Industrial and Systems Engineering, MSE

The ISEEM Department offers three plans leading to the Master of Science in Engineering degree. Each plan is designated as:

- Plan I (Thesis),
- Plan II (Non-thesis, coursework only)

For each plan, students may choose concentrations in Engineering Management, Industrial Engineering, or Systems Engineering. The following sections describe the requirements for each of these concentrations. Additional requirements, policies, and required forms may be found in the ISEEM Department office.

Program of Study: Engineering Management

The Basic Program of Study, common to the Plan I and Plan II MSE options, contains a minimum of 24 semester hours of graduate-level course work that must include:

**Engineering Major**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 660</td>
<td>ENGR MGMT THEORY</td>
<td>3</td>
</tr>
<tr>
<td>EM 666</td>
<td>ENGR PROJECT MANAGEMENT</td>
<td>3</td>
</tr>
<tr>
<td>EM 760</td>
<td>ENGR MGMT STRUCTURES &amp; SYSTEMS</td>
<td>3</td>
</tr>
<tr>
<td>EM 766</td>
<td>MANAGING CHG IN HIGH TECH ORG</td>
<td>3</td>
</tr>
</tbody>
</table>

**First Minor**

Select two of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM 661</td>
<td>STRATEGIC ENGR MGMT</td>
<td>3</td>
</tr>
<tr>
<td>EM 662</td>
<td>FOUND QUALITY SYSTEMS MGMT</td>
<td></td>
</tr>
<tr>
<td>EM 664</td>
<td>TEAMS IN ACTION</td>
<td>3</td>
</tr>
<tr>
<td>EM 679</td>
<td>SELECTED TOPICS IN ENGR MGMT</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Minor**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISE 690</td>
<td>STATISTICAL METHODS FOR ENGR</td>
<td>3</td>
</tr>
<tr>
<td>ISE 526</td>
<td>DESIGN/ANALY OF EXPERIMENT</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Semester Hours**  
24

**Plan I, Thesis Option**

Students selecting this option must:

Complete Basic Program of Study as described above  
24

**Master's Thesis**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISE 699</td>
<td>MASTER'S THESIS</td>
<td>6</td>
</tr>
</tbody>
</table>

Complete an acceptable thesis including a public defense  

**Total Semester Hours**  
30

**Plan II, Non-Thesis Option (Coursework Only)**

Students selecting this option must:

Complete Basic Program of Study as described above  
24

Select 6 semester hours of graduate courses to complete an approved extended program of study  
6


**Total Semester Hours**  
30

Program of Study: Industrial Engineering

The Basic Program of Study, common to the Plan I and Plan II MSE options, contains a minimum of 24 semester hours of graduate-level course work that must include:

**Engineering Major**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISE 623</td>
<td>ENGR ECON ANALYSIS</td>
<td>3</td>
</tr>
</tbody>
</table>
ISE 626  INTRO OPERATIONS RESEARCH  3
ISE 641  ADVANCED QUALITY CONTROL  3
ISE 726  SYSTEMS MODELING  3

**First Minor**
Select six hours in approved Engineering Management or Systems Engineering  6

**Second Minor**
ISE 526  DESIGN/ANALY OF EXPERIMENT  3
ISE 690  STATISTICAL METHODS FOR ENGR  3

**Total Semester Hours**  24

**Plan I, Thesis Option**
Students selecting this option must:

Complete Basic Program of Study as described above  24

**Master’s Thesis**
ISE 699  MASTER’S THESIS  6
Complete an acceptable thesis including a public defense

**Total Semester Hours**  30

**Plan II, Non-Thesis Option (Coursework Only)**
Students selecting this option must:

Complete Basic Program of Study as described above  24
Select 6 semester hours of graduate courses to complete an approved extended program of study  6

**Total Semester Hours**  30

**Program of Study: Systems Engineering**
The Basic Program of Study, common to the Plan I and Plan II MSE options, contains a minimum of 24 semester hours of graduate-level course work that must include:

**Engineering Major**
ISE 623  ENGR ECON ANALYSIS  3
ISE 627  ENGINEERING SYSTEMS  3
ISE 670  INTEGRATED PRODUCT & PROC DES  3
ISE 734  DECISION ANALYSIS  3

**First Minor**
Select six hours in approved Engineering Management, Quality Engineering, Systems Engineering, Industrial Engineering, Operations Research, Engineering Reliability or Human Factors courses  6

**Second Minor**
ISE 526  DESIGN/ANALY OF EXPERIMENT  3
ISE 690  STATISTICAL METHODS FOR ENGR  3

**Total Semester Hours**  24

**Plan I, Thesis Option**
Students selecting this option must:

Complete Basic Program of Study as described above  24

**Master’s Thesis**
ISE 699  MASTER’S THESIS  6
Complete an acceptable thesis including a public defense

**Total Semester Hours**  30
Plan II, Non-Thesis Option (Coursework Only)

Students selecting this option must:

<table>
<thead>
<tr>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Basic Program of Study as described above</td>
<td>24</td>
</tr>
<tr>
<td>Select 6 semester hours of graduate courses to complete an approved extended program of study</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Semester Hours</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>