Geology

Graduate Faculty

Dr. Miriam Rios-Sanchez

Geology Courses

GEOL 5120 Soils (4 credits)
Introduction to principles of soil genesis, classification, physical and chemical properties, and biological significance. Lecture and laboratory. Prerequisites: (BIOL 1211 or BIOL 1120) and (GEOL 1110 or BIOL 1212) or consent of instructor. May not be offered every year.

GEOL 5211 Environmental Hydrology (3 credits)
The course provides a basic understanding of the principles and processes governing the movement of water through the hydrologic cycle, including atmospheric moisture flow, surface runoff, infiltration, and groundwater flow. Environmentally relevant applications based on case studies will be studied. The course include coverage of contemporary global issues related to water resources, sustainable development, and climate change.

GEOL 5212 Hydrogeology (3 credits)
Groundwater flow to wells, aquifer test analysis, groundwater exploration techniques, application of computer models in groundwater studies, hydrogeologic field methods, contaminant hydrogeology, vadoze zone hydrology. Lecture and laboratory. Prerequisite: GEOL 5211.

GEOL 5300 Global Environmental Change (3 credits)
This class offers an interdisciplinary introduction to the principles of climate, ecosystems, and biogeochemistry needed to understand human impacts on the natural environment. We will also discuss global change prediction and the scientific bases for global change assessments and policy measures. Key topics are the physical climate system and its variability, the carbon cycle and related biogeochemistry and ecosystem processes, land use issues, the interactions among climate, ecosystems, and biogeochemistry, and the impact of global change on societally relevant parameters. Common threads in all of these topics will pervade the whole semester; these include the use of observations and models, the consideration of multiple scales of change (temporal and spatial), the interaction of human behaviors and choices with natural systems, and the linkages among aspects of global change science (may not be offered every year). Prerequisites: Consent of Instructor

GEOL 5400 Glacial and Pleistocene Geology (3 credits)
Modern concepts of glaciology and glacial geology. Interpretation of the phenomena and effects on the landscape. Lecture and laboratory.

GEOL 5500 Topics in Paleontology (3 credits)
Introduction to major groups of organisms that are commonly preserved as fossils. Focus of class may vary between offerings; including invertebrate and vertebrate paleontology, introductory micropaleontology, palynology, and pollen analysis. May be repeated as topics change. Lecture and laboratory.

GEOL 5600 Stratigraphy and Sedimentation (3 credits)
Study of sedimentary rocks. Recognition of the physical and biological factors affecting deposition. Introduction to stratigraphic principles. Lecture and laboratory.

GEOL 5700 Environmental Geophysics (3 credits)
Introduction to geophysical processes and geophysical field methods commonly used in environmental evaluation. Interdisciplinary approach to an understanding of the physical environment. Lecture and laboratory.

All-University Courses

The course numbers listed below, not always included in the semester class schedule, may be registered for by consent of the advisor, instructor, or department chair, or may be assigned by the department when warranted. Individual registration requires previous arrangement by the student and the completion of any required form or planning outline as well as any prerequisites.

1910, 2910, 3910, 4910 DIRECTED INDEPENDENT STUDY
1920, 2920, 3920, 4920 DIRECTED GROUP STUDY
1930, 2930, 3930, 4930 EXPERIMENTAL COURSE
1940, 2940, 3940, 4940 IN-SERVICE COURSE
1950, 2950, 3950, 4950 WORKSHOP, INSTITUTE, TOUR
1960, 2960, 3960, 4960 SPECIAL PURPOSE INSTRUCTION
1970, 2970, 3970, 4970 INTERNSHIP
1980, 2980, 3980, 4980 RESEARCH
1990, 2990, 3990, 4990 THESIS