

Geology / 27

110 General Geology (3 hours)

A study of the minerals, surface features, geologic processes and history of the earth. Three lectures and one two-hour laboratory. Recommended to fulfill General Education requirement. Geol 27- 110/111 must be taken concurrently. (F, S, SS)

111 General Geology Laboratory (1 hour)

(F, S, SS)

114 General Earth Science (3 hours)

A general introductory survey of the earth sciences of physical geography, geology, oceanography, climatology and meteorology. Student must coregister for Geol 27-115. (F, S, SS)

115 General Earth Science Laboratory (1 hour)

(F, S, SS)

212 Historical Geology (4 hours)

A study of the geological history of the earth including the geological time scale, rock units and fossil records. Three lectures and one two-hour laboratory. Prerequisite: Geol 27-110/111 or 114/115. (S)

214 Gemology (3 hours)

An introduction to gemology including description, identification, grading of gems and their substitutes. (alt. trimesters, alt. years)

220 Mineralogy (3 hours)

A survey of physical mineralogy, identification of minerals, types of formation, and deposits of metallic ores, gemstones, industrial minerals and other economically useful minerals and rocks. Two lectures and one two-hour laboratory. Prerequisites: Geol 27-110/111 or 114/115 and Chem 24-112/113 or permission of instructor. (F)

305 Practicum in Teaching Laboratory (1 hour)

To assist faculty in beginning level laboratory situations in classes like Geol 27-111, 115, 213, 220 and for preparation for teaching positions in graduate school. Prerequisites: Successful completion of the course, permission of the laboratory instructor and department chairperson and a major or minor in geology or geography. (F, S, SS)

320 Geology Field Trip (2 hours)

Field trip to selected localities of geologic interest. Prerequisite: Geol 27-110/111 or 114/115 or permission of the instructor. (F)

326 Geology of the National Parks (3 hours)

A study of the geologic features of the 38 U.S. National Parks including consideration of their causes and changes. Prerequisite: Geol 27-110/111 or 114/115. (F)

335 Physical Oceanography (3 hours)

A study of the oceans including the physical properties of the oceans and marine geology. Prerequisite: Completion of general education science requirement. (F, alt. years)

340 Introduction to Hydrogeology (3 hours)

An introduction to the occurrence, movement, quality, contamination and management of groundwater. Prerequisites: Geol 27-110/111 or 114/115 and Math 17-118. (S)

360 Environmental Geology (4 hours)

The relation of geology to man and his environment, including the study of population, earth resources and natural phenomena. Three lectures and one two-hour laboratory. Prerequisite: Geol 27-110/111 or 114/115. (F)

415 Internship in Geology (1-6 hours)

As internships (paid and unpaid) become available, they will be offered. They require permission of the instructor, department chairperson and a written proposal at the time of registration. Student enrolls in the appropriate number of credit hours for the work load of the internship. As a guideline, 160 work hours are worth 3 credit hours. (F, S, SS)

420 Petrology (4 hours)

Hand specimen study of igneous, sedimentary and metamorphic rocks including identification, mineral compositions, fabrics, textures, occurrences, genesis and classifications. Three lectures and one two-hour laboratory per week. Prerequisite: Geol 27-220. (S)

423 Economic Geology (3 hours)

A survey of metallic and nonmetallic (petroleum, coal) mineral deposits. Prerequisite: Geol 27-220. (F, alt. years)

424 Geochemistry (3 hours)

Basic principles governing the origin, distribution and migration of elements in the earth. Prerequisite: Geol 27-110/111 or 114/115 and Geol 27-220 and Chem 24-112/113. (S, alt. years)

440 Stratigraphy (3 hours)

A study of the principles and concepts used to study the stratigraphic sequence of rocks, including sedimentary environments, biostratigraphy and time-stratigraphic correlation. Prerequisite: Geol 27-212. (F, alt. years)

