

# CHEMICAL ENGINEERING (B.S.CH.E.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
CHE 110	Introduction to Chemical Engineering	1
CHE 123	Computations in Chemical Engineering	2
CHE 210	Integrated Chemical Engineering Fundamentals	1
CHE 223	Material and Energy Balances	3
CHE 326	Chemical Engineering Thermodynamics	3
CHE 330	Separation Processes I	3
CHE 340	Transport and Rate Processes I	4
CHE 341	Transport and Rate Processes II	4
CHE 423	Reactor Kinetics and Design	3
CHE 433	Chemical Engineering Lab I	1
CHE 434	Chemical Engineering Lab II	1
CHE 444	Process Analysis and Control	3
CHE 445	Digital Process Control	3
CHE 453	Process Analysis & Design I	3
CHE 454	Process Analysis and Design II	3
CHE 491	Seminar	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	3
CHEM 112L	General Chemistry II Laboratory	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
ENGR 210	Engineering Statics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3
Select one Chemical or Material Science Engineering Technical Elective course numbered 390 or greater		3
Select one Computer Science Elective in a programming language		3
Select one Economics Elective		3
Select three Humanities and Social Science Elective courses:		9
Select one Communications Elective course		2
Select one Mathematics Elective numbered 300 or greater <sup>1</sup>		3

Select 6 credits of Technical Electives in Math, Science, or Engineering numbered 300 or greater<sup>2</sup> 6

Total Hours 121

<sup>1</sup> Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.

<sup>2</sup> Technical Electives in Math, Science, or Engineering: must be numbered 300 or greater.

To be enrolled in upper-division CHE courses, a student majoring in chemical engineering must earn a grade of C or better in each of the following courses:

Code	Title	Hours
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHE 223	Material and Energy Balances	3
ENGR 210	Engineering Statics	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3

Students transferring CHE 223 or its equivalent from a university without an ABET accredited chemical engineering program must pass a test on the subject matter of this course before enrolling in upper-division CHE courses.

In addition, a passing grade is required in each of the following courses before enrolling in upper-division CHE courses:

Code	Title	Hours
CHE 123	Computations in Chemical Engineering	2
Computer Science Elective		3
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

A student majoring in chemical engineering may not register for upper-division CHE courses after accumulating more than four grades of D or F in UI mathematics, science, or engineering courses. Included in this number are multiple repeats in a single class or single repeats in multiple classes. A warning will be issued in writing to students who have accumulated two grades of D or F used to satisfy curricular requirements.

A GPA in CHE designated courses of at least 2.0 is required to graduate

**Courses to total 128 credits for this degree, not counting ENGL 101, any 398 (Internship), any 498 (Internship), any 598 (Internship), or mathematics courses numbered lower than MATH 170, and other courses that might be required to remove deficiencies.**

1. The student will apply aspects of engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

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2. The student will identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
3. The student will develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. The student will communicate effectively with a range of audiences.