CHEMICAL ENGINEERING

2024/2025
Four-Year Academic Plan

University of Idaho
College of Engineering

Courses in italics are prerequisites **Courses in bold are co-requisites**

*A grade of C or better is required before registration is permitted in upper-division courses. ** Passing grade required.
See course catalog for complete degree requirements and additional information at uidaho.edu/registrar/classes/catalogs. Updated 3/13/2024

FRESHMAN	FALL		SPRING		
*CHEM 111	General Chemistry I *C or better Math 170; sufficient test scores or permission*	3	**CHE 123	Computations in Chemical Engineering ***MATH 143, MATH 170 or higher***	2
CHEM 111 L	General Chemistry 1 Lab	1	*CHEM 112	General Chemistry II *CHEM 111*	4
**ENGL 102	College Writing and Rhetoric *English 101 or sufficient test scores*	3	CHEM 112 L	General Chemistry II Lab	1
ENGR 123	First Year Engineering	2	*MATH 175	Calculus II *C or better in Math 170*	4
ELECTIVE	Humanities/Social Science-American Diversity	3	**PHYS 211	Engineering Physics ***MATH 170***	3
*MATH 170	Calculus I *C or better in Math 143 and 144 or sufficient test scores*	4	PHYS 211 L	Engineering Physics Lab	1
	Total Credits	**16**		**Total Credits**	**15**

SOPHOMORE	FALL		SPRING		
**CHE 220	Programming for Chemical Engineers *MATH 170, CHEM 111 & CHEM 112 or permission*	3	*CHE 223	Material and Energy Balances *CHEM 112, CHEM 112L, MATH 175*	3
CHEM 277	Organic Chemistry *CHEM 112*	3	CHEM 372	Organic Chemistry II *CHEM 277/278*	3
CHEM 278	Organic Chemistry Lab	1	CHEM 374	Organic Chemistry II Lab	1
*ENGR 210	Engineering Statics *MATH 170*	3	*ENGR 320	Engineering Thermodynamics/Heat Transfer *(ENGR 201 & MATH 310 recommended)*	3
*MATH 275	Calculus III *MATH 175*	3	*ENGR 335	Engineering Fluid Mechanics *ENGR 210, MATH 275*	3
PHYS 212	Engineering Physics II (no lab) *PHYS 211, **MATH 175***	3	*MATH 310	Ordinary Differential Equations *MATH 175 (MATH 275 recommended)*	3
	Total Credits	**16**		**Total Credits**	**16**

JUNIOR	FALL		SPRING		
CHE 326	Chemical Engineering Thermodynamics *CHE 223, ENGR 320, ENGR 335, Math 310,* **CHEM 305**	3	CHE 330	Separation Processes I *CHE 326, CHEM 305*	3
CHE 340	Transport and Rate Processes I *ENGR 335, MATH 310, and CHE 223 or MSE 201*	4	CHE 341	Transport and Rate Processes II *CHE 340*	4
CHEM 305 & CHEM 307	Physical Chemistry/Physical Chemistry Lab *CHEM 112, MATH 275*	4	CHE 423	Reactor Kinetics and Design *CHE 223, MATH 310, CHEM 305*	3
ELECTIVE	Humanities/Social Science-International Elec.	3	ELECTIVE	Math Elective 300 or higher	3
ELECTIVE	Economics 201 or Economics 202	3	ELECTIVE	Communications Elective *Fulfills U of I General Degree Requirements (J-3)*	3
	Total Credits	**17**		**Total Credits**	**16**

SENIOR	FALL		SPRING		
CHE 433	Chemical Engineering Lab I *CHE 330, CHE 341, CHE 423*	1	CHE 434	Chemical Engineering Lab II *CHE 330, CHE 341, CHE 423*	1
CHE 444	Process Analysis & Control *CHE 223 and MATH 310 recommended*	3	CHE 454	Process Analysis and Design II *CHE 453*	3
CHE 453	Process Analysis & Design I *CHE 330, CHE 341, and CHE 423*	3	ELECTIVE	Upper Division CHE Elective *May not include 398, 498 or 598*	3
CHE 491	Senior Seminar *Senior Stanidng*	1	ELECTIVE	Technical Elective 300 or higher *May not include 398, 498 or 598*	3
ELECTIVE	CHE/BE Elective 390 or higher *May not include 398, 498 or 598*	3	ELECTIVE	Humanities Elective	3
ELECTIVE	Humanities Elective	3	ELECTIVE	Social Science Elective	3
ELECTIVE	Technical Elective 300 or higher *May not include 398, 498 or 598*	3			
	Total Credits	**17**		**Total Credits**	**16**

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CHEMICAL ENGINEERING

Design efficient chemical processes to build a better world around you. Decrease pollutants, purify water, end disease and poverty, manufacture better pharmaceuticals, refine chemicals, process food, and refine oil and other petroleum products.