450 Structural Geology (4 hours)

The study of the architecture of rock units of the crust of the earth insofar as it has resulted from deformation and the tectonic forces which produce them. Subject matter includes folds, faults, unconformities, rock fabric, geosynclines, continental drift and plate tectonics. Laboratory techniques utilize structure cross sections, projections, structure contour maps, geologic maps, isopach maps, strike and dip, stereo nets, construction techniques, etc. Three lectures and one two-hour laboratory per week. Prerequisites: Geol 27-212 and 420 and one mathematics course with trigonometry. (S)

455 Geologic Field Methods (3 hours)

Basic geological surveying techniques will be studied in the field. Notebook procedures and format will be stressed. Prerequisite: Geology major or minor with 20 hours in geology. (SS)

498 Senior Seminar (1 hour)

A capstone course in Geology. A student will examine current geologic research results and techniques, write a research paper, present the paper orally to a forum in the department or elsewhere, investigate employment opportunities, and assess his/her fundamental understanding of geology. Prerequisites: Senior standing as a Geology, Environmental Geology or Unified Science in Earth Science major, and a GPA of at least 2.0 in the major. (F)

500 Special Offerings (1-4 hours)

One-time course offering in a timely area of geology or earth science.

501 Special Topics in Geology (1-4 hours)

Will be offered according to student needs and interest. Each offering will be designed to incorporate the latest information pertaining to a timely topic in geology. Topics may include rock and mineral origins and classifications, groundwater, energy, age of dinosaurs, fossils and the history of life, volcanoes and earthquakes and glacial geology. Prerequisite: One year of college-level science or permission of instructor.

510 Geomorphology (3 hours)

A study of landforms, their description, recognition and classification. The origin and nature of geomorphological processes which form and continually modify landforms. The influence of rock type, climate and other factors. Two lectures and one two-hour laboratory. Prerequisite: Geol 27-110/111 or 114/115. (S, alt. years)

515 Environmental Regulations (2 hours)

An introduction to federal and state regulations and major issues associated with the environment including air quality, groundwater quality and the disposal of hazardous waste. Prerequisites: Geol 27-360 or Bio 04-420 or Geog 32-501 or permission of instructor. (S, alt. years)

520 Geology Field Trip (Advanced Level) (2 hours)

Field trip to selected localities of geologic interest. Prerequisites: Geol 27-212. (F)

530 Sedimentology (3 hours)

A study of the production, transportation, deposition and lithification of sediments. To include comparison of classifications, techniques of using sediments in environmental interpretations and laboratory techniques in sediment study. Two lectures and one two-hour laboratory. Prerequisite: Geol 27-212. (F, alt. years)

540 Paleontology (5 hours)

A general study of fossils including classification of plants and animals, development and evolution of prehistoric life, paleontological techniques and use of fossils as time and ecological guides. Lab includes study and identification of the major fossil groups. Emphasis is on

invertebrate animals, with a general review also of microfossils, plants and vertebrates. Three lectures and two two-hour laboratories. Prerequisite: Geol 27-212 or permission of instructor. (S)

555 X-Ray Analysis (3 hours)

Theory and application of x-ray diffraction. Consideration will be given to sample preparation, American Society Testing Materials data file, laboratory procedures and analysis of data.

Prerequisite: Geol 27-220 or permission of instructor. (S, alt. years)

560 Optical Mineralogy (3 hours)

A study of the optical properties of nonopaque minerals through the use of the petrographic (polarizing) microscope utilizing both oil immersion and thin section methods. Prerequisite: Geol 27-220. (F, alt. years)

590 Seminar in the Earth Sciences (2 hours)

Seminar and studies of advanced topics in selected fields in geology and other earth sciences.

Two hours per week in lecture, seminar or lab appropriate to the topics. Prerequisite: Geol 27-110/111.

599 Special Investigation in the Earth Sciences (1-3 hours)

Independent studies in the earth sciences including but not limited to research and library studies.

Enroll only with consent of department chairperson. Requires written proposal at time of registration. (F, S)