BME M.S./M.Eng Program Curriculum

FALL Year 1
16:125:xxx BME Core Course (3cr)
16:125:xxx BME Core Course (3cr)*
16:125:xxx Bioengineering Elective (3cr)
16:125:501 Mathematical Modeling for BME (3cr)
16:125:601 Engineering Ethics/Seminar (1cr)
BME Seminars (attendance required)

SPRING Year 1
16:125:xxx BME Core Course (3cr)
16:125:xxx BME Core Course (3cr)*
16:125:xxx Bioengineering Elective (3cr)
16:125:586 Structure and Dynamics in Adult and Stem Cell Biology (3cr)
16:125:602 Engineering Writing/Seminar (1cr)
BME Seminars (attendance required)

FALL & SPRING Year 2
16:125:xxx Bioengineering Elective (3cr)
16:125:xxx Bioengineering Elective (3cr) (As Needed)
16:125:628 Clinical Practicum (1cr)
16:125:701/702 Research (3cr/3cr)
16:125:699 Non-Thesis Study (3cr) (M.Eng Only)
BME Seminars (attendance required)

BME Core Courses Must take 3 out of 5:
1) 16:125:561 BioImaging Methods (3cr)
2) 16:125:571 Biosignal Processing and Biomedical Imaging (3cr)
3) 16:125:572 Biocontrol, Modeling and Computation (3cr)
4) 16:125:573 Kinetics, Thermodynamics and Transport in Biomedicine (3cr)
5) 16:125:574 Biomechanics and Biomaterials (3cr)

Physiology
Students must have taken an UG level Physiology course previously or the following course must be taken.
1) 16:125:581 Mammalian Physiology (online course-3cr)
OR Other Rutgers or RWJMS Physiology Courses – Contact the Graduate Program for information

Advanced Engineering Mathematics^ 1) 16:125:501 Mathematical Modeling for BME (3cr)
^Students may be asked to complete an alternate graduate-level math course based on need or availability. Students wishing to take an alternate math class should petition the graduate program director.

Advanced Cell Biology
1) 16:125:586 Structure and Dynamics in Adult and Stem Cell Biology (3cr)
Or 16:148:514 Molecular Biology of Cells (3cr)
Or 16:115:511 Molecular Biology and Biochemistry (3cr)

Professional Developmental Courses Must take 1, 2 and 5...3&4 are optional
1) 16:125:601 Engineering Ethics and Seminar (1cr)
2) 16:125:602 Engineering Writing and Seminar (1cr)
3) 16:125:607 Preparing Future Faculty I (1cr)
4) 16:125:608 Preparing Future Faculty II (1cr)
5) 16:125:628 Clinical Practicum (1cr)

Summary of Minimum M.S./M.Eng Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3 out of 5 BME Core Courses</td>
<td>9 credits</td>
</tr>
<tr>
<td>Advanced Engineering Math Course</td>
<td>3 credits</td>
</tr>
<tr>
<td>Advanced Cell Biology Course</td>
<td>3 credits</td>
</tr>
<tr>
<td>3 Bioengineering Electives (4 if M.Eng)</td>
<td>9 credits</td>
</tr>
<tr>
<td>3 out of 5 Professional Developmental Courses</td>
<td>3 credits</td>
</tr>
<tr>
<td>Research (M.S. ONLY)</td>
<td>6 credits</td>
</tr>
<tr>
<td>Non-Thesis Study (M.Eng ONLY)</td>
<td>3 credits</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33 credits</strong></td>
</tr>
</tbody>
</table>

* If schedule allows, take up to two core classes per semester. Minimum of three core classes required.