

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. 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 – 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 |

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|--|---|------------|
| 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 | Senior Thesis I | 1 |
| GEOG 4861 | Senior Thesis II | 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. They 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 – 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 | Senior Thesis I | 1 |
| GEOL 4861 | Senior Thesis II | 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 |

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|---|--|------------|
| 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) ⁵ | | 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.

⁵ Students wishing to concentrate in Biology are advised to take BIOL 3300 or any taxonomy course.

Students wishing to concentrate in Chemistry are advised to take CHEM 1212, CHEM 1212L, CHEM 3401, and CHEM 2310.