This resource is for ENGRUD students who entered the UW in AUT21 or later.

ChemE

Chemical Engineering Graduation Requirements
University of Washington
http://cheme.washington.edu

Requirement Sheet Key:
◆ = Placement Requirements;
Placement: July1 at the end of the first year

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

Mathematics (24-25cr)

◆ **MATH 124, 125, 126 - Calc. w/ Analytic Geom I-III (15cr)**

MATH 207 - Intro to Differential Equations (3cr)
[pr: MATH 125]

MATH 208 - Matrix Algebra with Applications (3cr)
[pr: MATH 126]

One course from the following: IND E 315 (3cr); MATH 209 (3cr); STAT 390 (4cr)

Sciences (41cr)

◆ **CHEM 142 - General Chemistry (5cr)**

◆ **CHEM 152 - General Chemistry (5cr)**

CHEM 162 - General Chemistry (5cr)
***Strongly recommended to complete in the first year**

CHEM 237 - Organic Chemistry (4cr) OR CHEM 223 (4cr)
[pr: CHEM 153, CHEM 155, or CHEM 162]

CHEM 238 - Organic Chemistry (4cr) OR CHEM 224 (4cr)
[pr: CHEM 237, CHEM 355, or CHEM 237]

CHEM 455 - Physical Chemistry (3cr)
[CHEM 162; MATH 126; PHYS 123]

◆ **PHYS 121- Mechanics (5cr)**
[pr: MATH 124 or MATH 134]

PHYS 122 - Electromagnetism (5cr)
[pr: MATH 125 or MA; PHY 121]

PHYS 123 - Waves (5cr)
[pr: MATH 126; PHYS 122]

Engineering General Education Requirements (32cr)

Written and Oral Communication:

◆ **English Composition (5cr)**

ENGR 231 - Intro to Technical Communication (3cr)

Areas of Knowledge:

Visual, Literary & Performing Arts - VLPA (10cr)

Individuals & Society - I&S (10cr)

Additional VLPA or I&S (4cr)

Diversity - DIV (3cr) (May overlap with VLPA or I&S)

Engineering Fundamentals (4cr)

AMATH 301 - Beginning Scientific Computing (4cr)
[pr: MATH 125, Q SCI 292, or MATH 135]
OR
CSE 142 - Computing Programming I (4cr)

Departmental Core (51cr)

CHEM E 310 - Material Energy Balances (4cr)

CHEM E 325 - Energy & Entropy (4cr)

CHEM E 326 - Chem. Engineering Thermodynamics (4cr)

CHEM E 330 - Transport Processes I (5cr)

CHEM E 340 - Transport Processes II (4cr)

CHEM E 435 - Transport Processes III (4cr)

CHEM E 436 - Chemical Engineering Lab I (3cr)

CHEM E 437 - Chemical Engineering Lab II (3cr)

CHEM E 457 - Principles of Molecular Engineering (3cr)

CHEM E 465 - Reactor Design (4cr)

CHEM E 480 - Process Dynamics and Control (4cr)

CHEM E 485 - Process Design I (4cr)

CHEM E 486 - Process Design II (5cr)

Molecular and Nanoscience Engineering (3cr)

CHEM E 455 - Surface and Colloid Science Lab (3cr)
OR
CHEM E 460 - Polymer chemistry Laboratory (3cr)

Engineering Electives (16cr)

See department for list of approved courses.

Free Electives (~6-7cr)

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 207/208/209, work with the department to confirm.

Updated October 2021

This resource is for ENGRUD students who entered the UW in AUT21 or later.

ChemE

Chemical Engineering
Sample Curriculum
University of Washington
http://cheme.washington.edu

Chemical Engineering Advising
Office: 137 Benson Hall, Box 351750
Seattle, WA 98195-1750
Phone: (206) 685-1634
Email: chemeadv@uw.edu

This is a sample four-year plan for ENGRUD students that prepares them to be able to request placement at the end of their 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, MATH 125, MATH 126; CHEM 142; PHYS 121; English Composition. ENGRUD students who are interested in ChemE must complete CHEM 152 and are strongly recommended to complete CHEM 162.**

First Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
◆ **MATH 124 - Calc w Analytic Geom I**	5	◆ **MATH 125 - Calc w Analytic Geom II**	5	◆ **MATH 126 - Calc w Analytic Geom 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**

Second Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
MATH 207 - Differential Equations	3	AMATH 301 or CSE 142	4	CHEM E 310 - Materials/Energy Balance*	4
PHYS 122 - Electromagnetism	5	PHYS 123 - Waves	5	MATH 209 - Linear Analysis	3
CHEM 237/223 - Organic Chemistry I	4	CHEM 238/224 - Organic Chemistry II	4	Free Elective	3
VLPA / I&S	5	MATH 208 - Matrix Algebra	3	ENGR 231 - Intro to Technical Comm	3
Qtr. Total:	**17**	Qtr. Total:	**16**	Qtr. Total:	**13**

Third Year

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 E 330 - Transport Processes I	5	CHEM E 340 - Transport Processes II	4	CHEM E 457 - Principles of Molecular Engineering	3
CHEM 455 - Physical Chemistry	3	Engineering Elective	3	Engineering Elective	3
VLPA / I&S	4	VLPA / I&S	5	VLPA / I&S	5
Qtr. Total:	**16**	Qtr. Total:	**16**	Qtr. Total:	**14**

Fourth Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
CHEM E 435 - Transport Processes III	4	CHEM E 437 - CHEM E Lab II	3	CHEM E 486 – Process Design II	5
CHEM E 455 - Surface and Colloid Science Laboratory	3	CHEM E 480 - Proc. Dynamics & Control	4	Engineering Elective	5
CHEM E 465 - Reactor Design	4	CHEM E 485 - Process Design I	4	Free Elective	4
Free Elective	2	Engineering Elective	3		
Qtr. Total:	**13**	Qtr. Total:	**14**	Qtr. Total:	**14**

◆ = **Placement Requirements**

*CHEM E 310 is the first course in a seven-quarter sequence of core classes; MATH 207 and PHYS 122 are prerequisites and must be completed prior to enrolling in CHEM E 310.

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

Updated October 2021