**Bioresource Science & Engineering**  
Graduation Requirements  
University of Washington  
[https://sefs.uw.edu/students/undergraduate/bse-major](https://sefs.uw.edu/students/undergraduate/bse-major)

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**Requirement Sheet Key:**  
◆ = Placement Requirements

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**Placement Periods:**  
Placement 1 = July 1 at end of first year  
Placement 2 = January 15 of second year

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### Mathematics (24-26cr)

- **◆ MATH 124, 125, 126 - Calculus with Analytical Geometry** I, II, III (15cr)
- MATH 307 - Introduction to Differential Equations (3cr)  
  [pr: MATH 125]
- MATH 308 - Matrix Algebra with Applications (3cr)  
  [pr: MATH 126]
- Q SCI 381 (5cr) **OR** STAT 390 (4cr) **OR** IND E 315 (3cr)

### Sciences (38cr)

- **◆ CHEM 142, 152, 162 - General Chemistry** (15cr)
- CHEM 237 - Organic Chemistry I (4cr)  
  [pr: CHEM 153, CHEM 155, or CHEM 162]
- CHEM 238 - Organic Chemistry I (4cr)  
  [pr: CHEM 237, CHEM 335, or CHEM 237]
- **◆ PHYS 121 - Mechanics** (5cr)  
  [pr: either MATH 124 or MATH 134]
- PHYS 122 - Electromagnetism (5cr)  
  [pr: MATH 125 or MATH 134; PHYS 121]
- PHYS 123 - Waves (5cr)  
  [pr: MATH 126 or MATH 134; PHYS 122]

### Engineering General Education Requirements (38cr)

**Written and Oral Communication:**

- **◆ English Composition** (5cr)

**Areas of Knowledge, Part I Outside of Major**

- Individuals & Societies - I&S (10cr)
- Natural World - NW (10cr)

**Areas of Knowledge, Part II – No Overlap Restriction with Major Requirements**

- Visual, Literary & Performing Arts - VLPA (10cr)
- Individuals & Society - I&S (5cr) **AND** Econ 200 - Intro. To Microeconomics (5cr)  
  (Fulfills major req. & I & S req.)
- Natural World - NW (10cr)
- VLPA or I&S or NW (10cr)
- Diversity - DIV (3cr) - (may overlap with VLPA or I&S)

**Major Requirements (8cr)**

- ECON 200 - Introduction to Microeconomics (5cr)

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### Engineering Fundamentals (4cr)

- AA 260 - Thermodynamics (4cr)

### Departmental Core (59cr)

- BSE 150 - Bioresource Seminar (1cr)
- BSE 201 - Pulp, Paper and Bioproducts (3cr)
- BSE 202 - Pulp & Paper Field (1cr)
- BSE 248 - Paper Structure/Prop (4cr)
- BSE 391 - Engineering Principles of Biorefineries (5cr)
- BSE 392 - Bioresource Transport Phenomena (5cr)
- BSE 406 - Natural Products Chem (5cr)
- BSE 420 - Bioresource Sci/Eng 1 (4cr)
- BSE 421 - Bioresource Sci/Eng 2 (4cr)
- BSE 422 - Bioresource Sci/Eng 3 (4cr)
- BSE 426 - Bioresource Lab (4cr)
- BSE 430 - Paper Process (5cr)
- BSE 436 - Papermaking Lab II (4cr)
- BSE 480 - Bioresource Design (4cr)
- BSE 481 - Bioresource Design II (5cr)
- BSE 497 - Internship (1cr)

**Engineering Electives (15cr minimum)**

See department for list of approved courses

**Free Elective (2cr)**

Additional coursework in any subject area not used elsewhere in degree.

**Business Option (12cr minimum)**

See department for list of approved courses

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

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Honors or accelerated sequences of math and chemistry can satisfy some of the above requirements, see department website for specifics.  
AMATH 351/352/353 are alternatives to Math 307/308/309.

*Updated November 2019*
This is a sample four-year plan for ENGRUD students. It is intended to provide a framework for ENGRUD students to reference as they create their own individual academic plan.

Courses required for ENGRUD students to request placement: **MATH 124, MATH 125, MATH 126; PHYS 121; CHEM 142; CHEM 152; CHEM 162; 5 credits of English Composition**.

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<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
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