This resource is for ENGRUD students who entered the UW in AUT20 or later.

**Bioengineering Graduation Requirements**
University of Washington
http://bioe.washington.edu

### Engineering Fundamentals
- Diversity
- Additional Individuals & Society
- Visual, Literary & Performing Arts

### Areas of Knowledge:
- Writing and Oral Communication

### Engineering General Education Requirements (29cr)

#### Mathematics (24-26cr)
- MATH 124, 125, 126 - Calc. w/ Analytic Geo. I-III (15cr)
- MATH 307 - Intro to Diff. Equations (3cr) [pr: MATH 125]
- MATH 308 - Matrix Algebra with Applications (3cr) [pr: MATH 126]
- INDE 315 - Prob. & Stats for Engineers (3cr) [pr: MATH 307]
  - OR Q SCI 381 - Intro to Prob. & Stats (5cr) [pr: MATH 124]
  - OR STAT 311 - Elements of Stat. Meth. (5cr) [pr: MATH 124]
- Sciences (44cr)
  - CHEM 142 - General Chemistry (5cr)
  - CHEM 152 - General Chemistry (5cr)
  - CHEM 162 - General Chemistry (5cr)
- PHYS 121 - Mechanics (5cr) [pr: MATH 124]
- PHYS 122 - Electromagnetism (5cr) [pr: MATH 125 or MATH 134; PHYS 121]
- BIOL 180 - Introductory Biology (5cr)
- BIOL 200 - Introductory Biology (5cr) [pr: BIOL 180; CHEM 152 (concurrent)]
- BIOL 220 - Introductory Biology (5cr) [pr: BIOL 200]

#### Written and Oral Communication (5cr)
- English Composition

#### Engineering Fundamentals (4-5cr)
- AMATH 301 - Beg. Scientific Comp. (4cr) [pr: MATH 125]
  - OR
- CSE 142 - Comp. Prog. I (4cr) + BIOEN 217 - MATLAB (1cr)
  - OR
- CSE 160 - Data Prog. I (4cr) + BIOEN 217 - MATLAB (1cr)

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**ENGRUD Requirement Sheet – Key:**

- ✪ = Placement Requirements;
- ✫ = Pick one to satisfy placement requirement
- Placement: July 1 at the end of the first year

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**Department Core (37cr)**

- ✫ BIOEN 215 - Bioengineering Problem Solving (3cr)
- ✫ ENGR 115 - Engineering Transformation of Health (3cr)
- BIOEN 315 - Biochemical Molecular Engineering (3cr)
- BIOEN 316 - Biomedical Signals and Sensors (4cr)
- BIOEN 317 - Biomedical Signals and Sensors Lab (2cr)
- BIOEN 325 - Biotransport I (4cr)
- BIOEN 326 - Solid and Gel Mechanics (4cr)
- BIOEN 327 - Fluids and Materials Laboratory (2cr)
- BIOEN 335 - Biotransport II (3cr)
- BIOEN 336 - BioE Systems and Control (3cr)
- BIOEN 337 - Mass Transport and Systems Laboratory (2cr)
- BIOEN 345 - Failure Analysis and Human Physiology (4cr)
- BIOEN 400 - Fundamentals of Bioengineering Design (3cr)

**Senior Electives (15cr)**

Courses taken from approved list of 400-level and above BIOEN-prefixed courses. See department for list.

**Capstone and Approved Engineering Electives (7cr)**

- Option A: integrated design and research
  - BIOEN 401 - BioE Capstone Proposal (1cr) AND
  - BIOEN 402 - Research and Design Capstone (9cr)
  - OR
- Option B: research project and small group design and build
  - BIOEN 404 - Team Design I (3cr) AND
  - BIOEN 405 - Team Design II (4cr)

**Approved Engineering Electives (9-12cr)**

See department for list of approved courses. Students completing Capstone Option A are required to take 9 credits from this list; students completing Capstone Option B take 12 credits.

