PHD IN GEOLOGY AND GEOLOGICAL ENGINEERING

GEOLOGICAL ENGINEERING SPECIALIZATION

**Curriculum**

- A minimum of 72 credit hours is required beyond the B.S. degree.
- At least 36 of these credits must be for course work. Up to twenty-four (24) course credits and six (6) research credits from the M.S. degree can be applied toward the total required credits if the student’s committee agrees.
- It is recommended that six (6) to twelve (12) hours of course work be taken outside the department.

The student’s committee is responsible for assisting the student in developing a program of study that prepares the student for advanced work in his/her chosen specialty field.

**Required of all GEOE students:**

- GEOE 700 Research Methods (to be taken first fall semester of enrollment)
- GEOL 808 Fundamental Problems in Engineering and Science
- GEOL/GEOE course emphasizing field methods fulfilled by ___________
- GEOL/GEOE course emphasizing analytical methods fulfilled by ___________
- GEOL/GEOE course emphasizing computational methods fulfilled by ___________

**Groundwater and Environmental Focus:**

**Recommended:**

- GEOE 641 Geochemistry
- GEOE 663 Groundwater Geochemistry
- GEOE 664 Advanced Groundwater
- GEOE 682 Fluvial Processes
- GEOE 766 Digital Modeling of Groundwater
- GEOL 517 Geospatial Databases
- GEOL 519 Advanced Geospatial Analysis
- GEOL 633 Sedimentation
- CEE 519 Environmental Engineering Physical/Chemical Process Design
- CEE 521 Environmental Systems Analysis
- CEE 634 Surface Water Hydrology
- CEE 730 Statistical methods in Water Resources
- CEE 731 Topics in Water Quality Assessment

**Geomechanics Focus:**

**Recommended:**

- GEOE 566 Engineering and Environmental Geology
- GEOE 664 Advanced Groundwater
- GEOE 768 Engineering Geology of Surficial Deposits
- GEOE 633 Sedimentation
- CEE 643 Advanced Soil Mechanics I
- CEE 645 Advanced Foundations
- CEE 646 Stability of Soil and Rock Slopes
- CEE 647 Earth Retaining Structures
- MEM 525 Advanced Rock Mechanics
- MEM 533 Computer Applications in Geoscience Modeling
- MEM 550 Rock Slope Engineering

**Energy and Mineral Resources Focus:**

**Recommended:**

- GEOE 641 Geochemistry
- GEOE 663 Groundwater Geochemistry
- GEOL 576 Petroleum Geology
- GEOL 652 Problems in Ore Deposits
- GEOL 633 Sedimentation
- GEOL 650 Seminar in Ore Deposits
- CEE 627 Treatment, Disposal, and Management of Hazardous Waste
- CEE 784 Modeling and Comp. in Civil Engineering
- MEM 533 Comp Applications in Geoscience Modeling