## Biomedical Engineering – Program Map: Bioimaging Track

### Track Requisites

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME:5210</td>
<td>Medical Imaging Physics</td>
<td>F</td>
<td>P: BME:2200, BME:2210</td>
</tr>
<tr>
<td>ENGR:2730</td>
<td>Computers in Engineering</td>
<td>All</td>
<td>P: ENGR:1300</td>
</tr>
<tr>
<td>ECE:3330</td>
<td>Intro to Software Design</td>
<td>F</td>
<td>P: ENGR:2730</td>
</tr>
<tr>
<td>BME:5220</td>
<td>Digital Image Processing</td>
<td>F</td>
<td>P: BME:2200</td>
</tr>
</tbody>
</table>

### Track Electives

#### Engineering Topics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME:5200</td>
<td>Biomedical Signal Processing</td>
<td>F</td>
<td>P: BME:2200, or equivalent</td>
</tr>
<tr>
<td>ECE:5995</td>
<td>Contemporary Topics in Elect. and Computer Engin.: Multidimensional Image Analysis Tools &amp; Techniques</td>
<td>Every other Sp (even years)</td>
<td>P: ENGR:1300</td>
</tr>
<tr>
<td>BME:5251</td>
<td>Advanced Biosystems</td>
<td>Sp</td>
<td>P: BME:2200</td>
</tr>
<tr>
<td>ECE:5450</td>
<td>Pattern Recognition</td>
<td>Every other F</td>
<td>P: ECE:2400</td>
</tr>
</tbody>
</table>

#### Other Suggestions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH:3800</td>
<td>Numerical Analysis</td>
<td>F/Sp</td>
<td></td>
</tr>
<tr>
<td>CS:4480</td>
<td>Knowledge Discovery</td>
<td>F/Sp</td>
<td></td>
</tr>
<tr>
<td>ECE:5460</td>
<td>Digital Signal Processing</td>
<td>F</td>
<td>P: BME:2200</td>
</tr>
<tr>
<td>CS:2210</td>
<td>Discrete Structures</td>
<td>All</td>
<td>P: CS:1210, or equivalent (i.e., ENGR:1300)</td>
</tr>
<tr>
<td>CS:2230</td>
<td>Data Structures</td>
<td>All</td>
<td>P: ENGR:2730; C: CS:2210</td>
</tr>
</tbody>
</table>

#### Pre-Medicine

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL:1412</td>
<td>Diversity of Form &amp; Function</td>
<td>All</td>
<td>P: BIOL:1411, CHEM:1110</td>
</tr>
<tr>
<td>CHEM:2210</td>
<td>Organic Chemistry I</td>
<td>All</td>
<td>P: CHEM:1120</td>
</tr>
<tr>
<td>CHEM:2220</td>
<td>Organic Chemistry II</td>
<td>All</td>
<td>P: CHEM:2210</td>
</tr>
<tr>
<td>CHEM:2410</td>
<td>Organic Chemistry Lab</td>
<td>All</td>
<td>P: CHEM:1110, CHEM:1120, CHEM:2210</td>
</tr>
<tr>
<td>BIOC:3110</td>
<td>Biochemistry</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>BIOL:2512</td>
<td>Fundamental Genetics</td>
<td>All</td>
<td>P: BIOL:1411, BIOL:1412 or PSY:2701, CHEM:1120; C: CHEM:2210</td>
</tr>
</tbody>
</table>

**Note:** At least two electives must be from the list of Engineering Topics

Please check MyUI for the most up to date course offerings and pre/corequisites.
### Biomedical Engineering – Program Map: Bioimaging Track

#### Semester 1
- **Chem. I & Lab**
  - CHEM:1110
- **Math I**
  - MATH:1550
- **Eng. Prob. Solving**
  - ENGR:1100
- **Rhetoric**
  - RHET:1030
- **Engr Success First Year**
  - ENGR:1000

#### Semester 2
- **Chem. II & Lab**
  - CHEM:1120
- **Math II**
  - MATH:1560
- **Math III**
  - MATH:2550
- **Eng. Computing**
  - ENGR:1300
- **Physics I / Lab**
  - PHYS:1611
- **BME Forum**
  - BME:1010

#### Semester 3
- **Foundations of Biology**
  - BIOL:1411
- **Math IV**
  - MATH:2560
- **Statics**
  - ENGR:2110
- **Elec. Circuits**
  - ENGR:2120
- **Thermo**
  - ENGR:2130
- **BME Seminar**
  - BME:2010

#### Semester 4
- **Human Physiol.**
  - HHP:3500
- **Systems, Instrum. & Data Acquisition**
  - Lab BME:2200
- **Bioimaging & Bioinformatics / BME:2210**
- **CIE**
  - ENGR:2730
- **Biostatistics**
  - BIOS:4120 or STAT:3510
- **BME Seminar**
  - BME:2010

#### Semester 5
- **Cell Biology for Engr / Lab**
  - BME:2110
- **Bio- Materials / Mechanics & Lab**
  - BME:2500
- **Physics of Med Imaging**
  - BME:5210
- **Intro to Software Design**
  - ECE:3330
- **GEC Elective #1**
- **Leadership & Resourcefulness**
  - BME:3010

#### Semester 6
- **Track Elective #1**
- **Track Elective #2**
- **Physics II / Lab**
  - PHYS:1612
- **GEC Elective #2**
- **GEC Elective #3**
- **BME Design Seminar**
  - BME:4010

#### Semester 7
- **BME Design I**
  - BME:4910
- **Digital Image Processing**
  - BME:5220
- **Track Elective #3**
- **Track Elective #4**
- **GEC Elective #4**
- **GEC Elective #5**

#### Semester 8
- **BME Design II**
  - BME:4920
- **Track Elective #5**
- **Track Elective #6**
- **Track Elective #7**
- **GEC Elective #5**

## Course Codes
- **Math & Science Courses**
- **Biomedical Core Courses**
- **Engineering Core Courses**
- **Track Requisite Courses**
- **Track Elective Courses**
- **Seminar**
- **General Education Courses**