Geography and Environmental Resources

Geography and Environmental Resources is the study of place and space; the intersection of the physical environment and human activities; patterns of climate, land forms, soils and water. Majors earning a Bachelor of Science degree in Geography and Environmental Resources study the environment in the field, the computer laboratory, and the traditional classroom. Job opportunities for our degree are broad and diverse. Graduates of our program have careers that include: Sustainability Coordinator, GIS Coordinator, Geospatial Intelligence Analyst, Environmental Educator, Cartographer, Emergency Manager, Natural Resource Consultant, Regional Planner, Water Quality Manager, among others.

SIU Carbondale's programs in Geography and Environmental Resources focuses on environmental geography. Faculty expertise is in water resources, land use, climate science, and geospatial techniques. Our courses are taught by faculty with excellent national and international reputations in their fields. We take an integrated environmental problem-solving approach in our courses. Our Environmental GIS Laboratory provides our students with current GIS and remote sensing technologies for environmental analysis. Many courses have labs to provide students with more personal attention. We also have an active mentoring program, through which every undergraduate has access to a faculty member and hands-on learning experiences.

Our undergraduate program is divided into two parts: Major Courses and Specialization. First, there are seven courses taken by all Geography and Environmental Resources majors to ensure that all of our students have an understanding of key concepts and tools used by professionals in the field. Then, students select one of two areas of specialization: 1) Environmental Geography and Sustainability is intended for students who want a broad background in the social and environmental sciences that relates to applied environmental management, or 2) Geographic Information Science is intended for students who are interested in applying geospatial technologies to geographic and environmental problems.

Practical experience is an important part of our program. We have an active internship program that places students with local natural resource agencies. Students receive academic credit for these internship and cooperative work experiences. Our program provides several awards and scholarships for outstanding undergraduate majors. We welcome all students and invite them to participate in program activities. We have a diverse faculty and we actively promote diversity among our faculty, staff, and students.

GENV students need a solid mathematics background to prepare them for advanced-level courses. We strongly recommend that GENV majors fulfill the University Core Curriculum requirement by taking MATH 108, College Algebra.

Bachelor of Science (B.S.) in Geography and Environmental Resources Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Geography and Environmental Resources	42
Geography and Environmental Resources Major Courses GEOG 300I, GEOG 303I, GEOG 401, GEOG 433, and GEOG 404 or GEOG 412	15
Two of the following: GEOG 100, GEOG 103, GEOG 104, GEOG 304, GEOG 310I, GEOG 320, or GEOG 330	6
Specialization (one of the following):	21

Degree Requirements		Credit Hours
	Environmental Geography and Sustainability Specialization: GEOG 320, GEOG 330, GEOG 424, GEOG 436, and GEOG 470; and two additional GEOG classes at the 400-level	or
	Geographic Information Science (GIS) Specialization: GEOG 406, GEOG 408, GEOG 416, GEOG 420 and three additional GEOG classes at the 400-level	
Electives		39
Total		120

Geography and Environmental Resources Minor

A minor in geography and environmental resources consists of 15 credit-hours from a combination of the core courses and any one of the specializations.

GIS Minor

The Undergraduate GIS Minor enables students to focus on the fundamentals of geospatial techniques and analytical skills. This minor meets the needs of the expanding job opportunities for undergraduate students. This minor ensures that students understand earth-map relationships; understand principles of cartography; know the technical aspects of remote sensing and have competence in visual interpretation and digital processing and analysis of imagery; understand the basic representation and modeling of spatial data in GIS. Further, they will demonstrate an understanding of GIS concepts, database management, and the process of decision-making in the GIS context and obtain yield basic skills of spatial analysis and modeling and the analytical capabilities of ESRI's ArcGIS and ERDAS IMAGINE. Finally, they will be competent in planning, developing, and implementing a major GIS project.

Course Requirement: The program requires students to complete 15 credit hours of undergraduate level coursework, selected from the following list: GEOG 310I, GEOG 401, GEOG 404, GEOG 406, GEOG 408, GEOG 416, GEOG 417, GEOG 420, GEOG 428, and GEOG 458.

Sustainability Minor

The Undergraduate Minor in Sustainability enables students to expand their knowledge and understanding of the long-term sustainability of the earth's resources, including water, land use and food systems, climate change, urban sustainability, and "green" energy. This minor meets the needs of the expanding job opportunities in environmental sustainability.

Course Requirement: Students must maintain a 2.7 GPA in the certification courses. The program requires students to complete at least 15 credit hours of coursework, as follows: GEOG 300I, GEOG 320, and GEOG 424, and two of the following: GEOG 421, GEOG 422, GEOG 426, GEOG 429, GEOG 431, GEOG 435, GEOG 436, GEOG 439, GEOG 454, GEOG 480, GEOG 481.

Geography and Environmental Resources Honors Program

The Geography and Environmental Resources Honors Program is a program within the major that is designed to recognize the outstanding scholarship of our top students and reward them with additional challenging and stimulating course options. Participation in the GENV Honors Program is contingent

upon a student's admission to the University Honors Program (UHP). The UHP requirements are found at: honors.siu.edu. Honors students in our major should meet with the program director to discuss their interests and determine their course schedules.

Honors courses in Geography and Environmental Resources are: open to GENV majors; have prerequisites as listed by course number in the next section below; and have special assignments as arranged with each instructor.

Technology Fee

The College of Agricultural, Life, and Physical Sciences assesses undergraduate majors a technology fee of $4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semester.

Last updated: 02/01/2023