

## 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:

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

#### Ground Water and Environmental Focus:

##### Recommended:

- \_\_\_ GEOE 641 Geochemistry
- \_\_\_ GEOE 663 Ground Water Geochemistry
- \_\_\_ GEOE 664 Advanced Ground Water
- \_\_\_ GEOE 682 Fluvial Processes
- \_\_\_ GEOE 766 Digital Modeling of Ground Water
- \_\_\_ 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 Ground Water

- \_\_\_ GEOE 768 Engineering Geology of Surficial Deposits

- \_\_\_ GEOL 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