Course:

GEOL 5101  Geology Seminar
1 Semester Credit Hour (1 Lecture Hour)
A seminar where students and instructors discuss current topics in geology.

GEOL 5308  Coastal Geoenvironments and Change
3 Semester Credit Hours (3 Lecture Hours)
A course focusing on the study of coastal environments and their changes.

GEOL 5321  Advanced Soil and Groundwater
3 Semester Credit Hours (3 Lecture Hours)
A course focusing on advanced techniques for assessing and managing soil and groundwater resources.

GEOL 5322  Advanced Geophysical Techniques Seminar
3 Semester Credit Hours (3 Lecture Hours)
A seminar focusing on advanced geophysical techniques.

GEOL 5336  Groundwater Geochemistry
3 Semester Credit Hours (3 Lecture Hours)
A course focusing on the geochemistry of groundwater.

GEOL 5437  Computer Applications and Modeling in Hydrogeology
4 Semester Credit Hours (4 Lecture Hours)
A course focusing on the use of computer applications in hydrogeology.

GEOL 5438  Mass Transport Modeling in Hydrogeology
4 Semester Credit Hours (4 Lecture Hours)
A course focusing on mass transport modeling in hydrogeology.

GEOL 5490  Advanced Topics
4 Semester Credit Hours (1-4 Lecture Hours, 1-4 Lab Hours)
A course focusing on advanced topics in geology.

GEOL 5596  Directed independent Study
1-5 Semester Credit Hours
A course focusing on directed independent study.

GEOL 6321  Advanced Soil and Groundwater Restoration
3 Semester Credit Hours (3 Lecture Hours)
A course focusing on advanced techniques for soil and groundwater restoration.

GEOL 6416  Advanced Geochemistry
4 Semester Credit Hours (4 Lecture Hours)
A course focusing on advanced topics in geochemistry.

GEOL 6422  Advanced Geophysics
4 Semester Credit Hours (3 Lecture Hours, 2 Lab Hours)
A course focusing on advanced techniques in geophysics.

GEOL 6423  Advanced Seismic Methods
4 Semester Credit Hours (3 Lecture Hours, 2 Lab Hours)
A course focusing on advanced seismic methods.

Prerequisites:
- GEOL 4411 and 4322
- GEOL 4444
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- SMTE 0094
- CHEM 1311 and 1111 and (CHEM 1312 or 1112) and MATH 2413 and GEOL 3414
- (GEOL 4421, PHYS 1401 or 2425) or (PHYS 1402 or 2426)
- GEOL 4322
- GEOLOGY (GEOL)
GEOL 6424  Advanced Environmental and Engineering Geophysics  
4 Semester Credit Hours (3 Lecture Hours, 2 Lab Hours)  
Advanced geophysical techniques for exploring the shallow subsurface  
for environmental and engineering purposes. Topics include seismic,  
resistivity, ground penetrating radar, electromagnetic, gravity, and  
magnetic methods. This course includes both lectures and labs (field  
exercises) components.  
Prerequisite: (PHYS 1401 or 2425) and (PHYS 1402 or 2426) and  
(MATH 2413).

GEOL 6436  Principles of Petroleum Geology  
4 Semester Credit Hours (3 Lecture Hours, 2 Lab Hours)  
Advanced concepts of petroleum geology and techniques used in the  
exploration and production of hydrocarbon systems. Lectures will cover  
principles of stratigraphy, sedimentology, hydrocarbon generation,  
hydrocarbon-trapping mechanisms, reservoir characterization, seismic  
interpretation, well-log interpretation, and geologic risk analysis.  
Prerequisite: GEOL 4411.

GEOL 6444  Advanced Hydrogeology  
4 Semester Credit Hours (3 Lecture Hours, 2 Lab Hours)  
Advanced study of hydrogeology concepts necessary to understand  
and question the hydrologic cycle, and specifically, surface water flow;  
groundwater flow; groundwater-surface water interaction; groundwater  
sources, occurrence, movement, contamination, and resources; and  
environmental topics of interest related to water resources.  
Prerequisite: CHEM 1311 and 1111 and (CHEM 1312 or 1112) and  
MATH 2413 and GEOL 3414.