Bachelor of Science with a Major in Environmental Geosciences

Selected Educational Outcomes

The program leading to the B. S. degree with a major in environmental geosciences is designed to prepare students to enter graduate programs in geography, planning, and related fields; or to embark upon careers in commerce, industry, government, or education. The specific educational objectives include the following:

1. To provide a working knowledge of the basic research tools in physical and cultural geography, environmental research, and digital cartography;
2. To provide the knowledge required to evaluate and interpret environmental data, address and analyze regional environmental questions, and synthesize and recommend solutions to a range of environmental problems;
3. To provide the analytical and technical skills necessary for geographical research including spatial and temporal analysis, digital and conventional mapping, and analysis and interpretation of data;
4. To provide a range of computer-based spatial analysis skills using Geographic Information Science (GIS) and other techniques for digital mapping, data manipulation and analysis, and applications issues.

Examples of Outcome Assessments

Assessment of the education outcomes for the environmental geosciences major is primarily the responsibility of the departmental Geography Area Committee, comprised of faculty with expertise in geography and cognate disciplines. The Committee assesses the extent to which the program requirements create the desired outcomes by using a variety of techniques. Examples of these assessments include the following:

1. All student majors must make oral presentations of their research results to the departmental faculty and submit written copies of their research papers to the departmental office as part of the required Senior Thesis sequence (GEOG 4860/GEOL 4860 and GEOG 4861/GEOL 4861).
2. Students must submit a departmental copy of their portfolios of undergraduate coursework, research projects, and professional activity at the end of their last semester of residence.
3. At the time of major coursework completion, students must complete an exit questionnaire to determine the students' perception of achievement of the major's educational outcomes.
4. Periodic surveys of alumni who have completed the environmental geosciences program will be conducted. These surveys will evaluate the relevancy of the major program to graduates' present employment, their perception of success, and their personal satisfaction with the program. The surveys will also solicit suggestions for improvement of the environmental geosciences major program.

Requirements for the Bachelor of Science Degree with a Major in Environmental Geosciences—Geography Track

Code	Title	Hours
Core Curriculum		**60**
Core Curriculum Areas A-E (See VSU Core Curriculum) [1]		42
Environmental Geosciences majors are required to take MATH 1113 in Area A and MATH 2261 in Area D2. Geography Track majors are advised to take 3 hours of a Foreign Language in Area C. They are advised to take BIOL 1107/BIOL 1107L and CHEM 1211/CHEM 1211L in Area D2 and advised to take GEOG 1100 in Area E.		
Core Curriculum Area F – Geography Track [1,2]		
GEOG 1112K	Introduction to Weather and Climate	
GEOG 1113K	Introduction to Land Forms	
GEOG 2010	Tools of Environmental Geoscience	
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Laboratory I	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Laboratory I (if not taken in Area D2)	
MATH 2261	Analytic Geometry and Calculus I (1 hour left over from Area D)	
MATH 1401	Elementary Statistics	
PHSC 1100	The Universe of Energy	
Senior College Curriculum- Geography Track		**60**
Required upper-level geography courses		
GEOG 3050	Computer Cartography and Image Analysis	3

GEOG 3052	Advanced Geographic Information Systems	3
GEOG 3210	Introduction to Hydrology	4
GEOG 3300	Process Geomorphology	4
GEOG 3410	Cultural Geography	3
GEOG 4710	Statistics for Geoscientists	3
GEOG 4860	Geosciences Senior Seminar	1
GEOG 4861	Senior Thesis	3
GEOG 4862	Thesis Presentation	2
Upper-level electives in a single discipline outside of GEOG		6
Additional Geosciences Electives above 3000		7
Other Supporting Courses		
GEOG 2011	Introduction to Geographic Information Science	3
GEOL 1121K	Principles of Physical Geology (if not taken in Area D.2)	0-4
Modern Foreign Language (3 hours may be taken in Area C)		3-6
Other Guided Electives (includes hours which carry over from Area F)		8-15
Total hours required for the degree		**120**

1 All core classes with prefixes GEOG must be completed with a grade of “C” or better.

2 Hours in excess of 18 will carry over to the senior curriculum.

Requirements for the Bachelor of Science Degree with a Major in Environmental Geosciences—Geology Track

