

GEOLOGY

(845) 257-3760

Master of Arts in Geology (205)

The Geology Department is not accepting applications to the MA program at this time.

GLG501. Economic Geology . 4 Credits.

Practical applications of geology. Origin and occurrence of metallic and non-metallic mineral resources such as oil, coal, and uranium and their importance in the world's economy as "one-crop" deposits. Conservation of such valuable natural resources as oil and water. Field trips.

Prerequisites:

- GLG 311 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG502. Advanced Geomorphology. 4 Credits.

Fluvial, glacial, volcanic, eolian, and solutional land forms and their interpretation. Relationships of climate, weathering, mass wasting, soil development, rock types, and ground water to landscape. Geologic and geomorphic interpretation of topographic maps.

Prerequisites:

- GLG 338 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG504. Geochemistry . 4 Credits.

Geochemical knowledge and methods of geochemical research. Geochemistry of the lithosphere. Distribution and mobility of the elements in the earth, their relative abundance, migration, and mode of occurrence, and the geochemical structure of the earth. Detailed study of the applications of the principles of physical chemistry to selected geochemical problems.

Prerequisites:

- GLG 314 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG505. Tectonics . 3 Credits.

Origin and characteristics of the major structures of the earth's crust. Emphasis on plate tectonic theory, including the geometry and kinematics of plate motions, and the structural evolution of mountain belts, rifts, transcurrent fault zones and other regions of crustal deformation.

Prerequisites:

- GLG 338 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG507. Introduction to Hydrogeology . 4 Credits.

Hydrologic cycle, occurrence and movement of ground water, aquifer analysis and ground water hydrology. Water quality and pollution measurement and abatement. Nature of water supplies, ground water exploration, and conservation of ground water.

Prerequisites:

- GLG 220 with a minimum grade of D- and PHY 201 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG509. Water Resources Management. 3 Credits.

Water use, problems of water supply, water resource management, water quality (present and potential pollution problems and solutions), and water conflicts around the world.

Restrictions:

- Must have the following level: Graduate

GLG519. Geophysics . 3 Credits.

Introduction to concepts of geophysics and methods used to study earth; its internal structure. Earth temperatures, seismic waves, gravity, isostasy, and magnetism. Phenomena such as earthquakes, continental drift, sea floor spreading, and mountain building considered.

Prerequisites:

- GLG 338 with a minimum grade of D- and MAT 252 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG533. Analysis of Soils and Sediments . 3 Credits.

Studies of soils, unconsolidated and consolidated sediments. Investigations: soil pH, bulk density, porosity, soil moisture, beneficiation of acid soils by limestone treatment, particle size distribution. Mineral analyses by chemical stains, microscopy, and X-ray powder diffraction.

Prerequisites:

- GLG 311 with a minimum grade of D- and GLG 331 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG535. Sedimentation . 4 Credits.

Analysis of the mode of origin of the sedimentary rocks. Principles of sedimentary processes. Relation between sedimentary processes and the sediments found in the continental, eolian, marginal marine, shallow marine, and deep marine environments. Pertinent papers in the literature discussed.

Prerequisites:

- GLG 311 with a minimum grade of D- or GLG 331 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG541. Geology and Geophysics of Petroleum . 4 Credits.

Origin of petroleum and its mode of occurrence in Earth and the stratigraphic and structural problems involved in the accumulation of petroleum. Principles used in geophysical exploration by the gravitational, magnetic, electric, seismic and radioactive methods.

Prerequisites:

- GLG 338 with a minimum grade of D- and PHY 202 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG543. Principles of Sedimentary Petrology . 3 Credits.

Petrology and classification of sedimentary rocks. Factors governing sediment dispersal, lithification and diagenesis. Mineralogy and texture of terrigenous clastic sediments as a reflection of possible source terrains. Carbonate petrology and petrography; consideration of limestone and dolostone textures as environmental indicators.

Prerequisites:

- GLG 331 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG545. Advanced Igneous and Metamorphic Petrology . 4 Credits.

Origin, classification, distribution and association of igneous and metamorphic rocks. Introduction to the use of microcomputers in petrology. Individual projects emphasizing advanced studies of rocks in thin section and/or computer analysis of petrogenesis.

Prerequisites:

- GLG 314 with a minimum grade of D- and CHE 202 with a minimum grade of D- and PHY 201 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG575. Geology for Teachers . 3 Credits.

Development of life on earth and geological processes that have shaped its surface: glaciation, erosion, mountain building; earth movements and volcanism. Study of minerals, rocks and a few common fossils. One or two field trips to inspect local geological features. Not open to students seeking a graduate degree in geology or earth science, or those who have taken GLG220 or equivalent.

Restrictions:

- Must have the following level: Graduate

GLG578. Geology of New York State . 3 Credits.

Principles, methods and knowledge from the science of geology pertinent to a study of the geologic history of the eastern United States. Emphasis on the development of New York State geology. Evolution of life as shown by the fossil record. Field trips. Not open to students seeking a graduate degree in geology or earth science.

Prerequisites:

- GLG 220 with a minimum grade of D- and GLG 575 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG581. Regional Geology (1-3) . 1-12 Credits.

Geology of selected areas of North America. Readings and discussions of the detailed tectonic and petrological evolution of selected classical geological areas. Field excursions to type areas. May be repeated for credit provided listed topic changes.

Restrictions:

- Must have the following level: Graduate

GLG583. Computer Applications in Geology . 3 Credits.

Use of computers in the geological sciences. Use of drafting, graphing, contouring, and other software. Basic theory of contouring, curve and surface fitting, least squares methods, data analysis, matrix manipulation, and equation solving.

Prerequisites:

- Math Placement Level with a score of 5 or MAT 181 with a minimum grade of D-

Restrictions:

- Must have the following level: Graduate

GLG585. Geology Seminar . 3 Credits.

An integrated consideration of some current problems selected from the various branches of geology. Critical reading and evaluation of primary source materials.

Restrictions:

- Must have the following level: Graduate

GLG590. Thesis in Geology (1-3) . 0 Credits.

Research, writing and defense of a thesis under the guidance of the major professor. Required form available in the Records and Registration Office. Required each semester after thesis research project is begun.

Restrictions:

- Must have the following level: Graduate

GLG593. Geological Selected Topics. 3-12 Credits.

Selected topics courses are regularly scheduled courses that focus on a particular topic of interest. Descriptions are printed in the Schedule of Classes each semester. Selected topics courses may be used as elective credit and may be repeated for credit, provided that the topic of the course changes.

Restrictions:

- Must have the following level: Graduate

GLG594. Fieldwork In Geology. 0 Credits.**Restrictions:**

- Must have the following level: Graduate

GLG595. Indep Study Geology. 1-12 Credits.**Restrictions:**

- Must have the following level: Graduate

GLG599. Comprehensive Exam Workshop. 0 Credits.

Non-credit workshop for students who wish to devote the semester immediately following the completion of their coursework to prepare for the comprehensive exam.

Restrictions:

- Must have the following level: Graduate
- Must have the following field(s) of study (major, minor or concentration): Geology (205)

GLG693. Geological Selected Topic. 3-12 Credits.

Restrictions:

- Must have the following level: Graduate

GLG795. Indep Study Geology. 0 Credits.

Restrictions:

- Must have the following level: Graduate

GLG799. Continued Registration. 1 Credit.

Restrictions:

- Must have the following level: Graduate