ABOUT YOUR DEGREE PATH

Chemical Engineering majors build a strong foundation in chemistry, math, and physics courses during heir first two years. Upper division courses will teach you how to apply these principles to engineering applications and prepare you to design your own solutions to many of the world's chemical, biological and material challenges.

Chemical engineering jobs are in high demand. There is a variety of work available, including in energy resources, environmental protection, biotechnology, medicine, textiles, food products, agricultural products, combustion processes, electronic materials, pulp and paper, chemical manufacturing, oil and gasoline, and more.

MATCH YOUR INTERESTS

- Environmental Protection and Natural Materials
- Water Treatment
- Medicine and Pharmaceuticals
- Energy Resources
- Aerospace
- Agricultural Products
- Computer Chips
- Electricity and Conductivity
- Nuclear Materials
- Polymers and Plastics
- Food and Chemical Processing
- Petroleum
- Magnetics
- Pulp and Paper
- Packaging and Formulation

YOUR DEGREE IS ACCREDITED

Our undergraduate Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

DEPARTMENT OF CHEMICAL & BIOLOGICAL ENGINEERING

208-885-6182 Engineering Physics Bldg. 419 chembioengr@uidaho.edu uidaho.edu/engr/departments/chbe

Rev: 03/15/2024

2024-28 Chemical Engineering Course Sequence

Semester Credits

Senior

1 S CHE 434	3 S CHE 454 g	3 FS UPDV T. Elect	3 FS CHE Elect	3 FS HUM SS*, # e/f	3 FS INT# f	13-16 Cr.
1 F CHE 433	3 F CHE 444	3 F CHE 453	1 F CHE 491[5] g	3 FS ChBE Elect (390+)	3 FS UPDV T. Elect	3 FS AM DIV# f	14-17 Cr.

Junior

3 S CHE 330	4 S CHE 341	3 S CHE 423	3 FS COMM Elect b	3 FS Math Elect	16 Cr.
3 F CHE 326	4 F CHE 340	3/1 FS CHEM 305/7 c	3 FS ECON 20X[4] e	3 FS HUM SS*, # e/f	17 Cr.

Some technical electives are offered only every other year and may have prerequisites. Work with your advisor to plan ahead for those courses.

Junior Certification[3] is required to take upper division CHE classes

Sophomore

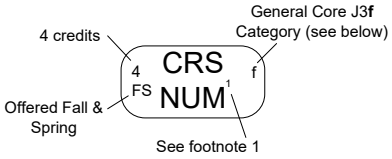
3 FS MATH 310[2,3]	3 S CHE 223[2,3]	3 S ENGR 320[2,3]	3 FS ENGR 335[2,3]	3/1 S CHEM 372/4	16 Cr.
3 FS MATH 275[2,3] d	3 F CHE 220[3]	3 FS PHYS 212[3] c	3 FS ENGR 210[2,3]	3/1 FS CHEM 277/8 c	16 Cr.

Freshman

4 FS MATH 175[2,3] d	2 S CHE 123[3]	3/1 FS PHYS 211[3]/L c	4/1 FS CHEM 112/L[2,3] c		15 Cr.
4 FS MATH 170[2,3] d	2 FS ENGR 123[1]	3 FS ENGL 102[3] a	3/1 FS CHEM 111/L[2,3] c	3 FS HUM SS*, # e/f	16 Cr.
Math 143[2] & Concurrent Math 144, or see placement[0]		Engl 101 or see placement[0]	{Chem 101 or Math 143 or 170}[2] or see placement[0]		

ENTER

Ask your advisor about dual listed HUM/SS classes that also counts as INT or AM DIV.



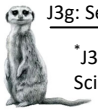
Footnote:

[0] See http://www.uidaho.edu/registrar/registration/placement
[1] Open to first year students only
[2] Must have grade of C or better
[3] Must pass for Junior Certification
[4] ECON 201 or ECON 202. Counts as SS
[5] Must have senior status to enroll

→ Prerequisite
--→ Can be taken concurrently
···→ Recommended (not required)

General Core (≥ 36 credits) (www.uidaho.edu/academics/general-education for details)

J3a: Written Comm. (3-6) J3b: Oral Comm. (2-3) J3c: Science (8) J3d: Math (3)
J3e:Hum/SS(12*) J3f#: One course and Am. Diversity + One course in International
J3g: Senior Experience(1 class)



*J3e: Select 6 Credits of Humanities **from 2 different disciplines** and 6 credits of Social Sciences also **from 2 different disciplines**.

#J3f Core may be satisfied by taking dual listed J3e (Humanities and Social Sciences) courses and/or by study abroad.