# Master of Science in Engineering

**Degree Codes:** ES MSE ENGR  
**Concentration:** Chemical Engineering  
**Contact:** Dr. Daniela Mainardi

Overall requirements for the specific options are as follows:

## Requirements for all degree types

<table>
<thead>
<tr>
<th>Course Category</th>
<th>Number</th>
<th>Course Name</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGR 510</td>
<td></td>
<td>Introduction to Engineering and Science Research Methods</td>
<td>2</td>
</tr>
<tr>
<td>Engineering Mathematics: select one of the following two courses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGR 541</td>
<td></td>
<td>Advanced Mathematical Methods for Engineering and Physics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 592</td>
<td></td>
<td>Engineering Computational Methods</td>
<td>3</td>
</tr>
<tr>
<td><strong>Concentration Courses</strong>*</td>
<td>CMEN 504</td>
<td>Advanced Chemical Engineering Kinetics</td>
<td>3</td>
</tr>
<tr>
<td>CMEN 513</td>
<td></td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>CMEN 522</td>
<td></td>
<td>Advanced Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

## Thesis Option (in addition to the courses above)

<table>
<thead>
<tr>
<th>Course Category</th>
<th>Number</th>
<th>Course Name</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td>ENGR 511</td>
<td>Engineering and Science Research Proposal Development</td>
<td>1</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>Three courses (9 semester hours) approved by the student’s advisory committee</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Thesis</strong></td>
<td>CMEN 551</td>
<td>Research &amp; Thesis (6 SCH are required with at least 3 SCH taken in the quarter the thesis is reviewed and approved)</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>30</td>
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</tbody>
</table>

## Practicum Option (in addition to the courses above)

<table>
<thead>
<tr>
<th>Course Category</th>
<th>Number</th>
<th>Course Name</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td>ENGR 511</td>
<td>Engineering and Science Research Proposal Development</td>
<td>1</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>Six courses (18 semester hours) approved by the student’s advisory committee</td>
<td>18</td>
<td></td>
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<tr>
<td><strong>Practicum</strong></td>
<td>CMEN 555</td>
<td>Practicum</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

## Coursework Only Option (in addition to courses above)

<table>
<thead>
<tr>
<th>Course Category</th>
<th>Number</th>
<th>Course Name</th>
<th>SCH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td>ENGR 589A</td>
<td>Professional Development Seminar</td>
<td>1</td>
</tr>
<tr>
<td><strong>Electives</strong></td>
<td>Five courses (15 semester hours) approved by the student’s advisory committee</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>MATH/STAT</strong></td>
<td>One MATH and one [STAT course or INEN 514]</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

*The concentration courses for the concentration in Chemical Engineering.  
**The maximum number of variable credit Directed Study courses that can be applied towards the degree is 6 SCH.*
Plan of Study Important Information: When entering information in the plan of study, it is important to note that only core courses and all core courses need to be put in section 1.1, while all others are put in section 1.2 (i.e. special topics, seminar, and research courses). See http://coes.latech.edu/grad-programs/plan-of-study-instructions.pdf for plan of study instructions.

Updated 7/25/2017