Matriculating Sophomore Bioengineers
Pièce de résistance of the UG Program

Best source for program requirements & more...

Living document

(current slides accessible through appendix I: Matriculating Sophomore Bioengineers)
Please avoid googling the department website as you may link to older pages that are no longer maintained.

Please do not download the handbook as it is a living document.
Bioengineering Undergraduate Program

**MATHEMATICS**
- CALCULUS 1
- CALCULUS 2
- CALCULUS 3
- DIFFERENTIAL EQUATIONS
- LINEAR ALGEBRA
- STATISTICS

**BASIC SCIENCES**
- PHYSICS 1
- PHYSICS 2
- CHEMISTRY 1
- CHEMISTRY 2
- CELL BIOLOGY 1
- CELL BIOLOGY 2
- BIOLOGY LABORATORY
- HUMAN PHYSIOLOGY
- BIOETHICS

**HUMANITIES/SOCIAL SCIENCES**
- ELECTIVE 1
- ELECTIVE 2
- ELECTIVE 3
- ELECTIVE 4
- ELECTIVE 5

**BASIC ENGINEERING**
- ENGINEERING ANALYSIS
- ENGINEERING COMPUTING
- STATICS

**CORE BIOENGINEERING**
- BIO-THERMO-DYNAMICS
- BIO-TRANSPORT
- BIO-INSTRUMENTATION
- BIO-SIGNALS
- SIGNALS APPLICATION
- BIO-MECHANICS
- INTRAMURAL INTERNSHIP
- BIO-METHODS
- IMAGING
- SENIOR DESIGN 1
- SENIOR DESIGN 2
- SEMINAR

**BIOENGINEERING TRACK**
- ELECTIVE 1
- ELECTIVE 2
- ELECTIVE 3
- ELECTIVE 4
- ELECTIVE 5
- ELECTIVE 6

**ADVANCED ENGINEERING/SCIENCE/TECHNICAL**
- ELECTIVE 1
- ELECTIVE 2

Options:
- Bioimaging & Signals
- Biomechanics
- Cellular Engineering
- Medical Product Engineering
Bioengineering Undergraduate Program

**MATHEMATICS**

**BASIC SCIENCES**

**HUMANITIES/SOCIAL SCIENCES**

**BASIC ENGINEERING**

**CORE BIOENGINEERING**

- BIO-TRANSPORT
- BIO-INSTRUMENTATION
- BIO-SIGNALS
- BIO-MECHANICS

**ENGINEERING ANALYSIS**

**ENGINEERING COMPUTING**

**STATISTICS**

**CLASS BIOLOGY 1**

**CELL BIOLOGY 2**

Should be completed by end of junior year
First-Year Courses

- May have AP or other Transfer Credits
- May have taken more advanced courses
- Hopefully, will have completed Calculus 1 & 2, Physics 1 & 2, Chemistry 1 & 2, Engineering Analysis & Computing, and English Composition 1 & 2 by Fall semester of sophomore year
Fall Semester | Sophomore-Year Courses

Calculus 3 (MATH 0240, 4 credits)

Differential Equations (MATH 0290, 3 credits)

Cell Bio 1 (BIOENG 1070, 3 credits) → Fall only course

Biology Lab (BIOSC 005x or BIOSC 006x, 1 credit)

Statics (ENGR 0135, 3 credits)

BioE Seminar (BIOENG 1085, 0 credits)

Other Courses
BioE Seminar (BIOENG 1085, 0 credits)

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 requirement.

However, after first semester of sophomore year, you are permitted to enroll in a class that has a time conflict with seminar.
### Other Course Suggestions

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<td>Bioimaging &amp; Signals</td>
<td>CHEM 0310 (OCHEM 1)</td>
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<td>Biomechanics</td>
<td>CHEM 0310</td>
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<tr>
<td>Cellular Engineering</td>
<td>CHEM 0310</td>
</tr>
<tr>
<td>Medical Product Engineering</td>
<td>CHEM 0310 or BIOENG 1024 or MEMS 0024 or IE 1051</td>
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CHEM 0310 (OCHEM 1) and CHEM 0320 (OCHEM 2) are approved Track Courses for all BioE Tracks

Pre-med students can choose any Track! Pre-med students should plan to take CHEM 0310 in Fall & CHEM 0320 in Spring (w/ CHEM 0345 — lab, 2 credits)
Other Course Suggestions Cont.

In case you have completed some of the sophomore-year courses, you can consider:

Completed MATH 0240 → consider biostatistics (BIOENG 1000, 4 credits) or bioinstrumentation (BIOENG 1310, 3 credits)

Completed MATH 0290 → consider linear algebra (MATH 0280, 3 credits) or biothermodynamics (BIOENG 1210, 3 credits)

Completed CHEM 0310 → consider CHEM 0320 (& possibly CHEM 0345 towards a Chemistry Minor)

If you have AP credit for BIOSC 0160 — consider human physiology (BIOSC 1250, 3 credits)
BIOENG-Designated Courses

Please note that BIOENG-designated courses are not offered during the Summer Term.

Prior to officially entering the Bioengineering Program, you require permission codes to enroll in BIOENG-designated courses.

Kindly stay tuned for further communication from the Bioengineering Department (BIOEUGAD@pitt.edu)
Important Notes

Students are responsible for knowing **degree requirements**
Peruse chapters 1 & 2 of the **handbook**

Students are responsible for **selecting courses**
Be cognizant about semester offerings (**Fall/Spring**),
level (**Soph/Jr/Sr**), and **pre-requisites**

Students will be assigned a departmental **faculty advisor** during their **junior year**
During **sophomore year**, you will be advised by the **Bioengineering Program Director & Assistant Director**
Looking Ahead

Differential Equation & PHYS 0175 & chemistry 2 pre-requisites of biothermodynamics (BIOENG 1210, 3 credits)

MATH 0240 & PHYS 0175 pre-requisites of bioinstrumentation (BIOENG 1310, 3 credits)

ENGR 0135 pre-requisite of biomechanics 1 (BIOENG 1630, 3 credits)

BIOENG 1070 pre-requisite of Cell Bio 2 (BIOENG 1071, 3 credits → Spring only course)
Contacts

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PITT SWANSON ENGINEERING

Matriculating Sophomore Bioengineers