Code	Title	Hours
Core Curriculum		**60**
Core Curriculum Areas A-E (See VSU Core Curriculum) [1]		
Environmental Geosciences majors are required to take MATH 1113 in Area A and MATH 2261 in Area D2. Geology Track majors are advised to take 3 hours of a Foreign Language in Area C. They are advised to take CHEM 1211/CHEM 1211L and CHEM 1212/CHEM 1212L in Area D2 and advised to take GEOG 1100 in Area E.		
Core Curriculum Area F – Geology Track [3,4]		
GEOL 1121K	Principles of Physical Geology	
GEOL 1122K	Principles of Historical Geology	
GEOG 2010	Tools of Environmental Geoscience	
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Laboratory I (if not taken in Area D2)	
CHEM 1212 & 1212L	Principles of Chemistry II and Principles of Chemistry Laboratory II (if not taken in Area D2)	
MATH 2261	Analytic Geometry and Calculus I (1 hour left over from Area D)	
MATH 1401	Elementary Statistics	
PHYS 1111K	Introductory Physics I (the 4th hour will count in Other Supporting Courses in the Senior Curriculum)	
Senior College Curriculum–Geology Track		**60**
Required Departmental Courses		
GEOL 3101	Mineralogy	3
GEOL 3102	Petrology	3
GEOL 3200	History of Life	3
GEOL 3410	Structural Geology	4
GEOL 3500	Principles of Geochemistry	3
GEOL 4110	Principles of Sedimentation and Stratigraphy	4
GEOL 4860	Geosciences Senior Seminar	1
GEOL 4861	Senior Thesis	3
GEOL 4862	Thesis Presentation	2
Upper-level Electives in a Single Discipline outside of GEOL		6

Additional Geoscience Electives above 3000		6
Other Supporting Courses		
GEOG 1113K	Introduction to Land Forms (if not taken in Area D.2)	0-4
GEOG 2011	Introduction to Geographic Information Science	3
MATH 2262	Analytic Geometry and Calculus II	4
Foreign Language (3 hours may be taken in Area C)		3-6
Other Guided Electives (includes hours which carry over from Area F)		4-11
Total hours required for the degree		**120**

3

All core classes with prefixes GEOG and GEOL must be completed with a grade of “C” or better.

4

Hours in excess of 18 will carry over to the senior curriculum.

Requirements for the Bachelor of Science Degree with a Major in Environmental Geosciences—Environmental Sustainability Track

Code	Title	Hours
Core Curriculum		**60**
Core Curriculum Areas A-E (See VSU Core Curriculum)		42
Environmental Geosciences majors are required to take MATH 1113 in Area A and MATH 2261 in Area D2. Environmental Geosciences majors are advised to take 3 hours of a Foreign Language in Area C. They are advised to take BIOL 1107K and CHEM 1211 in Area D2 and advised to take GEOG 1100 in Area E.		
Core Curriculum Area F--Environmental Sustainability Track [1, 2]		
GEOG 1112K	Introduction to Weather and Climate	4
GEOG 1113K	Introduction to Land Forms	4
GEOG 2010	Tools of Environmental Geoscience	3
BIOL 1107 & 1107L	Principles of Biology I and Principles of Biology Laboratory I (if not taken in Area D2)	3
CHEM 1211 & 1211L	Principles of Chemistry I and Principles of Chemistry Laboratory I (if not taken in Area D2)	3
ECON 1500	Survey of Economics (if not taken in Area E)	3
MATH 1401	Elementary Statistics	3
MATH 2262	Analytic Geometry and Calculus II (1 hour left over from Area D)	1
Senior College Curriculum--Environmental Sustainability Track		**60**
Required Upper-Level Courses		27
GEOG 3020	Global Climate Change	3
GEOL 3010	Environmental Geology	3
GEOG 3100	Regional Planning and Environmental Management	3
GEOG 3510	Urban Community Planning	3
GEOG 3052	Advanced Geographic Information Systems	3
GEOG 4900	Special Topics in Geography (Human Environmental Impact Analysis)	3
GEOG 4900	Special Topics in Geography (Natural Resource Sustainability and Conservation)	3
GEOG 4860	Geosciences Senior Seminar	1
GEOG 4861	Senior Thesis	3
GEOG 4862	Thesis Presentation	2
Upper Level Electives		12
Must complete at least one class from each category:		
Environmental Analysis		
GEOG 3050	Computer Cartography and Image Analysis	
GEOG 3053	Application Issues in Geographic Information Systems	
GEOG 4710	Statistics for Geoscientists	
Earth's Natural Systems		
BIOL 3810	Introduction to Biogeography	

CHEM 3320	Environmental Chemistry	
GEOG 3150	Meteorology and Climatology	
GEOG 3210	Introduction to Hydrology	
GEOG 3710	Environmental Soil Science	
GEOG 3330	Geology, Hydrogeology, and Environmental Issues in Georgia	
Human Systems		
ECON 3800	Environmental Economics	
GEOG 3410	Cultural Geography	
PHIL 3640	Environmental Philosophy	
PHIL 3180	Ethics and the Environment	
POLS 4450	Comparative Environmental Politics and Policy	
POLS 4820	Special Topics in U.S. Government and Politics (Environmental Law)	
Other Supporting Courses		21
GEOG 1125	Resources, Society, and Environment	3
GEOG 2011	Introduction to Geographic Information Science	3
Modern Foreign Language (3 hours may be taken in Area C)		3-6
Other Guided Electives (includes hours which carry over from Area F)		9-12
Total hours required for the degree		**120**

1

All core classes with prefixes GEOG or GEOL must be completed with a grade of "C" or better.

2

Hours in excess of 18 will carry over to the senior curriculum.