



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 (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)
- Math/Stat 390 (4cr) – Prob. & Statistics [*pr: Math 126*]
- (IND E 315 may substitute for Math 390)

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)
- ◆ Chem 237 (4cr) – Organic Chemistry [*pr: Chem 162*]
- Or-
- ◆ Chem 223 (4cr) –Organic 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 (7 Credits)

- ◆ English Comp (5cr) – English Composition
- HCDE 231 (3cr) – Intro to Technical Writing [*pr: Engl. Comp*]

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.

Engineering Fundamentals (4 Credits)

- ◆ AMATH 301(4cr)* – Beg. Scientific Computing

BioE Core Courses (44 Credits)

- BIOEN 215 (3cr)*** – Intro to BioE Problem Solving
- BIOEN 315 (3cr) – Biochemical & Molecular Bioengineering
- BIOEN 316 (3cr) – 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)

See BioE Advising for list of acceptable courses. Courses should focus on one of the following areas: Biomaterials, Cells and Tissue, Instrumentation, Molecular Engineering. At least one design-designated senior elective is required.

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 (8 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

BioE Bioengineering Sample Curriculum

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Freshman – Autumn Quarter		Freshman – Winter Quarter		Freshman – Spring Quarter	
◆ MATH 124 – Calculus I	5	◆ MATH 125 – Calculus II	5	◆ MATH 126 – Calculus III	5
◆ CHEM 142 – CHEM & Lab I	5	◆ CHEM 152 – CHEM & Lab II	5	◆ CHEM 162 – CHEM & Lab III	5
◆ BIOEN 215 – Intro to BioE		◆ English Comp.	5	◆ *AMATH 301 – Scientific Computing	4
Problem Solving	3			General Elective (Seminar)	1
VLPA/I&S	2				
Quarter Total	15	Quarter Total	16	Quarter Total	15

Sophomore – Autumn Quarter		Sophomore – Winter Quarter		Sophomore – Spring Quarter	
◆ BIOL 180 – Intro Biology I	5	◆ BIOL 200 – Intro Biology II *	5	BIOL 220 – Intro Biology III	5
◆ PHYS 121 – Mechanics & Lab I	5	◆ PHYS 122 – Electro & Lab I *	5	MATH 308 – Matrix Algebra	3
◆ CHEM 223 or 237 – Organic Chem	4	HCDE 231 – Technical Writing	3	BIOEN 315 – BioChem & Mol BioE	3
		MATH 307 – Diff. Equations	3	BIOEN 316 – Biomed Signals & Sens	3
				BIOEN 317 – Biomedical Signals and Sensors Lab	2
Quarter Total	14	Quarter Total	16	Quarter Total	16

Junior – Autumn Quarter		Junior – Winter Quarter		Junior – Spring Quarter	
BIOEN 325 – Biotransport I	3	BIOEN 335 – Biotransport II	3	BIOEN 345 – Failure Analysis of Human Physiology	4
BIOEN 326 – Solid and Gel Mech.	3	BIOEN 336 – BioEn Sys. & Control	3	BIOEN 401 – BioE Capstone Fund.	3
BIOEN 327 – Fluids and Materials Lab	2	BIOEN 337 – Mass Transport and Sys. Lab	2	BIOEN Sr. Elective	3
IND E 315 – Stats for Engineers	3	ENGR Elective	3	ENGR Elective	3
VLPA/I&S	5	VLPA/I&S	5	VLPA/I&S	2
Quarter Total	16	Quarter Total	16	Quarter Total	15

Senior – Autumn Quarter		Senior – Winter Quarter		Senior – Spring Quarter	
BIOEN 402 or 403 – Capstone	variable cr	BIOEN 402 or 404 – Capstone	variable cr	BIOEN 402 or 405 – Capstone	variable cr
BIOEN Focus Area Elective I	3	BIOEN Focus Area Elective III	3	BIOEN Focus Area Elective IV	3
BIOEN Focus Area Elective II	3	ENGR Elective	3	General Elective	5
VLPA/I&S	5	VLPA/I&S	5	General Elective	2
Quarter Total	14	Quarter Total	14	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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