**Total credits required for graduation: 180cr**

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Honors or accelerated sequences of chemistry, math and physics can satisfy the placement requirements. AMATH 351/352/353 may be alternatives to MATH 307/308/309, work with the department to confirm.

Updated September 2020
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Bioengineering Sample Curriculum
University of Washington
https://bioe.washington.edu

Bioengineering Advising
Office: N107 Foege Hall, Box 355061
Seattle, WA 98195-5061
Phone: (206) 685-2022

This is a sample four-year plan for ENGRUD students that prepares them to be able to request placement at the end of the first year. It is intended to provide a framework for ENGRUD students to reference as they create their own individual academic plan.

Courses required to request placement for ENGRUD students: ENGR 101; MATH 124, 125, 126; CHEM 142; PHYS 121; English Composition; ENGRUD students who are interested in BioE should choose one of the following: AMATH 301; BIOEN 215; CSE 142, CSE 160; CHEM 152, CHEM 162; ENGR 115; PHYS 122.

### First Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 124 - Calc. w Analytic Geom I</td>
<td>MATH 125 - Calc. w Analytic Geom II</td>
<td>MATH 126 - Calc. w Analytic Geom III</td>
</tr>
<tr>
<td>CHEM 142 - General Chemistry</td>
<td>CHEM 152 - General Chemistry</td>
<td>CHEM 162 - General Chemistry</td>
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<tr>
<td>E-FIG: ENGR 101 &amp; GEN ST 199</td>
<td>English Composition</td>
<td>PHYS 121 - Mechanics</td>
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<tr>
<td>VLPA / I&amp;S</td>
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<td>VLPA / I&amp;S</td>
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<td>Qtr. Total: 15</td>
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### Second Year

<table>
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<tr>
<th>Autumn Quarter</th>
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<th>Spring Quarter</th>
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<tbody>
<tr>
<td>BIOL180 - Introductory Biology</td>
<td>BIOL 200 - Introductory Biology</td>
<td>MATH 307 - Differential Equations</td>
</tr>
<tr>
<td>PHYS 122 - Electromagnetism</td>
<td>VLPA / I&amp;S</td>
<td>BIOEN 317 - Signals &amp; Sensors Lab</td>
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<td>VLPA / I&amp;S / DIV</td>
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<td>Qtr. Total: 17</td>
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### Third Year

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<tr>
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<tbody>
<tr>
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<td>BIOEN 327 - Fluids and Materials Lab</td>
<td>BIOEN 337 - Mass Transport and Systems Lab</td>
<td>BIOEN Elective I</td>
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<tr>
<td>IND E 315 - Prob Stats for Engineers</td>
<td>BIOEN 220 - Introductory Biology</td>
<td>VLPA / I&amp;S</td>
</tr>
<tr>
<td>MATH 308 - Matrix Algebra</td>
<td>VLPA / I&amp;S</td>
<td>BIOEN 401 - Capstone Proposal (only for 402 track)</td>
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### Fourth Year

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<tr>
<th>Autumn Quarter</th>
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<th>Spring Quarter</th>
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<tbody>
<tr>
<td>BIOEN 402 - Design &amp; Research</td>
<td>BIOEN 402 - Design &amp; Research</td>
<td>BIOEN 402 - Design &amp; Research</td>
</tr>
<tr>
<td>Engineering Elective</td>
<td>OR BIOEN 404 - Team Design</td>
<td>OR BIOEN 405 - Team Design</td>
</tr>
<tr>
<td>VLPA / I&amp;S</td>
<td>BIOEN Elective II</td>
<td>BIOEN Elective IV</td>
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<tr>
<td>One of the following: Full-time internship (ENGR 321)</td>
<td>BIOEN Elective III</td>
<td>Engineering Elective</td>
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<tr>
<td>Study Abroad, Clinical Experience</td>
<td>VLPA / I&amp;S</td>
<td>General Elective</td>
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<tr>
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