NUCLEAR ENGINEERING, M.E.

The Graduate School has general requirements for M.E., M.S., and Ph.D. students that must be met by all degree candidates (including earning at least 30 credit hours beyond the bachelor's degree for master's degrees and at least 60 credit hours beyond the bachelor's degree for doctoral degrees). The Department of Mechanical Engineering has added requirements (some of which are described below) that must be met before students can complete their degrees. Consult the department for complete, current requirements.

Learning Outcomes

1. Students will demonstrate knowledge in the fundamental subject areas of nuclear engineering.

Degree Requirements (30 Hours)

A Nuclear Engineering M.E. student must complete 30 hours of graded graduate courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Core Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMCH 552</td>
<td>Introduction to Nuclear Engineering</td>
<td>3</td>
</tr>
<tr>
<td>EMCH 553</td>
<td>Nuclear Fuel Cycles</td>
<td>3</td>
</tr>
<tr>
<td>EMCH 757</td>
<td>Radiation Shielding</td>
<td>3</td>
</tr>
<tr>
<td>or EMCH 557</td>
<td>Introduction to Radiation Shielding and Sources</td>
<td></td>
</tr>
<tr>
<td>EMCH 758</td>
<td>Nuclear Reactor Systems</td>
<td>3</td>
</tr>
<tr>
<td>or EMCH 558</td>
<td>Introduction to Nuclear Reactor Systems</td>
<td></td>
</tr>
</tbody>
</table>

**Nuclear Engineering Electives** 12

Nuclear engineering electives must be approved by a student's advisor and include the following:

- EMCH 555 Instrumentation for Nuclear Engineering
- EMCH 550 Introduction to Nuclear Safeguards
- EMCH 573 Introduction to Nuclear Materials
- EMCH 753 Chemical Thermodynamic Calculations and Modeling with Applications
- EMCH 754 Thermal Hydraulic Design of Nuclear Reactors
- EMCH 755 Advanced Nuclear Engineering
- EMCH 756 Safety Analysis for Energy Systems
- EMCH 759 Waste Management in the Nuclear Industry
- EMCH 770 Predictive Modeling: Combining Experiments with Computations
- EMCH 772 Nuclear Materials
- EMCH 774 Radiation Damage

**Engineering Elective** 6

Engineering electives must be approved by a student's advisor and include the following:

- Any Nuclear Engineering Elective (from above)
- Any Engineering course at 500 level or higher
- Other courses as approved by the student’s advisor and graduate director

**Total Credit Hours** 30