**Bachelor of Science with a Major in:**  
**Bioresource Science and Engineering**

**Suggested Course Sequencing**

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Autumn</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHEM 142 General Chemistry I (5 cr)</td>
<td>CHEM 152 General Chemistry II (5 cr)</td>
<td>CHEM 162 General Chem. III (5 cr)</td>
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<tr>
<td></td>
<td>MATH 124 Calculus I (5 cr)</td>
<td>MATH 125 Calculus II (5 cr)</td>
<td>MATH 126 Calculus III (5 cr)</td>
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<td></td>
<td>GEN ST 199 or Elective (1-2 cr)</td>
<td>ENGL 131 Composition (5 cr)</td>
<td>Any DTC Course (5 cr)</td>
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<td></td>
<td>BSE 150 Intro to Bioresources (3 cr)</td>
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<tr>
<th>Sophomore Year</th>
<th>Autumn</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td></td>
<td>CHEM 237 Organic Chemistry I (5 cr)</td>
<td>CHEM 238 Organic Chemistry II (4 cr)</td>
<td>BSE 248 Paper Structure/prop (4 cr)</td>
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<tr>
<td></td>
<td>PHYS 121 Mechanics (5 cr)</td>
<td>PHYS 122 Electromag-Oscill (5 cr)</td>
<td>PHYS 123 Waves (5 cr)</td>
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<td>*MATH 307 Differential Equations (3 cr)</td>
<td>**MATH 308 Linear Algebra (3 cr)</td>
<td>A A 260 Thermodyn (4 cr)</td>
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<td>BSE 201 Pulp, Paper and Bioproducts (3 cr)</td>
<td>BSE 231 Tech Writing (3 cr)</td>
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<td>BSE 202 Pulp &amp; Paper Field (1 cr)</td>
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<th>Junior Year</th>
<th>Autumn</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td></td>
<td>BSE 391* Eng Princip. Biorefineries (5 cr)</td>
<td>BSE 392* Bioresource Transport (5 cr)</td>
<td>BSE 426* Bioresource Lab (4 cr)</td>
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<tr>
<td></td>
<td>BSE 406* Natural Products Chem (5 cr)</td>
<td>BSE 420* Bioresource Sci/Eng (4 cr)</td>
<td>BSE 421* Biorec. Sci/Eng 2 (4 cr)</td>
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<tr>
<td></td>
<td>Engineering Topics (3 cr)</td>
<td>Engineering Topics (3 cr)</td>
<td>Engineering Topics (6 cr)</td>
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<tr>
<td></td>
<td>Q SCI 381 Statistics (5 cr)</td>
<td>ECON 200 Microeconomics (5 cr)</td>
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<tr>
<th>Senior Year</th>
<th>Autumn</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td></td>
<td>BSE 422* Biorec. Sci/Eng 3 (4 cr)</td>
<td>BSE 436* Papermaking Lab II (4 cr)</td>
<td>BSE 481* Biorec. Design II (5 cr)</td>
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<tr>
<td></td>
<td>BSE 430* Paper. Process+ (5 cr)</td>
<td>BSE 480* Bioresource Design (4 cr)</td>
<td>Any VLPA (5 cr)</td>
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<td>BSE 497* Internship (1 cr)</td>
<td>Any I&amp;S credit (5 cr)</td>
<td>DIV credit (3 cr)</td>
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<td></td>
<td>Any I&amp;S credit (5 cr)</td>
<td>Any VLPA (5 cr)</td>
<td>Engineering Topics (3 cr)</td>
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**Engineering Topics**  
(15 credits minimum):  
Choose from the following list:  
CSE 142, 143;  
CHEM E 326, 341, 355, 375, 436, 455, 480, 481;  
MSE 170, 310, 362, 463, 471, 475;  
CEE 220, 291,354, 357, 480, 482, 487, 488, 490, 493, 494;  
A A 210;  E E 215;  IND E 337;  M E 230;  ENGR 321 (max 6 credits)

**Business Option (must be declared, will appear on transcript, additional credits required)**  
(12 credits minimum):  
Choose from the following list:  
ESRM 400 (3, WIN), ESRM 423 (3, WIN),  
ESRM 320 (5, SUM only online), ESRM 321 (5, SUM only online),  
ENTRE 443 (2, AUT), ACCTG 215 (5), ACCTG 219 (4), ACCTG 225 (5),  
INFO 101 (5), INFO 102 (5)

**Academic Progress Policy**

All BSE students are expected to maintain satisfactory progress with the department and the University.  

+All BSE courses require a 2.0 minimum grade.

*Or AMATH 351 Diff Equations (3 cr)  
**Or AMATH 352 Linear Algebra (3 cr)  
1 Or STAT 390 or IND E 315

Effective Sept 2019
Bioresource Science and Engineering Major Information

Accreditation

The BSE program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org. The Bioresource Science and Engineering Program is an engineering major based in the School of Environmental and Forest Sciences in the College of the Environment.

Program Focus

The BSE program focuses on the development of process engineers who optimize the manufacture of value added products from sustainable natural resources. Students learn the fundamentals of science and engineering related to the conversion of biomass to fuels, chemicals, and pulp and paper products. The BSE program has a strong research component.

BSE graduates begin careers in manufacturing, engineering, technical service and management training. Positions include process engineer, technical sales engineer, product development engineer, environmental engineer or scientist and research engineer as well as many other specialties that require a fundamental chemical engineering background.

Additional Areas of Study: Students with an interest in chemical engineering may apply for admission to CHEM E during their BSE sophomore year. Contact the CHEM E department for advising in advance of application and notify the BSE advisers of the intent to pursue a double degree.

Admission:

BSE is a capacity-constrained major. Applications for incoming freshmen are due November 15th. Current UW and transfer students apply through the College of Engineering online application.

Prospective UW students:
www.washington.edu/admissions

Program/study options:
Research, internships, honors, scholarships, and graduate study for qualified applicants.

Career/job information:
BSE students are supported by the Washington Pulp and Paper Foundation (depts.washington.edu/wppf) for scholarships, internships and a path to full time employment.

Sample Areas of Research

High-speed chemical analysis of biomass
Use of natural non-wood products to make paper and other bio-products
Bioconversion of lignocellulosic biomass to ethanol
Biofuel and bioenergy options from wood
Surface and colloid science in bioprocessing
Fiber composites
Sensor development for biorefineries
Fiber production from agriculture residues
Bioconversion of biomass to fuels and chemicals
Life cycle assessment of biofuel systems
Thermal conversion of biomass to fuels and chemicals
Supercritical processes in biorefineries
Production of unique nano-carbon structures from biomass

W SCHOOL OF ENVIRONMENTAL AND FOREST SCIENCES
UNIVERSITY of WASHINGTON
College of the Environment

Office of Student and Academic Services
Anderson Hall Rooms 116/130
PH: 206-543-3077

Appointments: norduw.youcanbook.me

BLOG: sefs.washington.edu/students/student-blog/
WEB: sefs.washington.edu/students/undergraduate/bse-major/