GEOL 1420. Historical Geology.
A continuation of physical geology leading to consideration of the
global history of the Earth (with special emphasis on North America),
the evolution of life, the continents through geologic time and the
principles and procedures used in the interpretation of earth history.
Prerequisite: GEOL 1410 with a grade of "C" or better.
4 Credit Hours. 3 Lecture Contact Hours. 2 Lab Contact Hours.
Course Attribute(s): Life & Phys Sciences Core 030|Lab Required
Grade Mode: Standard Letter
TCCN: GEOL 1404

GEOL 3430. Structural Geology.
This course examines the description, classification, and origin of
Earth structures and the stresses involved in their formation. Students
will explore solutions of structural geology problems using analytical
geometry, geologic maps, contouring of data, and preparation of cross
sections. Prerequisites: GEOL 1410, GEOL 1420; MATH 1317, MATH 2321,
or MATH 2471; all with a grade of "C" or better.
4 Credit Hours. 3 Lecture Contact Hours. 3 Lab Contact Hours.
Course Attribute(s): Lab Required
Grade Mode: Standard Letter

GEOL 3440. Paleontology and Biostratigraphy.
Identification of ancient invertebrate faunas and their applications in
reconstruction of paleoenvironments, paleogeography, and the means
by which "time" correlations can be effected in sedimentary strata. Field
intensive course, 1 full day in the field per week. Course will be offered
alternating summers. Prerequisites: GEOL 1410 and GEOL 1420 or
equivalents, all with a grade of "C" or better.
4 Credit Hours. 3 Lecture Contact Hours. 3 Lab Contact Hours.
Course Attribute(s): Lab Required
Grade Mode: Standard Letter

GEOL 3450. Earth Materials.
This course provides an introduction to crystal chemistry, physical
properties, and identification of major rock-forming minerals, sedimentary, igneous, and metamorphic rocks. It brings together wide-
ranging fundamental and key concepts in mineralogy and petrology
to understand rocks and minerals and how they relate to the broader
Earth, materials and environmental sciences. Prerequisite: GEOL 1410;
GEOL 1420; and MATH 1317 or MATH 2321 or MATH 2471 with grades of
"C" or better.
4 Credit Hours. 3 Lecture Contact Hours. 3 Lab Contact Hours.
Grade Mode: Standard Letter

GEOL 4121. Directed Study.
Independent study of a particular subject area in geology. Specific
topic to be discussed and agreed upon prior to registration. May be
repeated once with different emphasis and professor for additional credit.
Prerequisite: GEOL 1410 and GEOL 1420, all with a grade of "C" or better
and approval of the instructor.
1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing
Grade Mode: Standard Letter

GEOL 4230. Topics in Field Geology.
This course provides on-site directed investigations of geology in
locations remote from campus. Prerequisite: GEOL 1410 and GEOL 1420,
all with a grade of "C" or better.
3 Credit Hours. 1 Lecture Contact Hour. 6 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing|Writing Intensive
Grade Mode: Standard Letter

GEOL 4321. Directed Study.
This course is designed to provide a student with an opportunity to
conduct independent research for credit in consultation with his or her
Geology instructors. The course may be repeated once with a different
content or instructor. Prerequisite: GEOL 1410 and GEOL 1420, all with a
grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing
Grade Mode: Standard Letter

GEOL 4330A. Introduction to Petroleum Geology.
This course discusses the origin and distribution of conventional and
unconventional petroleum resources, source rocks, types of traps
and seals, reservoir rock properties, exploration methods (seismic
data analysis and interpretation, formation evaluation, subsurface
mapping), reservoir characterization and modeling, reserves calculations.
Prerequisite: GEOL 1410 and GEOL 1420, all with a grade of "C" or better.
Corequisite: GEOL 4121.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing|Topics
Grade Mode: Standard Letter

GEOL 4330B. Planetary Geology.
This course is a survey of the application of geologic principles to the
rocky planets and satellites in the solar system. Prerequisites: GEOL 1410
and GEOL 1420, all with a grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing|Topics
Grade Mode: Standard Letter
GEOL 4330C. Survey of Economic Mineral Deposits.
This is a survey of the geology of economic resource derived from the Earth including metals, nonmetals, energy related resources and ground water. Topics include genesis of economic deposits, methods of prospecting, methods of extraction, refining, and environmental impact. Prerequisite: GEOL 3450 with a minimum grade of "C" or better.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing|Topics
Grade Mode: Standard Letter

GEOL 4330D. Tectonics and Geology of the USA.
Study of the geology of the USA from the tectonic point of view. The different tectonic processes including continental extension and formation of an ocean, convergence and mountain building, volcanism and seismic activity will be studied and illustrated using mostly examples based on the geology of the USA. Prerequisite: GEOL 1410 and GEOL 1420 with a grade of "C" or higher.
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Exclude from 3-peat Processing|Topics
Grade Mode: Standard Letter

GEOL 4421. Hydrogeology.
This course will provide the student with an introduction to the science of hydrogeology, a conceptual and quantitative understanding of groundwater from a geological/mathematical/geochemical perspective, and experience with hydrogeology applications. Prerequisites: GEOL 1420 with a grade of "C" or better, and MATH 1317, or MATH 2321, or MATH 2417.
4 Credit Hours. 3 Lecture Contact Hours. 3 Lab Contact Hours.
Course Attribute(s): Lab Required|Writing Intensive
Grade Mode: Standard Letter

GEOL 5421. Hydrogeology.
This course will provide the student with an introduction to the science of hydrogeology, a basic conceptual understanding of groundwater from a geological/mathematical/geochemical perspective, and experience with hydrogeology applications. Prerequisites: graduate standing or permission of instructor.
4 Credit Hours. 3 Lecture Contact Hours. 3 Lab Contact Hours.
Course Attribute(s): Lab Required
Grade Mode: Standard Letter