MASTER OF BIOLOGICAL ENGINEERING

The objectives of this degree program are to prepare students for professional practice in any field of engineering involving biological processes and to provide a foundation in the fundamental knowledge of biological engineering. Candidates are required to take a total of 30 credit hours: nine credit hours of core courses, six credit hours of required biology courses, three credit hours of a required professional course, and 12 credit hours of electives.

**Curriculum**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHE 406</td>
<td>Transport Phenomena</td>
<td>3</td>
</tr>
<tr>
<td>CHE 503</td>
<td>Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>CHE 577</td>
<td>Bioprocess Engineering</td>
<td>3</td>
</tr>
<tr>
<td><strong>Biology Requirements</strong></td>
<td></td>
<td></td>
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<tr>
<td>BIOL 504</td>
<td>Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 515</td>
<td>Molecular Biology</td>
<td>3</td>
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<tr>
<td><strong>Professional Requirement</strong></td>
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<tr>
<td>CHE 506</td>
<td>Entrepreneurship &amp; IP Mgmt</td>
<td>3</td>
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<tr>
<td><strong>Electives</strong></td>
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<tr>
<td>Select 12 credit hours from the following:</td>
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<tr>
<td>BME 525</td>
<td>Introduction to Medical Device</td>
<td>3</td>
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<tr>
<td>BME 533</td>
<td>Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>CHE 545</td>
<td>Metabolic Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CHE 580</td>
<td>Biomaterials</td>
<td>3</td>
</tr>
<tr>
<td>CHE 583</td>
<td>Pharmaceutical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CHE 584</td>
<td>Tissue Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CHE 585</td>
<td>Drug Delivery</td>
<td>3</td>
</tr>
<tr>
<td>CHE 593</td>
<td>Seminar in Chemical Engrng</td>
<td>1</td>
</tr>
<tr>
<td>CHE 597</td>
<td>Special Problems</td>
<td>1-20</td>
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<tr>
<td>ENVE 513</td>
<td>Biotech Processes in ENVE</td>
<td>3</td>
</tr>
<tr>
<td>Select any 500-level Food Process Engineering course</td>
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<td></td>
</tr>
<tr>
<td>Other approved electives from CHE, CHEM, BME, BIOL</td>
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</tbody>
</table>

Total Credit Hours: 30