MS BIOMEDICAL ENGINEERING, SPECIALIZATION IN REGENERATIVE MEDICINE

Program Learning Objectives
1. Perform fundamental laboratory skills involved in regenerative medicine research & development.
2. Discuss and critically evaluate biomedical primary literature.
3. Effectively communicate technical topics to both peer and lay audiences.
4. Explain the process of biotechnology development & commercialization.
5. Describe how research & development efforts are motivated by and impact physician & patient experiences.
6. Design and execute independent research projects.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 520</td>
<td>Modeling of Biomedical Systems</td>
<td>4</td>
</tr>
<tr>
<td>or BMED 530</td>
<td>Biomaterials</td>
<td></td>
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<tr>
<td>BMED 505</td>
<td>Biomedical Signal Transduction and Data Acquisition</td>
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<tr>
<td>or BMED 515</td>
<td>Introduction to Biomedical Imaging</td>
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<tr>
<td>STAT 513</td>
<td>Applied Experimental Design and Regression Models</td>
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<tr>
<td>or IME 527</td>
<td>Design of Experiments</td>
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<tr>
<td>BMED 510</td>
<td>Principles of Tissue Engineering</td>
<td>4</td>
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<tr>
<td>BMED 560</td>
<td>Cell Transplantation and Biotherapeutics</td>
<td>2</td>
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<tr>
<td>BMED 561</td>
<td>Cell Transplantation and Biotherapeutics Laboratory</td>
<td>2</td>
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<tr>
<td>BIO/CHEM 475</td>
<td>Molecular Biology Laboratory</td>
<td>3-5</td>
</tr>
<tr>
<td>or ASCI 403</td>
<td>Applied Biotechnology in Animal Science</td>
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<tr>
<td>BIO 534</td>
<td>Principles of Stem Cell Biology</td>
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<tr>
<td>ASCI 581</td>
<td>Graduate Seminar in Animal Science</td>
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<tr>
<td>BIO 590</td>
<td>Seminar in Biology</td>
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<tr>
<td>BMED 563</td>
<td>Biomedical Engineering Graduate Seminar</td>
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<td>BIO 509</td>
<td>Communicating Biology to General Audiences</td>
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<tr>
<td>BIO/ASCI/BMED 583</td>
<td>Research Experience for Regenerative Medicine Students</td>
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<td>ASCI/BIO/BMED 593</td>
<td>Regenerative Medicine Internship</td>
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<tr>
<td>Approved Electives</td>
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<td>4</td>
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<tr>
<td><strong>Total units</strong></td>
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<td><strong>45</strong></td>
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</table>

1 The range of elective units reflects differences in the Molecular Techniques Course options (BIO 475, ASCI 403) and inclusion of BMED 500, such that the total required units for the program are 45.