BSE

Bioresource Science & Engineering
Graduation Requirements
University of Washington
https://depts.washington.edu/sefsbse/

Requirement Sheet Key:
◆ = Placement Requirements

Placement Periods:
Placement 1 = July 1 at end of first year
Placement 2 = January 15 of second year
Placement 3 = July 1 at end of second year

Mathematics (24-25cr)	
◆ **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]	☐
One course from: Q SCI 381 (5cr), STAT 390 (4cr), IND E 315 (3cr)	☐
Sciences (41cr)	
◆ **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 (32cr)	
Written and Oral Communication (8cr):	☐
◆ **English Composition (5cr)**	☐
BSE/ENGR 231-Intro to Technical Communication (3cr)	☐
Areas of Knowledge:	☐
Visual, Literary & Performing Arts - VLPA (10cr)	☐
Individuals & Society - I&S (10cr)	☐
Diversity-DIV (3cr) - (may overlap with VLPA/I&S)	☐

Engineering Fundamentals (4cr)	
AA 260 - Thermodynamics (4cr)	☐
Departmental Core (54cr)	
BSE 201 - Pulp, Paper and Bioproducts (3cr)	☐
BSE 202 - Pulp & Paper Field (1cr)	☐
BSE 248 - Paper Structure/Prop (4cr)	☐
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 Topics/Business Option (15cr)	
See department for list of approved courses.	☐
Free Electives (3-4cr)	
Additional coursework in any subject area not used elsewhere in degree.	☐
Total credits required for graduation: 180cr	

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.

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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.**

	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
Freshman	◆ **MATH 124 - Calculus with Analytical Geometry I**	**5**	◆ **MATH 125 - Calculus with Analytical Geometry II**	**5**	◆ **MATH 126 - Calculus with Analytical Geometry III**	5
	◆ **CHEM 142 - General Chemistry**	**5**	◆**CHEM 152 - General Chemistry**	**5**	◆**CHEM 162 - General Chemistry**	5
	VLPA/I&S	5	BSE 201 - Introduction to Pulp, Paper, and Bioproducts	3	◆ **English Composition**	5
	E-FIG; ENGR 101 & GEN ST 199	2				
	Qtr. Total:	**17**	**Qtr. Total:**	**13**	**Qtr. Total:**	**15**
Sophomore	**Autumn Quarter**	**Cr**	**Winter Quarter**	**Cr**	**Spring Quarter**	**Cr**
	MATH 307 - Differential Equations	3	MATH 308 - Matrix Algebra	3	A A 260	4
	PHYS 121 - Mechanics	5	PHYS 122 - Electromagnetism	5	PHYS 123 - Waves	5
	CHEM 237 – Organic Chemistry	4	CHEM 238 - Organic Chemistry	4	BSE 248 - Paper Properties	4
	BSE/ENGR 231 - Technical Communication for Process Engineers	3	BSE 202 - Pulp and Paper Lab and Field Studies	1	VLPA	2
			Q SCI 381 - Statistics	5		
	Qtr. Total:	**15**	**Qtr. Total:**	**18**	**Qtr. Total:**	**15**
Junior	**Autumn Quarter**	**Cr**	**Winter Quarter**	**Cr**	**Spring Quarter**	**Cr**
	BSE 406 Natural Products Chem.	5	BSE 420 - Biores. Sci/Eng I	4	BSE 421 - Biores. Sci/Eng II	4
	Engineering Topics	4	Engineering Topics	4	BSE 426 - Bioresource Lab	4
	BSE 391 - Engineering Principles of Biorefineries	5	BSE 392 - Bioresource Transport Phenomena	5	Engr. Topics/Business Option	4
					ECON 200 - Microeconomics	5
	Qtr. Total:	**14**	**Qtr. Total:**	**13**	**Qtr. Total:**	**17**
Senior	**Autumn Quarter**	**Cr**	**Winter Quarter**	**Cr**	**Spring Quarter**	**Cr**
	BSE 422 - Biores. Science/Eng III	4	BSE 480 - Bioresource Design	4	BSE 481 - Bioresource Design II	5
	BSE 430 - Paper Processes	5	BSE 436 - Papermaking Lab II	4	General Elective	5
	BSE 497 - Internship	1	VLPA	5	VLPA	3
	I&S/DIV	5			BSE 490 - Special Topics	1-5
	Qtr. Total:	**15**	**Qtr. Total:**	**13**	**Qtr. Total:**	**14-18**

◆ = Placement Requirements for July 1 placement

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.

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