MASTER OF SCIENCE IN GEOLOGY AND GEOLOGICAL ENGINEERING

GEOLOGICAL ENGINEERING SPECIALIZATION

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Thesis Degree</th>
<th>Non-Thesis Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>______</td>
<td>24 credits*</td>
<td>32 credits*</td>
</tr>
<tr>
<td>______</td>
<td>6 credits</td>
<td>0 credits</td>
</tr>
<tr>
<td>______</td>
<td>30 credits</td>
<td>32 credits</td>
</tr>
</tbody>
</table>

* No more than 15 credits may come from courses at the 500-level or below.
** With thesis committee approval, up to 6 credits may be out-of-department 300- or 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:

- GEOE 700 Research Methods (to be taken first fall semester of enrollment)
- GEOL/GEOE course emphasizing field methods fulfilled by ___________
- GEOL/GEOE course emphasizing analytical methods fulfilled by ___________
- GEOL/GEOE course emphasizing computational methods fulfilled by ___________

Three focus areas are offered to M.S. candidates in the Geological Engineering Specialization. The recommended courses for each area are listed below.

**Groundwater and Environmental Focus:**

- GEOE 641 Geochemistry
- GEOE 663 Groundwater Geochemistry
- GEOE 664 Advanced Groundwater
- GEOE 682 Fluvial Processes
- GEOE 766 Digital Modeling of Groundwater
- GEO 517 Geospatial Databases
- GEO 519 Advanced Geospatial Analysis
- GEO 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:**

- GEOE 641 Geochemistry
- GEOE 663 Groundwater Geochemistry
- GEO 576 Petroleum Geology
- GEO 652 Problems in Ore Deposits
- GEOE 633 Sedimentation
- GEOE 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:**

- GEOE 566 Engineering and Env Geology
- GEOE 664 Advanced Groundwater
- GEOE 768 Eng Geology of Surficial Deposits
- GEO 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 October 2015