GEOLOGY, BS

Program Description

Geology examines the dynamic Earth and its physical, chemical and biologic history. It involves the study of changes that are taking and have taken place and the forces that cause these changes. For example, geologists interpret the movements of the continents over geologic time and the formation of mountains, volcanoes and other features of the Earth's surface. Geologists attempt to understand our physical environment from which we derive most of the natural resources essential to civilization. They investigate the processes that led to the formation of mineral deposits, and oil, gas and coal. They also study environmental change throughout the history of the Earth and how those changes and the development of life are related. Geologists attempt to predict natural disasters such as earthquakes, volcanic eruptions, and landslides, and they are very active in modeling groundwater flow to develop water reserves for municipalities and to protect groundwater from contamination. Geologists study the natural world and apply their knowledge to achieve harmony between the human race and its environment.

Program Learning Outcomes

- Knowledge & Professional Skills: The Geology graduate will demonstrate: theoretical and practical knowledge of geologic principles; teamwork; professional behavior; and communication skills.
- Readiness for Graduate Study and/or Employment: The Geology graduate will demonstrate readiness graduate school or for geoscience employment such as: an environmental geologist, public sector geoscientist, mud logger, geophysicist, mine geologist, exploration geologist, science technician, etc.
- Scholarship: The university supports scholarship where undergraduate students have the opportunity to engage in geoscience research, often publishable, working with faculty mentors.
- Technical Skills: The Geology graduate will solve geologic problems by demonstrating competence conducting field and laboratory studies; creating and interpreting geoscience maps and cross-sections; and analyzing geologic data sets and software and/or technology.

Bachelor of Science Geology

Code	Title	Hours
Geology Course Requirements		
GEOL 121	Physical Geology	4
GEOL 122	Historical Geology	4
GEOL 223	Earth Materials	4
GEOL 308	Structural Geology Systems	4
GEOL 315	Geoenvironmental Systems	4
GEOL 322	Geochemical Systems	4
GEOL 334	Hydrologic Sys: Sur/Grd Water	4
GEOL 355	Stratigraphy and Sedimentation	4
GEOL 380	Introduction to Field Geology	3
GEOL 431	Geophysical Systems	4
GEOL 440	Technology in Geology	2
GEOL 450	Geology Seminar I	1
GEOL 451	Geology Seminar II	1
GEOL 468	Tectonic Systems	5
GEOL 480	Advanced Field Geology	3
Support Courses		
NRES 199	Freshman Seminar	1
CHEM 115	General Chemistry I	5
PHYS 221	Principles of Physics I [1]	4
or PHYS 231	Appl Phys Engineer/Scientist I	
Select one of the following:		4-5
CHEM 116	General Chemistry II	
PHYS 222	Principles of Physics II [1]	
PHYS 232	App Phy Engineer Scientist II	
EVRN 131	Introduction to GIS and GPS	3
MATH 111	College Algebra [1]	3
MATH 112	Calculus Business/Life Science [1]	4
or MATH 151	Calculus I	
Select one of the following:		3
MATH 207	Prin of Statistical Methods	
MATH 308	Probability and Math Stats	
BUSN 211	Business Statistics	
BIOL 280	Biostatistics	
Total Hours		**78-79**

[1] Students with adequate preparation in mathematics and/or interested in graduate school are advised to take MATH 151 Calculus I and MATH 152 Calculus II and PHYS 231 Appl Phys Engineer/ Scientist I and PHYS 232 App Phy Engineer Scientist II and CHEM 115 General Chemistry I and CHEM 116 General Chemistry II.

General Education: All LSSU bachelor's degree candidates must complete the LSSU General Education Requirements.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Environmental Geology Concentration

Code	Title	Hours
Geology Course Requirements		
GEOL 121	Physical Geology	4
GEOL 122	Historical Geology	4
GEOL 223	Earth Materials	4
GEOL 308	Structural Geology Systems	4
GEOL 315	Geoenvironmental Systems	4
GEOL 322	Geochemical Systems	4
GEOL 334	Hydrologic Sys: Sur/Grd Water	4
GEOL 380	Introduction to Field Geology	3
GEOL 431	Geophysical Systems	4
GEOL 440	Technology in Geology	2
GEOL 450	Geology Seminar I	1
GEOL 451	Geology Seminar II	1
GEOL 480	Advanced Field Geology	3
Support Courses		

