Bioengineering Graduation Requirements
University of Washington
Depts.washington.edu/bioe

Requirement Sheet Key
◆ = Upper-Division Admission Requirements
* = Pre-requisite may be in progress at time of application
** = Contact department adviser if Biol 180 is full during fall quarter
*** = Students are strongly encouraged to complete BIOEN 215 prior to application to the department

Mathematics (24-25 Credits)
◆ Math 124 (5cr) – Calculus I
◆ Math 125 (5cr) – Calculus II
◆ Math 126 (5cr) – Calculus III
Math 307 (3cr) – Differential Equations [pr: Math 125]
Math 308 (3cr) – Matrix Algebra [pr: Math 126]
AMATH 351/352 may substitute for Math 307/308
IND E 315 (3cr) – Prob. & Statistics [pr: Math 307]
(Math/Stat 390 may substitute for IND E 315)

Natural Sciences (44 Credits)
◆ Chem 142 (5cr) – General Chemistry with lab
◆ Chem 152 (5cr) – General Chemistry with lab
◆ Chem 162 (5cr) – General Chemistry with lab
(Chem 144 or 145 series can substitute for 142 series)
-Or-
◆ Chem 223* (4cr) - Org. Chem. Short Program [pr: Chem 162]
◆ Phys 121 (5cr) – Mechanics with lab [pr: Math 124]
◆ Phys 122* (5cr) – Electro/Oscillatory with lab [pr: Math 125]

◆ Biol180** (5cr) – Intro Biology
◆ Biol 200* (5cr) – Intro Biology [pr: Biol 180, Chem 152]
Biol 220 (5cr) – Intro Biology [pr: Biol 200, Chem 152]

Written & Oral Communications (5 Credits)
◆ English Comp (5cr) – English Composition

Visual, Literary & Performing Arts/Individuals & Society (VLPA/I&S) (24 Credits)
Minimum 10 credits in VLPA required.
Minimum 10 credits in I&S required.
Remaining 4 credits can be either VLPA or I&S.
Minimum 3 credits in Diversity (DIV) required.

Engineering Fundamentals (4 Credits)
◆ AMATH 301* (4cr) – Beg. Scientific Computing

BioE Core Courses (45 Credits)
BIOEN 215 (3cr)*** – Intro to BioE Problem Solving
BIOEN 315 (3cr) – Biochemical & Molecular Bioengineering
BIOEN 316 (4cr) – Biomedical Signals and Sensors
BIOEN 317 (2cr) – Biomedical Signals and Sensors Lab
BIOEN 325 (3cr) – Biotransport I
BIOEN 326 (3cr) – Solid and Gel Mechanics
BIOEN 327 (2cr) – Fluids and Materials Lab
BIOEN 335 (3cr) – Biotransport II
BIOEN 336 (3cr) – Bioengineering Systems and Control
BIOEN 337 (2cr) – Mass Transport and Systems Lab
BIOEN 345 (4cr) – Failure Analysis of Human Physiology
BIOEN 401 (3cr) – BioE Capstone Fundamentals
Students must complete one of the two following options
BIOEN 402 (10cr) – BioE Capstone Design
-Or-
BIOEN 403,404,405 (10cr) – BioE Capstone Design

BioE Senior Electives (15 Credits)
Students complete one concentration: Molecular and Materials Bioengineering; Cells, Tissues, and Systems; Diagnostics and Therapeutic Instrumentation. See website or contact advising for a list of acceptable courses. The department offers a degree option in NanoMolecular Engineering. See website for details.

Approved Engineering Electives (9 Credits)
See BioE Advising for a list of acceptable courses. Extra Bioengineering senior elective credit may fulfill this requirement.

Free Electives (14-15 Credits)

Total Credits Required for Graduation (180 Credits)

Early Admission Requirements
1. Early Admission is an option for Autumn Quarter Only.
2. Students must be enrolled at UW-Seattle.
3. Math 124, 125 & 126 or equivalent.
4. Chem 142, 152 & 162 or equivalent.
5. 5 credits of English Composition.
6. 15 credits of the above 30 must have been completed at UW.
7. Running Start students should consult w/ a BioE adviser.

Application Deadlines
Early Admission – July 1st
Upper Division Admission – February 1st
## Bioengineering Sample Curriculum
University of Washington
dehs.washington.edu/bioe

### Freshman – Autumn Quarter
- **MATH 124** – Calculus I 5
- **CHEM 142** – Chem & Lab I 5
- **BIOEN 215** – Intro to BioE Problem Solving 3
- **VLPA/I&S** 2

Quarter Total 15

### Freshman – Winter Quarter
- **MATH 125** – Calculus II 5
- **CHEM 152** – Chem & Lab II 5
- **English Comp.** 5

Quarter Total 15

### Freshman – Spring Quarter
- **MATH 126** – Calculus III 5
- **CHEM 162** – Chem & Lab III 5
- **AMATH 301** – Scientific Computing 4

General Elective (Seminar) 1

### Sophomore – Autumn Quarter
- **BIOL 180** – Intro Biology I 5
- **PHYS 121** – Mechanics & Lab I 5
- **CHEM 223 or 237** – Organic Chem 4

Quarter Total 14

### Sophomore – Winter Quarter
- **BIOL 200** – Intro Biology II* 5
- **PHYS 122** – Electro & Lab I* 5
- **MATH 307** – Diff. Equations 3

General Elective 2

### Sophomore – Spring Quarter
- **BIOEN 315** – BioChem & Mol BioE 3
- **BIOEN 316** – Biomed Signals & Sensors Lab 2

Quarter Total 15

### Junior – Autumn Quarter
- **BIOEN 325** – Biotransport I 3
- **BIOEN 326** – Solid and Gel Mech. 3
- **BIOEN 327** – Fluids and Materials Lab 2
- **IND E 315** – Stats for Engineers 3
- **VLPA/I&S** 5

Quarter Total 16

### Junior – Winter Quarter
- **BIOEN 335** – Biotransport II 3
- **BIOEN 336** – BioEn Sys. & Control 3
- **BIOEN 337** – Mass Transport and Sys. Lab 2
- **ENGR Elective** 3
- **VLPA/I&S** 5

Quarter Total 16

### Junior – Spring Quarter
- **BIOEN 345** – Failure Analysis of Human Physiology 4
- **BIOEN 401** – BioE Capstone Fund. 3
- **BIOEN Sr. Elective** 3
- **ENGR Elective** 3
- **VLPA/I&S** 2

Quarter Total 17

### Senior – Autumn Quarter
- **BIOEN 402 or 403** – Capstone variable cr
- **BIOEN Concentration Elective I** 3
- **BIOEN Concentration Elective II** 3
- **VLPA/I&S** 5

Quarter Total 13

### Senior – Winter Quarter
- **BIOEN 402 or 404** – Capstone variable cr
- **BIOEN Concentration Elective III** 3
- **ENGR Elective** 3
- **VLPA/I&S**

Quarter Total 16

### Senior – Spring Quarter
- **BIOEN 402 or 405** – Capstone variable cr
- **BIOEN Concentration Elective IV** 3
- **General Elective** 5
- **General Elective** 3

Quarter Total 14

**Bold face** courses are required for upper-division admission.

*May be in-progress during quarter of admission

Students planning on attending medical school are encouraged to meet with an advisor to discuss additional requirements.

**For more information contact:**
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