Welcome to the Department of Bioengineering

Matriculating Sophomore Bioengineers
BioE Website


**Note:** Bookmark this link & avoid googling the department website as you may link to older pages that are no longer maintained.

Sidebar:

- **BioE UG Homepage**
  - Program
  - Admissions
  - Mission ABET
  - Forms
  - Resources
  - Undergraduate Research
  - Prospective Students
  - Why Pitt BioE?
  - Handbook (PDF)

- Pertinent BioE forms
- HUM/SS list; these slides
- BMES, Science, etc.
- Best source for UG BioE
Matriculating Sophomore Bioengineers | March 2020

Curriculum at a glance

<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Calculus 1</th>
<th>Calculus 2</th>
<th>Calculus 3</th>
<th>Differential Equations</th>
<th>Linear Algebra</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Sciences</td>
<td>Physics 1</td>
<td>Physics 2</td>
<td>Chemistry 1</td>
<td>Chemistry 2</td>
<td>Cell Biology 1</td>
<td>Cell Biology 2</td>
</tr>
<tr>
<td>Humanities/Social Sciences</td>
<td>Elective 1</td>
<td>Elective 2</td>
<td>Elective 3</td>
<td>Elective 4</td>
<td>Elective 5</td>
<td>Bioethics</td>
</tr>
<tr>
<td>Basic Engineering</td>
<td>Engineering Analysis</td>
<td>Engineering Computing</td>
<td>Statics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioengineering Track</td>
<td>Intramural Internship</td>
<td>Bio-Methods</td>
<td>Imaging</td>
<td>Senior Design 1</td>
<td>Senior Design 2</td>
<td>Seminar</td>
</tr>
<tr>
<td>Elective 1</td>
<td>Elective 2</td>
<td>Elective 3</td>
<td>Elective 4</td>
<td>Elective 5</td>
<td>Elective 6</td>
<td></td>
</tr>
<tr>
<td>Advanced Engineering/Science/Technical</td>
<td>Elective 1</td>
<td>Elective 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Curriculum at a glance

<table>
<thead>
<tr>
<th>MATHEMATICS</th>
<th>MATH 0220</th>
<th>MATH 0230</th>
<th>MATH 0240</th>
<th>MATH 0290 or MATH 1270</th>
<th>MATH 0280, MATH 1180, or MATH 1185</th>
<th>BIOENG 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC SCIENCES</td>
<td>PHYS 0174 or PHYS 0475</td>
<td>PHYS 0175 or PHYS 0476</td>
<td>CHEM 0110, CHEM 0410, CHEM 0710, CHEM 0760, or CHEM 0960</td>
<td>CHEM 0120, CHEM 0420, CHEM 0720, CHEM 0770, or CHEM 0970</td>
<td>BIOENG 1070</td>
<td>BIOENG 1071 or BIOENG 1072</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BIOENG 1070</td>
<td>BIOENG 1071 or BIOENG 1072</td>
<td></td>
</tr>
<tr>
<td>HUMANITIES/</td>
<td>ELECTIVE 1</td>
<td>ELECTIVE 2</td>
<td>ELECTIVE 3</td>
<td>ELECTIVE 4</td>
<td>ELECTIVE 5</td>
<td>BIOENG 1241</td>
</tr>
<tr>
<td>SOCIAL SCIENCES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BASIC ENGINEERING</td>
<td>ENGR 0011, ENGR 0015, or ENGR 0711</td>
<td>ENGR 0012, ENGR 0016, ENGR 0712, or ENGR 0716</td>
<td>ENGR 0135</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORE BIOENGINEERING</td>
<td>BIOENG 1210 or BIOENG 1211</td>
<td>BIOENG 1220</td>
<td>BIOENG 1310</td>
<td>BIOENG 1320</td>
<td>BIOENG 1255, BIOENG 1580, or BIOENG 1680</td>
<td>BIOENG 1630</td>
</tr>
<tr>
<td>BIOENGINEERING TRACK</td>
<td>BIOENG 1002</td>
<td>BIOENG 1150</td>
<td>IMAGING COURSE</td>
<td>BIOENG 1160</td>
<td>BIOENG 1161</td>
<td>BIOENG 1085 (6 SEMESTERS)</td>
</tr>
<tr>
<td>ADVANCED ENGINEERING/SCIENCE/TECHNICAL</td>
<td>ELECTIVE 1</td>
<td>ELECTIVE 2</td>
<td>ELECTIVE 3</td>
<td>ELECTIVE 4</td>
<td>ELECTIVE 5</td>
<td>ELECTIVE 6</td>
</tr>
</tbody>
</table>

Matriculating Sophomore Bioengineers | March 2020
Curriculum at a glance

MATHEMATICS

BASIC SCIENCES

CORE BIOENGINEERING

BIOENG 1255 - Fall
BIOENG 1580 - Spring
BIOENG 1680 - Spring

BIOENG 1210 or BIOENG 1211
BIOENG 1220
BIOENG 1310
BIOENG 1320
BIOENG 1255, BIOENG 1580, or BIOENG 1680
BIOENG 1630

BIOENG 1002
BIOENG 1150
IMAGING COURSE
BIOENG 1160
BIOENG 1161
BIOENG 1085 (6 SEMESTERS)

BIOENG 1000
BIOENG 1070 or BIOENG 1072
BIOENG 1241

Fall
Spring
Fall/Spring
Fall/Spring
Fall/Spring
Fall
Spring
Fall/Spring

Spring
Fall/Spring
Fall/Spring
Fall/Spring

Matriculating Sophomore Bioengineers | March 2020

Curriculum at a glance

**MATHEMATICS**

**BASIC SCIENCES**

**CORE BIOENGINEERING**

- BIOENG 1210 or BIOENG 1211
- BIOENG 1220
- BIOENG 1310
- BIOENG 1320
- BIOENG 1255, BIOENG 1580, or BIOENG 1680
- BIOENG 1630

