MASTER OF SCIENCE IN GEOLOGY AND GEOLOGICAL ENGINEERING

GEOLOGICAL ENGINEERING SPECIALIZATION

**General Requirements:**
The student must complete the following minimum course credits:

<table>
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<tr>
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<th>Thesis Degree</th>
<th>Non-Thesis Option</th>
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<tr>
<td>Coursework (500 or above)**</td>
<td>24 credits</td>
<td>32 credits</td>
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<tr>
<td>GEOL/GEOE 798 MS Thesis (minimum)</td>
<td>6 credits</td>
<td>0 credits</td>
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<td>30 credits</td>
<td>32 credits</td>
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**With thesis committee approval, up to 6 credits may be 400-level courses.**

**M.S. Course Work Requirements for Geological Engineering Specialization**

The candidate’s committee is responsible for assisting the student in developing a program of study that prepares the student for his/her intended field.

**Course Requirements:**

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<tr>
<td>GEOL 700 Research Methods (to be taken first fall semester of enrollment)</td>
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<tr>
<td>GEOL/GEOE course emphasizing field methods fulfilled by __________</td>
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<tr>
<td>GEOL/GEOE course emphasizing analytical methods fulfilled by __________</td>
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<tr>
<td>GEOL/GEOE course emphasizing computational methods fulfilled by __________</td>
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Three focus areas are offered to M.S. candidates in the Geological Engineering Specialization. The recommended courses for each area are listed below.

**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
- GEOE 517 Geospatial Databases
- GEO 519 Advanced Geospatial Analysis
- GEOL 633 Sedimentation
- CEE 519 Environmental Eng Process Design
- CEE 521 Environmental Systems Analysis
- CEE 634 Surface Water Hydrology
- CEE 730 Statistical Methods Water Resources
- CEE 731 Topics in Water Quality Assessment

**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 Apps Geoscience Modeling

**Geomechanics Focus:**

**Recommended:**
- GEOE 566 Engineering and Env Geology
- GEOE 664 Advanced Ground Water
- GEOE 768 Eng 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 Comp. Apps Geoscience Modeling
- MEM 550 Rock Slope Engineering

Revision May 2020