEOMORPHOLOGY	4
GEOL 42069	HYDROGEOCHEMISTRY	3
or GEOL 43040	PRINCIPLES OF GEOCHEMISTRY	
or GEOL 43042	ENVIRONMENTAL GEOCHEMISTRY	
Environmental Geology Concentration Electives, choose from the following:		9-10
GEOL 42030	REMOTE SENSING	
GEOL 42065	WATERSHED HYDROLOGY	
GEOL 42066	PHYSICAL HYDROGEOLOGY	
GEOL 42068	CONTAMINANT HYDROLOGY AND HYDROGEOLOGY	
GEOL 42069	HYDROGEOCHEMISTRY	
GEOL 42074	ENVIRONMENTAL CORE AND WELL LOGGING	
GEOL 42078	ENGINEERING GEOLOGY	
GEOL 43040	PRINCIPLES OF GEOCHEMISTRY	
GEOL 43042	ENVIRONMENTAL GEOCHEMISTRY	
GEOL 43043	ENVIRONMENTAL MINERALOGY	
GEOL 43044	ENVIRONMENTAL ISOTOPES	
Minimum Total Credit Hours:		21

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

Foreign Language College Requirement

- Students pursuing the Bachelor of Science degree in the College of Arts and Sciences must complete 8 credit hours of foreign language.[1]
- Minimum Elementary I and II of the same language

[1] All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may begin their university foreign language experience beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by: (1) passing a course beyond the Elementary I through Intermediate II level or (2) receiving credit through Credit by Exam (CBE), the College Level Examination Program (CLEP), the Advanced Placement (AP) exam or credit through the International Baccalaureate (IB) program; or (3) being designated a "native speaker" of a non-English language (consult with the College of Arts and Sciences Advising Office for additional Information) . When students complete the requirement with fewer than 8 credit hours and two courses, they will complete the remaining hours with general electives.

Roadmaps

- Geology Major (no concentration)
- Environmental Geology Concentration

Geology Major (no concentration)

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Semester One		Credits
GEOL 11040	HOW THE EARTH WORKS (KBS)	3
GEOL 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language		4
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	15
Semester Two		
BSCI 10002 or BSCI 10110	LIFE ON PLANET EARTH (KBS) or BIOLOGICAL DIVERSITY (KBS) (KLAB)	3
GEOL 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
GEOL 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
Foreign Language		4
Kent Core Requirement		3
	Credit Hours	14
Semester Three		
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
GEOL 22000	DEGREE AND CAREER PATHS IN GEOLOGY (ELR)	1
GEOL 23063	EARTH MATERIALS I	4
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	16
Semester Four		
GEOL 31070	EARTH MATERIALS II (WIC)	4
GEOL 31080	STRUCTURAL GEOLOGY	4
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
	Credit Hours	13
Semester Five		
GEOL 34061	INVERTEBRATE PALEONTOLOGY	4
GEOL 42035 or MATH 30011	SCIENTIFIC METHODS IN GEOLOGY or BASIC PROBABILITY AND STATISTICS	3
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
Kent Core Requirement		3
	Credit Hours	15
Semester Six		
Choose from the following:		4-5
CHEM 10061 & CHEM 1006	GENERAL CHEMISTRY II (KBS) and GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	
PHY 13002 & PHY 13022	GENERAL COLLEGE PHYSICS II (KBS) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
GEOG 49070	GEOGRAPHIC INFORMATION SCIENCE	
Geology (GEOL) Upper-Division Courses (30000 or 40000 level)		3
Kent Core Requirement		3
General Electives		4
	Credit Hours	15
Third Summer Term		
GEOL 41092	SUMMER FIELD CAMP (ELR)	6
	Credit Hours	6
Semester Seven		
Geology (GEOL) Upper-Division Courses (30000 or 40000 level)		6
General Electives		8
	Credit Hours	14
Semester Eight		
GEOL 44070	SEDIMENTOLOGY AND STRATIGRAPHY	4
Geology (GEOL) Upper-Division Courses (30000 or 40000 level)		6
General Electives		2
	Credit Hours	12
	Minimum Total Credit Hours:	120

Environmental Geology Concentration

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Semester One		Credits
GEOL 11040	HOW THE EARTH WORKS (KBS)	3
GEOL 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language		4
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	15
Semester Two		
BSCI 10002 or BSCI 10110	LIFE ON PLANET EARTH (KBS) or BIOLOGICAL DIVERSITY (KBS) (KLAB)	3-4
GEOL 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
GEOL 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
Foreign Language		4
Kent Core Requirement		3
	Credit Hours	14
Semester Three		
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
GEOL 22000	DEGREE AND CAREER PATHS IN GEOLOGY (ELR)	1
GEOL 23063	EARTH MATERIALS I	4
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	16
Semester Four		
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4

CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
GEOL 31070	EARTH MATERIALS II (WIC)	4
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
	Credit Hours	14
Semester Five		
GEOL 32066	GEOMORPHOLOGY	4
GEOL 34061	INVERTEBRATE PALEONTOLOGY	4
GEOL 42035 or MATH 30011	SCIENTIFIC METHODS IN GEOLOGY or BASIC PROBABILITY AND STATISTICS	3
Kent Core Requirement		3
	Credit Hours	14
Semester Six		
GEOL 31080	STRUCTURAL GEOLOGY	4
GEOL 42069 or GEOL 43040 or GEOL 43042	HYDROGEOCHEMISTRY or PRINCIPLES OF GEOCHEMISTRY or ENVIRONMENTAL GEOCHEMISTRY	3
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
Kent Core Requirement		3
	Credit Hours	15
Third Summer Term		
GEOL 41092	SUMMER FIELD CAMP (ELR)	6
	Credit Hours	6
Semester Seven		
Environmental Geology Concentration Electives		6
General Electives		7
	Credit Hours	13
Semester Eight		
GEOL 44070	SEDIMENTOLOGY AND STRATIGRAPHY	4
Environmental Geology Concentration Electives		3-4
General Electives		6
	Credit Hours	13
	Minimum Total Credit Hours:	120