Earth Sciences

The department offers a Bachelor of Science in Earth Sciences degree which may be earned in any one of five options (Geography, Geographic Information Science/Planning, Geology, Paleontology, and Snow science). Each option tabulated below requires courses from within the Department of Earth Sciences and courses outside the department. Some of the courses fulfill both departmental requirements and University Core Curriculum requirements. Academic minors are offered in Spatial Analysis/GIS, Water Resources, Undergraduate Scholars Program, and Earth Science Teaching (for the Ph.D. Program in Ecology and Environmental Science/Planning, Geology, Paleontology, and Snow Science). The TEPP form is available at www.montana.edu/fieldplacement/TEPPForms/TEPPMinors2010-12.pdf.

The department also offers a Master of Science Degree and Doctor of Philosophy in Earth Sciences. Thesis and course work for these graduate degrees usually emphasize some aspect of geology, geography, or geobiology with specific course and research plans approved by a graduate committee. The department collaborates with the interdisciplinary Master of Science in Land Rehabilitation, the Ph.D. Program in Ecology and Environmental Science.

Undergraduate Research Participation

Research opportunities are available to undergraduate students who demonstrate the interest and ability. Senior-level students may enroll in ERTH 490R (Undergraduate Research), which provides the opportunity to participate in a research project under the guidance of a faculty member. Successful completion of ERTH 490R credits requires that the student write a senior thesis report and orally present and defend the results in a public forum, such as an annual conference of a professional society. Collaborative opportunities exist with the university’s Undergraduate Scholars Program.

Degree Offered

Earth Sciences offers M.S. and Ph.D. degrees in Earth Sciences (Geography, Geology, and Geobiology content areas). We stress independent thesis research with some supporting course work. Our expertise spans most of the subfields of Earth Sciences. Our Geography faculty includes specialties including historical and cultural geography, settlement geography, resource geography, economic geography, planning, and GIS applications. Our Geology and Geobiology faculty include composition and structure of the crust, quantitative geomorphology, sedimentation and stratigraphy. Our Geobiology faculty have research interests in vertebrate paleontology, paleoecology, biogeography, palaeoclimatology, and geomicrobiology. Our program strengths are in basin analysis and energy resources, dinosaur paleontology, geography of the northern Rocky Mountains, architecture and composition of the lithosphere, snow science and cryospheric processes, and climate change.

Undergraduate Minors

- Earth Science Teaching (http://catalog.montana.edu/undergraduate/education-health-human-development/department-education/teaching-minors/earth-science-minor/)
- GIS Minor (Non-Teaching) (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/geographic-information-science-gis-minor-nonteaching/)
- Water Resources Minor (Non-Teaching) (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/water-resources-minor-nonteaching/)

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Undergraduate Programs

- Geography Option (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/geography-option/)
- Geology Option (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/geology-option/)
- GIS/Planning Option (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/gisplanning-option/)
- Paleontology Option (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/paleontology-option/)
- Snow Science Option (http://catalog.montana.edu/undergraduate/letters-science/earth-sciences/snow-science-option/)