This resource is for ENGRUD students who entered the UW in AUT20 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 Geom I-III (15cr)
MATH 307 - Intro to Differential Equations (3cr)  [pr: MATH 125]
MATH 308 - 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]

General Education Requirements (29cr)

Written and Oral Communication:
✦ English Composition (5cr)
ENGR 231 - Intro to Technical Communication (3cr)

Areas of Knowledge, Part I - Outside of Major
Individuals & Societies - I&S (10cr)
Natural World - NW (10cr)
(Met with MATH 124 and CHEM 142 above)

Areas of Knowledge, Part II - No Overlap Restriction with Major Requirements
Visual, Literary & Performing Arts - VLPA (10cr)
Individuals & Societies - I&S (10cr)
ECON 200 - Introduction to Microeconomics (5cr)
Remaining credits met in major (BSE 480 and 481)
Diversity - DIV (3cr) - (may overlap with VLPA or I&S)

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

Departmental Core (59cr)
BSE 150 - Bioresource Science & Engineering Seminar (1cr)
BSE 201 - Intro to Pulp, Paper and Bioproducts (3cr)
BSE 202 - Pulp and Paper Lab and Field Studies (1cr)
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 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 (15cr minimum)
See department for list of approved courses

Business Option (12 cr 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. 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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Bioresource Science & Engineering  
Sample Curriculum  
University of Washington  
[Website Link]

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

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Courses</th>
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| Autumn           | ✷ MATH 124 - Calc. w Analytic Geom I  
              | ✷ CHEM 142 - General Chemistry  
              | VLPA / I&S  
              | ✷ E-FIG; ENGR 101 & GEN ST 199 |
| Winter           | ✷ MATH 125 - Calc. w Analytic Geom II  
              | ✷ CHEM 152 - General Chemistry  
              | ✷ English Composition  |
| Spring           | ✷ MATH 126 - Calc. w Analytic Geom III  
              | ✷ CHEM 162 - General Chemistry  
              | ✷ PHYS 121 - Mechanics  |

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### Second Year

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| Autumn           | MATH 307 - Differential Equations  
              | CHEM 237 - Organic Chemistry  
              | BSE 150 - Bioresource Sci & Engr Sem.  
              | BSE 201 - Intro to Pulp, Paper & Bioprod.  
              | BSE 202 - Pulp & Paper Lab & Field  
              | Engineering Elective  |
| Winter           | MATH 308 - Matrix Algebra  
              | PHYS 122 - Electromagnetism  
              | CHEM 238 - Organic Chemistry  
              | ENGR 231 - Technical Comm.  |
| Spring           | AA 260 - Thermodynamics  
              | PHYS 123 - Waves  
              | BSE 248 - Paper Properties  |

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### Third Year

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<tr>
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</table>
| Autumn           | BSE 391 - Engineering Principles of Biorefineries  
              | BSE 406 - Natural Products Chemistry  
              | Q SCI 381 - Statistics  
              | BSE 392 - Bioresource Transport Phenomena  
              | BSE 420 - Biores. Engineering I  
              | Engineering Elective  
              | ECON 200 - Intro to Microeconomics  |
| Winter           | BSE 392 - Bioresource Transport Phenomena  
              | BSE 420 - Biores. Engineering I  
              | Engineering Elective  
              | ECON 200 - Intro to Microeconomics  |
| Spring           | BSE 421 - Biores. Engineering II  
              | BSE 426 - Bioresource Lab  
              | Engineering Elective / Business Option  |

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### Fourth Year

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<tr>
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</table>
| Autumn           | BSE 422 - Biore. Engineering III  
              | BSE 430 - Papermaking Processes  
              | BSE 497 - Internship  
              | VLPA / I&S / DIV  |
| Winter           | BSE 436 - Pulp and Paper Lab II  
              | BSE 480 - Bioresource Design I (I&S)  
              | VLPA / I&S  
              | Free Elective  |
| Spring           | BSE 481 - Bioresource Design II (I&S)  
              | Engineering Elective  
              | VLPA / I&S  

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| = Placement Requirement  
| ✷ = Pick one to satisfy placement requirement

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*Updated September 2020*