This resource is for ENGRUD students who entered the UW in AUT23 or later.

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

ENGRUD Requirement Sheet - Key
◆ = Placement Requirements
★ = Pick one to satisfy placement requirement
Placement: July 1 at the end of the first year

◆ E-FIG: ENGR 101 and GEN ST 199 (2cr)

Mathematics (24-26cr)
◆ MATH 124, 125, 126 - Calc. w/ Analytic Geo I-III (15cr)
MATH 207 - Intro to Differential Equations (3cr)  [pr: MATH 125]
MATH 208 - Matrix Algebra w/ Applications (3cr)  [pr: MATH 126]
Q SCI 381 - Intro to Probability & Stats (5cr)
OR STAT 390 - Stat Methods in Engr. & Science (4cr)
OR IND E 315 - Prob & Stats for Engineers (3cr)

Sciences (38cr)
◆ CHEM 142 - General Chemistry (5cr)
★ CHEM 152 - General Chemistry (5cr)
★ CHEM 162 - General Chemistry (5cr)
CHEM 237 - Organic Chemistry (4cr)  [pr: CHEM 153, 155 or 162]
CHEM 238 - Organic Chemistry (4cr)  [pr: CHEM 237 or 335]
◆ PHYS 121 - Mechanics (5cr)  [pr: 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 (29cr)
Written and Oral Communication:
◆ English Composition (5cr)
ENGR 231 - Intro to Technical Communication (3cr)

Areas of Inquiry, Part I - Outside of Major
Social Sciences - SSc (10cr)

Areas of Inquiry, Part II - No Overlap Restriction with Major Requirements
Arts & Humanities – A&H (10cr)
Social Sciences - SSc (10cr)
ECON 200 - Introduction to Microeconomics (5cr)
Remaining credits met in major (BSE 480)
Diversity - DIV (5cr) (may overlap with A&H or SSc)

Engineering Fundamentals (4cr)
A A 260 - Thermodynamics (4cr)

Departmental Core (63cr)
BSE 210: Concepts in Bioproduct Sustainability (4 cr)
BSE 248 - Paper Properties (4cr)
BSE 391 - Engineering Principles of Biorefineries (5cr)
BSE 392 - Bioresource Transport Phenomena (5cr)
BSE 406 - Natural Products Chemistry (5cr)
BSE 410 – Industrial Wastewater Treatment & Reduction (4cr)
BSE 420 - Bioresource Engineering I (4cr)
BSE 421 - Bioresource Engineering II (4cr)
BSE 422 - Bioresource Engineering III (4cr)
BSE 426 - Bioresource Laboratory (4cr)
BSE 430 - Papermaking Processes (5cr)
BSE 436 - Pulp and Paper Laboratory II (4cr)
BSE 480 - Bioresource Design I (4cr)
BSE 481 - Bioresource Design II (5cr)
BSE 497 - Pulp and Paper Internship (1cr)

Engineering Electives (11cr minimum)
See department for list of approved courses

Business Option (12cr minimum)
See department for list of approved courses

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

Total credits required for graduation: 180cr

Honors or accelerated sequences of chemistry, math and physics will satisfy the placement requirements. Honors calculus substitutes for MATH 207 and 208. AMATH 351/352/353 may be alternatives to MATH 207/208/209, work with the department to confirm.

Updated September 2023
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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 BSE should choose one of the following: CHEM 152, CHEM 162; PHYS 122, PHYS 123.

### First Year

#### Autumn Quarter
- MATH 124 - Calc. w Analytic Geom I
- CHEM 142 - General Chemistry
- E-FIG; ENGR 101 & GEN ST 199
- A&H / SSc

**Qtr. Total:** 15

#### Winter Quarter
- MATH 125 - Calc. w Analytic Geom II
- CHEM 152 - General Chemistry
- English Composition

**Qtr. Total:** 15

#### Spring Quarter
- MATH 126 - Calc. w Analytic Geom III
- CHEM 162 - General Chemistry
- PHYS 121 - Mechanics

**Qtr. Total:** 15

### Second Year

#### Autumn Quarter
- MATH 207 - Differential Equations
- CHEM 237 - Organic Chemistry
- PHYS 122 – Electromagnetism
- BSE 210 - Bioproduct Sustainability

**Qtr. Total:** 16

#### Winter Quarter
- MATH 208 - Matrix Algebra
- PHYS 123 - Waves
- CHEM 238 - Organic Chemistry
- A&H / SSc / DIV

**Qtr. Total:** 17

#### Spring Quarter
- A A 260 - Thermodynamics
- BSE 248 - Paper Properties
- Econ 200 - Microeconomics

**Qtr. Total:** 13

### Third Year

#### Autumn Quarter
- BSE 391 - Engineering Principles of Biorefineries
- BSE 406 - Natural Products Chemistry
- ENGR 231: Intro to Technical Communication

**Qtr. Total:** 13

#### Winter Quarter
- BSE 392 - Bioresource Transport Phenomena
- BSE 420 - Biore. Engineering I
- BSE 410: Industrial Wastewater treatment

**Qtr. Total:** 17

#### Spring Quarter
- BSE 421 - Biore. Engineering II
- BSE 426 - Bioresource Lab
- Engineering Elective

**Qtr. Total:** 14

### Fourth Year

#### Autumn Quarter
- BSE 422 - Biore. Engineering III
- BSE 430 - Papermaking Processes
- BSE 497 - Internship
- A&H / SSc

**Qtr. Total:** 15

#### Winter Quarter
- BSE 436 - Pulp and Paper Lab II
- BSE 480 - Bioresource Design I (I&S)
- A&H / SSc

**Qtr. Total:** 13

#### Spring Quarter
- BSE 481 - Bioresource Design II (I&S)
- Engineering Elective
- A&H / SSc

**Qtr. Total:** 14

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**= Pick one to satisfy placement requirement**

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