- BIOENG 1002
- BIOENG 1150
- IMAGING COURSE
- BIOENG 1160
- BIOENG 1161
- BIOENG 1085 (6 SEMESTERS)

**Soph./Jr.**

**Soph.**

**Jr./Sr.**

**Sr.**

**Soph./Jr./Sr.**
<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Basic Sciences</th>
<th>Basic Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 0220</td>
<td>PHYS 0174 or</td>
<td>ENGR 0011, ENGR 0015, or ENGR 0711</td>
</tr>
<tr>
<td>MATH 0230</td>
<td>PHYS 0175 or</td>
<td>ENGR 0012, ENGR 0016, or ENGR 0712, or ENGR 0716</td>
</tr>
<tr>
<td></td>
<td>PHYS 0475</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 0110, CHEM 0410, CHEM 0710, CHEM 0760, or CHEM 0960</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 0120, CHEM 0420, CHEM 0720, CHEM 0770, or CHEM 0970</td>
<td></td>
</tr>
</tbody>
</table>

First-Year Course Snapshot

- May have **AP** or other **Transfer Credits**
- May have taken more **advanced courses**
- However, should have completed reflected courses by Fall 2020 semester
Typical Sophomore-Year Course Snapshot | Fall

**Pre-req: BioE Sophomore**

**Mathematics**

- MATH 0240
- MATH 0290 or MATH 1270

**Pre-req: MATH 0230**

**Biology**

- BIOE Sophomore

**Basic Sciences**

- BIOENG 1070
- BIOSC 005x or BIOSC 006x

**Pre-req: MATH 0230 & PHYS 0174**

**Basic Engineering**

- ENGR 0135

**Pre-req: MATH 0230 & PHYS 0174**

**Core Bioengineering**

- See BioE Tracks (next slide)

**Bioengineering Track**

- ELECTIVE 1

**See BioE Seminar (after BioE Tracks)**

**Maticulating Sophomore Bioengineers | March 2020**
## BioE Tracks

<table>
<thead>
<tr>
<th>TRACK</th>
<th>CHOICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioimaging &amp; Signals</td>
<td>CHEM 0310 or BIOENG 1351</td>
</tr>
<tr>
<td>Biomechanics</td>
<td>CHEM 0310 or BIOENG 1351</td>
</tr>
<tr>
<td>Cellular Engineering</td>
<td>CHEM 0310</td>
</tr>
<tr>
<td>Medical Product Engineering</td>
<td>CHEM 0310 or BIOENG 1351 BIOENG 1024 or MEMS 0024 or IE 1051</td>
</tr>
</tbody>
</table>

### Notes

- **CHEM 0310** and **CHEM 0320** are approved Track Courses for all BioE Tracks
- Pre-med student can choose any Track! Pre-med should plan to take **CHEM 0310** in Fall, **CHEM 0320** in Spring w/ **CHEM 0345** (lab, 2 credits)
BioE Seminar (BIOENG 1085)

- You must register for BIOENG 1085 every semester
- Six (6) S grades in BIOENG 1085 are required for graduation (special case applies to semester abroad)
- Attending seminar during first semester of sophomore year is a must
  - If you encounter enrollment issues, e.g., waitlisted full, fill out the designated SurveyMonkey Form to have the undergraduate administrator (Mrs. Schuetz) enroll you in the course
  - Could also directly email Mrs. Schuetz (eeschuetz@pitt.edu)
- After first semester of sophomore year, above constraint changes
Other Course Options for Fall

In case you have completed some of the typical sophomore year courses (see Typical Sophomore-Year Course Snapshot | Fall), below are other options to consider:

- Already have MATH 0240 — take BIOENG 1000 (statistics)
- Already have MATH 0290 — take MATH 0280 (linear algebra)
- Already have CHEM 0310 — take CHEM 0320 (& CHEM 0345)
- If you have AP credit for BIOSC 0160 — can take BIOSC 1250 (Human Physiology)
- None of the above — discuss options with undergraduate program director (that is, AM)
Typical Sophomore-Year Course Snapshot | Spring

Matriculating Sophomore Bioengineers | March 2020

**Pre-req:** MATH 0230

**Pre-req:** BIOENG 1070

**Pre-req:** MATH 0290 & PHYS 0175 & CHEM 0120

**Pre-req:** MATH 0240 & PHYS 0175

**Pre-req:** ENGR 0135

---

**Note:** Could replace w/ Track Course

---

**Side note:** Connection between Fall 2020 & Spring 2021 courses
General Notes to be Cognizant of

Degree Requirements

● Students are responsible for knowing degree requirements and insuring that they meet the requirements

● Please explore and read the UG BioE Program Handbook for all aspects of the program

Course Selection

● Students are responsible for selecting courses

Advising

● Students will be assigned a departmental advisor during their junior year
Undergraduate Administrator
Mrs. Erin Schuetz (eeschuetz@pitt.edu)
**Office:** 302 Benedum Hall
**Office Hours:** Monday-Friday: 8.30am-4pm

Undergraduate Program Director
Arash Mahboobin (mahboobin@pitt.edu)
**Office:** 302D Benedum Hall
**Office Hours:** By appointment (online scheduler: [https://calendly.com/mahboobin](https://calendly.com/mahboobin)) or open-door policy
Welcome to the Department of Bioengineering
Matriculating Sophomore Bioengineers