This resource is for ENGRUD students who entered the UW in AUT24 or later.

ChemE

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

ENGRUD Requirement Sheet – Key:
◆ = Placement Requirements;
Placement: July 1 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] OR AMATH 351

MATH 208 - Matrix Algebra with Applications (3cr)
[pr: MATH 126] OR AMATH 352

One course from the following: IND E 315 (3cr); MATH 209 (3cr); STAT 390 (4cr); MATH 224 (3cr); AMATH 353 (3cr)

Sciences (41cr)

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

◆ **CHEM 152 - General Chemistry (5cr)** [pr: CHEM 142]

CHEM 162 - General Chemistry (5cr) [pr: CHEM 152]
*Strongly recommended to complete in the first year

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

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

CHEM E 456 - Quantum Mechanics OR CHEM 455 (3cr)
[pr: CHEM 162; MATH 207, Math 208; PHYS 123]

PHYS 121- Mechanics (5cr)
[pr: MATH 124]

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

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

General Education Requirements (29-41cr)

Written and Oral Communication:

◆ **English Composition (5cr)**

Writing (7cr) - met by coursework in the major

Areas of Inquiry:

Arts & Humanities - A&H (10cr)
Social Sciences - SSc (10cr)
Additional A&H or SSc (4cr)

Diversity - DIV (5cr) (may overlap with Areas of Inquiry or W)

Departmental Core (54cr)

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 375 - Chemical Engineering Computing (3cr)
CHEM E 435 - Transport Processes III (4cr)
CHEM E 436 - Chemical Engineering Lab I (3cr) (W)
CHEM E 437 - Chemical Engineering Lab II (3cr) (W)
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)

Visit department website for list of approved courses

Free Electives (to reach 180 credits total credits)

Additional coursework in any subject area not used elsewhere in degree.

Total credits required for graduation: 180cr

Enrollment and Continuation Requirements: *Prior to the start of the first Spring Quarter following entrance into the ChemE major students must complete CHEM 162, PHYS 122, MATH 207. Students must complete CHEM 237, CHEM 238, PHYS 123, MATH 208, CHEM E 310, CHEM E 375 or equivalents prior to the start of the following autumn quarter.**

Honors or accelerated sequences of chemistry, math and physics will satisfy the placement requirements.

Updated September 2024

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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 & GEN ST 199; 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
◆ **E-FIG: ENGR 101 & GEN ST 199**	2	◆ **English Composition**	5	◆ **PHYS 121 - Mechanics**	5
A&H / SSc	3				
Qtr. Total:	**15**	Qtr. Total:	**15**	Qtr.Total:	**15**

Second Year

Autumn Quarter	cr	Winter Quarter	cr	Spring Quarter	cr
MATH 207 - Diff. Equations	3	PHYS 123 - Waves	5	CHEM E 310 - Mat./Energy Balance*	4
PHYS 122 - Electromagnetism	5	CHEM 238/224 - Organic Chem II	4	CHEM E 375 - ChemE Computing	3
CHEM 237/223 - Organic Chem I	4	MATH 208 - Matrix Algebra	3	Math Elective	3
A&H / SSc / DIV	5	Free Elective	4	Free Elective	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 - ChemE Thermodynamics	4	CHEM E 436 - ChemE 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 E 456 - Quantum Mechanics	3	Engineering Elective	3	Engineering Elective	3
A&H / SSc	4	A&H / SSc	5	A&H / SSc	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 Requirement**

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