



at
Montana State University

GIS / PLANNING

Option

What is the GIS/Planning option in Earth Sciences?

The GIS/Planning Option offers students a liberal university education with a focused, career-oriented background in both Geographic Information Systems/Science and Planning. It also provides a more general emphasis in Geography. Geography offers a unique perspective that emphasizes 1) the importance of place and space in understanding the human and physical world and 2) the intricate interactions that link people with their environment. More detailed training in cartography, aerial photography, remote sensing, and GIS-related skills and techniques is designed to prepare students for related career tracks. This is combined with planning-related coursework, both inside and outside of the Department. With these strengths, the GIS/Planning option in Earth Sciences is ideally suited to meet the complex, interdisciplinary demands of the twenty-first-century world. The Option also allows for flexibility in selecting upper division coursework best tailored to meet the needs of individual students.

What courses would I take in the GIS/Planning curriculum?

The GIS/Planning Option introduces students to lower division coursework in world regional, physical, and human geography. These courses emphasize the importance of basic spatial relationships, the global distributions of physical and cultural phenomena, the complex interplay between natural and human systems, and the factors involved in the evolution of the earth's varied landscapes. Basic courses in statistics, cartography, economics, and political science offer additional tools that are useful to every geographer and potential planner. Upper division coursework includes a variety of more specialized offerings in GIS- and Planning-related topics such as GIS and Spatial Analysis, Aerial Photo Interpretation, Advanced GIS and Spatial Analysis, Geographical Planning, and Tourism and Recreational Planning. Students also are required to take several upper division electives outside of the Department in fields such as Biology, Political Science, and Land Resources. A Capstone course is required in the student's senior year and offers an overview of the discipline of Geography and opportunities to complete more advanced research.

What opportunities for Fieldwork and Internships are there in GIS/Planning?

A variety of fieldwork opportunities are available in the Option, taking advantage of the great regional laboratory in the northern Rocky Mountains. Several upper division courses include extensive fieldwork exercises. Classes such as Geomorphology and Mountain Geography expose students to the varied natural and human environments of the region. In addition, juniors and seniors are strongly encouraged to take advantage of internship opportunities that allow them to work in local and regional settings that include GIS- and planning-related experience. The Department enjoys excellent relationships with many potential employers.

How does the GIS/Planning option prepare me for more advanced training and employment?

A B.S. Degree in Earth Sciences with an Option in GIS/Planning offers students outstanding employment and educational opportunities. In fact, many of our graduates hold professional jobs in geography, planning, and GIS-related positions within Montana and the region while others have successfully relocated elsewhere after graduation. Majors find professional jobs in urban and land use planning, locational analysis in both the public and private sector, area studies analysis, natural resources and environmental management, as well as skills-oriented positions in cartography, remote sensing, and GIS. The Option specifically targets a set of skills and background coursework designed to appeal to potential employers in these fields. Broad training in Geography also offers excellent preparation for more advanced education in environmental law, international business, resource planning, and other more specialized graduate school opportunities.

What are the requirements for the M.S. Degree in Earth Sciences (Geography option) and what career opportunities might it offer?

More advanced training is offered by the master's program in Earth Sciences (Geography option). The M.S. degree is a two-year program that produces broadly-trained professional earth scientists. A limited number of teaching and research assistantships are available to qualified graduate students in the program. The required thesis involves the student in an independent research and writing project. Specialized graduate-level coursework builds upon an undergraduate background in Geography. Students lacking a bachelor's degree in Geography may make up their deficiencies before or during their graduate program of study. A minimum of 30 graduate-level credits (including at least 10 thesis credits) is required for the M.S. degree, including several 500-level courses and seminars as selected by the student and their major adviser. Classes in Research Design (ESCI 500-1-credit) and Geographical Thought (GEOG 405-3 credits) are also required. All students will take an oral comprehensive exam in two selected subject areas in geography and present a public defense of their thesis project.

A graduate degree in Earth Sciences opens up many career options. More specialized training and experience gained in completing thesis projects prepares students for professional-grade positions in planning, resource management, environmental assessment, locational analysis, and GIS-related fields. Opportunities to continue at the Ph.D. level also offer opportunities in university-based teaching and research. Many graduates successfully utilize their thesis-related research directly in training for subsequent career opportunities. Many department graduates have successfully found professional positions in the northern Rockies while others have readily transferred their skills to settings outside the region.

For more information, visit our website!

Department of Earth Sciences website: www.montana.edu/wwwes