NRES 199	Freshman Seminar	1
CHEM 115	General Chemistry I	5
CHEM 116	General Chemistry II	5
PHYS 221	Principles of Physics I [1]	4
or PHYS 231	Appl Phys Engineer/Scientist I	
EVRN 131	Introduction to GIS and GPS	3
EVRN 311	Environmental Law	3
EVRN 341	Fate & Transport Environment	4
NSCI 103	Environmental Science	3
NRES 230	Introduction to Soil Science	4
MATH 111	College Algebra [1]	3
MATH 112	Calculus Business/Life Science [1]	4
or MATH 151	Calculus I	
Select one of the following:		3
MATH 207	Prin of Statistical Methods	
MATH 308	Probability and Math Stats	
BUSN 211	Business Statistics	
BIOL 280	Biostatistics	
Distributed Electives		
Select a minimum of 16 credits from the following:		16
CHEM 208	Survey Organic Chem/Biol Apps	
CHEM 225	Organic Chemistry I	
CHEM 231	Quantitative Analysis	
CHEM 326	Organic Chemistry II	
CHEM 332	Instrumental Analysis	
ECON 307	Environmental Economics	
EVRN 211	Field Data Methods	
EVRN 225	Intermediate GIS	
EVRN 315	Human Impacts on Environment	
EVRN 317	Environmental Health Apps	
EVRN 325	Geospatial Analysis	
EVRN 365	App Geospatial Technologies	
EVRN 389	Environmental Research Methods	
NRES 399	Research Project Design	
EVRN 435	Environmental Systems	
EVRN 495	Senior Project	
NRES 499	Senior Capstone	
FIRE 312	Hazardous Materials Management	
GEOG 108	Phy Geog: Meteorology/Climatol	
GEOL 355	Stratigraphy and Sedimentation	
GEOL 490	Research Topics in Geology	
GEOL 495	Senior Project	
POLI 342	Internatl Environmental Policy	
Total Hours		**100**

[1] Students with adequate preparation in mathematics and/or interested in graduate school are advised to take MATH 151 Calculus I and MATH 152 Calculus II and PHYS 231 Appl Phys Engineer/Scientist I and PHYS 232 App Phy Engineer Scientist II.

General Education: All LSSU bachelor's degree candidates must complete the LSSU General Education Requirements.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.

Bachelor of Science Geology, Water and Climate Concentration

Code	Title	Hours
Geology Course Requirements		
GEOL 121	Physical Geology	4
GEOL 122	Historical Geology	4
GEOL 223	Earth Materials	4
GEOL 308	Structural Geology Systems	4
GEOL 315	Geoenvironmental Systems	4
GEOL 322	Geochemical Systems	4
GEOL 334	Hydrologic Sys: Sur/Grd Water	4
GEOL 380	Introduction to Field Geology	3
GEOL 431	Geophysical Systems	4
GEOL 440	Technology in Geology	2
GEOL 450	Geology Seminar I	1
GEOL 451	Geology Seminar II	1
Support Courses		
NRES 199	Freshman Seminar	1
CHEM 115	General Chemistry I	5
PHYS 221	Principles of Physics I [1]	4
or PHYS 231	Appl Phys Engineer/Scientist I	
Select one of the following:		4-5
CHEM 116	General Chemistry II	
PHYS 222	Principles of Physics II [1]	
PHYS 232	App Phy Engineer Scientist II	
EVRN 131	Introduction to GIS and GPS	3
EVRN 389	Environmental Research Methods	3
GEOG 108	Phy Geog: Meteorology/Climatol	4
NSCI 116	Introduction to Oceanography	4
NRES 286	Principles of Watersheds	3
MATH 111	College Algebra [1]	3
MATH 112	Calculus Business/Life Science [1]	4
or MATH 151	Calculus I	
Select one of the following:		3
MATH 207	Prin of Statistical Methods	
MATH 308	Probability and Math Stats	
BUSN 211	Business Statistics	
BIOL 280	Biostatistics	
Distributed Electives		
Select a minimum of ten credits from the following:		10
EVRN 211	Field Data Methods	
EVRN 225	Intermediate GIS	
EVRN 325	Geospatial Analysis	
EVRN 311	Environmental Law	
EVRN 315	Human Impacts on Environment	
EVRN 365	App Geospatial Technologies	
EVRN 341	Fate & Transport Environment	

EVRN 495	Senior Project
GEOL 355	Stratigraphy and Sedimentation
GEOL 480	Advanced Field Geology
GEOL 495	Senior Project
GEOL 490	Research Topics in Geology
NSCI 103	Environmental Science
NRES 230	Introduction to Soil Science
NRES 284	Principles Forest Conservation
NRES 345	Limnology
NRES 399	Research Project Design
NRES 499	Senior Capstone
Total Hours	**90-91**

[1] Students with adequate preparation in mathematics and/or interested in graduate school are advised to take MATH 151 Calculus I and MATH 152 Calculus II and PHYS 231 Appl Phys Engineer/ Scientist I and PHYS 232 App Phy Engineer Scientist II and CHEM 115 General Chemistry I and CHEM 116 General Chemistry II.

General Education: All LSSU bachelor's degree candidates must complete the LSSU General Education Requirements.

A minimum of 124 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.