

## 3290.20 Bachelor of Science in Geosciences

Students earning the B.S. degree in Geosciences must choose one of four concentrations: Geology, Environmental Geosciences, Geography, or Urban Studies. Many career opportunities allow for practical application of geosciences in industry, consulting firms, non-governmental organizations, and governmental agencies at all levels. Practical and essential applications of geology and geography include development and stewardship of water resources, both surface and subsurface; land-use planning for urban, suburban, and rural development; exploration for and development of mineral and energy resources including petroleum and other fossil fuels; and development of environmentally sound strategies for hazardous waste disposal and treatment. The curriculum leading to the B.S. degree in geosciences is excellent preparation for graduate work in geology and environmental science, geography, and urban studies. For students who are interested in geoscience and environmental science but who intend to pursue graduate or advanced study in other fields, for example environmental law or business, the B.S. degree may still be an appropriate choice. The B.S. degree meets certain federal criteria required for science-track career pathways in federal agencies such as the EPA, USGS, and others.

The concentrations in Geography and Geology are the most traditional of the programs, and they are designed to prepare the student for graduate studies or employment in a wide variety of geoscience areas. Students considering employment and state licensure as a Professional Geologist (required for supervisory environmental consultants) and other careers founded in geology should select the traditional Geology concentration. The Environmental Geosciences concentration offers a more interdisciplinary set of courses that emphasize the study of the delicate environmental balances of the natural world. The Geography concentration allows for a suite of skills to be gained in studying the world around us from both physical and human perspectives. The Urban Studies Concentration is focused on geoscience topics applicable to the study of urban settings. Specific requirements for the concentrations are shown below.

For all of the concentrations, students may find tremendous benefit in pursuing undergraduate certificates in Geographic Information Systems (GIS), water science, and/or sustainability. These certificates, described in more detail below, complement the different concentrations and provide students with an opportunity to explore in more depth the skills and knowledge needed to obtain employment and/or further their academic studies.

Majors should be aware that there are prerequisites for several courses in our department (especially in the Geology concentration). In addition, most of our courses are offered only once a year (and several specialty courses only every other year). Note that classes in the Department of Geosciences are listed under either Geology or Geography in the course catalog. Additional course options may be available by working directly with a faculty member such as through offerings of Topics ([GEOG 4097/GEOL 4097](#)) or Independent Research ([GEOG 4098/GEOL 4098](#)).

To prepare for the most appropriate path leading up to graduation, it is important to choose a concentration upon declaring the major based on career aspirations (e.g., a geology concentration may still be recommended for certain environmental work). Students are encouraged to seek advisement early on to ensure that programs of study accord with their specific career goals and needs and that they plan ahead by reviewing the schedule of projected courses on the department website. The department encourages our students and prospective majors to attend the weekly seminar series (and/or enroll in the affiliated one credit hour course [GEOL 4095/GEOG 4095](#)) to learn more about the range of opportunities in the discipline both at the university and after graduation. All students are required to complete an entry level class early on in the major [GEOL 3000/GEOG 3000](#), an internship or other course that includes experiential learning (field-, lab-, or research-based work), and a senior capstone [GEOL 4830/GEOG 4830](#) to help prepare them for their career goals in geosciences after graduation.