

ChemE

Chemical Engineering
 Graduation Requirements
 University of Washington
<https://cheme.washington.edu>

Requirement Sheet Key:

◆ = Placement Requirements for July 1 placement;
 ● = Add'l. placement requirements for Jan. 15 placement

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)	<input type="checkbox"/>
● MATH 307 - Introduction to Differential Equations (3cr) [pr: MATH 125]	<input type="checkbox"/>
MATH 308 - Matrix Algebra with Applications (3cr) [pr: MATH 126]	<input type="checkbox"/>
MATH 309 - Linear Analysis (3cr) or IND E 315 (3cr) or STAT 390 (4cr)	<input type="checkbox"/>
Sciences (41cr)	
◆ CHEM 142, 152, 162 - General Chemistry (15cr)	<input type="checkbox"/>
CHEM 237 - Organic Chemistry I (4cr) -OR- CHEM 223 [pr: CHEM 153, CHEM 155, or CHEM 162]	<input type="checkbox"/>
CHEM 238 - Organic Chemistry I (4cr) -OR- CHEM 224 [pr: CHEM 237, CHEM 335, or CHEM 237]	<input type="checkbox"/>
CHEM 455 - Physical Chemistry I (3cr) [pr: CHEM 155 or CHEM 162; either MATH 126 or MATH 136; either PHYS 116 or PHYS 123]	<input type="checkbox"/>
◆ PHYS 121 - Mechanics (5cr) [pr: either MATH 124 or MATH 134]	<input type="checkbox"/>
● PHYS 122 - Electromagnetism (5cr) [pr: MATH 125 or MATH 134; PHYS 121]	<input type="checkbox"/>
PHYS 123 - Waves (5cr) [pr: MATH 126 or MATH 134; PHYS 122]	<input type="checkbox"/>
Engineering General Education Requirements (32cr)	
Written and Oral Communication (8cr):	<input type="checkbox"/>
◆ English Composition (5cr)	<input type="checkbox"/>
ENGR 231-Intro to Technical Communication (3cr)	<input type="checkbox"/>
Areas of Knowledge:	<input type="checkbox"/>
Visual, Literary & Performing Arts - VLPA (10cr)	<input type="checkbox"/>
Individuals & Society - I&S (10cr)	<input type="checkbox"/>
VLPA or I&S (4cr)	<input type="checkbox"/>
Diversity-DIV (3cr) - (may overlap with VLPA/I&S)	<input type="checkbox"/>

Engineering Fundamentals (4cr)	
AMATH 301 - Beginning Scientific Computing (4cr) [pr: either MATH 125, Q SCI 292, or MATH 135] -OR- CSE 142 - Computer Programming I (4cr)	<input type="checkbox"/>
Departmental Core (54cr)	
CHEM E 310 - Material Energy Balances (4cr)	<input type="checkbox"/>
CHEM E 325 - Energy & Entropy (4cr)	<input type="checkbox"/>
CHEM E 326 - Chem. Engineering Thermodynamics (4cr)	<input type="checkbox"/>
CHEM E 330 - Transport Processes I (5cr)	<input type="checkbox"/>
CHEM E 340 - Transport Processes II (4cr)	<input type="checkbox"/>
CHEM E 435 - Transport Processes III (4cr)	<input type="checkbox"/>
CHEM E 436 - Chemical Engineering Lab I (3cr)	<input type="checkbox"/>
CHEM E 437 - Chemical Engineering Lab II (3cr)	<input type="checkbox"/>
CHEM E 455 - Surface and Colloid Science Lab (3cr)	<input type="checkbox"/>
CHEM E 457 - Principles of Molecular Engineering (3cr)	<input type="checkbox"/>
CHEM E 465 - Reactor Design (4cr)	<input type="checkbox"/>
CHEM E 480 - Process Dynamics and Control (4cr)	<input type="checkbox"/>
CHEM E 485 - Process Design I (4cr)	<input type="checkbox"/>
CHEM E 486 - Process Design II (5cr)	<input type="checkbox"/>
Electives (16cr)	
See department for list of approved courses.	<input type="checkbox"/>
Free Electives (8-9cr)	
Additional coursework in any subject area not used elsewhere in degree.	<input type="checkbox"/>
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.

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 for July 1 at end of first year: **MATH 124, MATH 125, MATH 126; PHYS 121; CHEM 142; CHEM 152; CHEM 162; 5 credits of English Composition.**

Additional courses required to request placement for January 15 of second year: **MATH 307; PHYS 122.**

	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
	◆ English Composition	5	VLPA/I&S	5	◆ PHYS 121 - Mechanics	5
	E-FIG; ENGR 101 & GEN ST 199	2				
	Qtr. Total:	17	Qtr. Total:	15	Qtr. Total:	15
Sophomore	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
	● MATH 307 - Differential Equations	3	MATH 308 - Matrix Algebra	3	CHEM E 310 - Matls/Energy Balance	4
	● PHYS 122 - Electromagnetism	5	PHYS 123 - Waves	5	MATH 309 - Linear Analysis	3
	CHEM 237/223 – Organic Chemistry	4	CHEM 238/224 - Organic Chemistry	4	Free Elective	3
	VLPA/I&S	5	AMATH 301 - Beginning Scientific Computing	4	ENGR 231 - Intro to Technical Communication	3
Qtr. Total:	17	Qtr. Total:	16	Qtr. Total:	13	
Junior	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
	CHEM E 325 - Energy & Entropy	4	CHEM E 326 - CHEM E Thermodynamics	4	CHEM E 436 - CHEM E Lab I	3
	CHEM 455 - Physical Chemistry	3	CHEM E 340 - Transport Processes II	4	CHEM M 457 - Principles of Molecular Engineering	3
	CHEM 330 - Transport Processes I	5	Engineering Elective	4	Engineering Elective	4
	VLPA/I&S/DIV	5			VLPA/I&S	4
Qtr. Total:	17	Qtr. Total:	12	Qtr. Total:	14	
Senior	Autumn Quarter	Cr	Winter Quarter	Cr	Spring Quarter	Cr
	CHEM E 435 - Transport Processes III	4	CHEM E 437 - Chemical Engineering Lab II	3	CHEM E 486 - Process Design II	5
	CHEM E 455 - Surface and Colloid Science Laboratory	3	CHEM E 480 - Process Dynamics and Control	4	Engineering Elective	5
	CHEM E 465 - Reactor Design	4	CHEM E 485 - Process Design I	4	VLPA/I&S	4
	Free Elective	2	Engineering Elective	3		
Qtr. Total:	13	Qtr. Total:	14	Qtr. Total:	14	

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● = Add'l. placement requirements for Jan. 15 placement

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