

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 123	Computations in Chemical Engineering	2
CHE 220	Programming for Chemical Engineers	3
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 453	Process Analysis & Design I	3
CHE 454	Process Analysis and Design II	3
CHE 491	Senior Seminar	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
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 123	First Year Engineering	2
ENGR 210	Engineering Statics	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 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
Select one Chemical Engineering Technical Elective course numbered 390 or greater		3
Select one Chemical (CHE), Biological (BE) or Material Science Engineering (MSE) Technical Elective course numbered 390 or greater		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 ¹	3
Select 6 credits of Technical Electives in Math, Science, or Engineering numbered 300 or greater ²	6
Total Hours	119

1

Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.

2

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
CHE 223	Material and Energy Balances	3
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
ENGR 210	Engineering Statics	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

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
CHE 220	Programming for Chemical Engineers	3
ENGL 102	Writing and Rhetoric II	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

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

Courses to total 125 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.

Four-Year Plan

Fall Term 1	Hours	
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
ENGR 123	First Year Engineering	2
MATH 170	Calculus I	4

Humanistic and Artistic Ways of Knowing Course	3
Hours	16
Spring Term 1	
CHE 123 Computations in Chemical Engineering	2
CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
MATH 175 Calculus II	4
PHYS 211 Engineering Physics I	3
PHYS 211L Laboratory Physics I	1
Hours	15
Fall Term 2	
CHE 220 Programming for Chemical Engineers	3
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
ENGR 210 Engineering Statics	3
MATH 275 Calculus III	3
PHYS 212 Engineering Physics II	3
Hours	16
Spring Term 2	
CHE 223 Material and Energy Balances	3
CHEM 372 Organic Chemistry II	3
CHEM 374 Organic Chemistry II: Lab	1
ENGR 320 Engineering Thermodynamics and Heat Transfer	3
ENGR 335 Engineering Fluid Mechanics	3
MATH 310 Ordinary Differential Equations	3
Hours	16
Fall Term 3	
CHE 326 Chemical Engineering Thermodynamics	3
CHE 340 Transport and Rate Processes I	4
CHEM 305 Physical Chemistry	3
CHEM 307 Physical Chemistry Lab	1
ECON 201 or ECON 202	3
Hours	14
Spring Term 3	
CHE 330 Separation Processes I	3
CHE 341 Transport and Rate Processes II	4
CHE 423 Reactor Kinetics and Design	3
UPDV Mathematics Elective Course	3
Oral Communication Course	3
American Diversity Course	3
Hours	19
Fall Term 4	
CHE 433 Chemical Engineering Lab I	1
CHE 444 Process Analysis and Control	3
CHE 453 Process Analysis & Design I	3
CHE 491 Senior Seminar	1
UPDV Technical Math, Sci, or Engr Elective Course	3
390 or higher CHE or BE, Elective Course	3
Social & Behavioral Ways of Knowing Elective	3
Hours	17
Spring Term 4	
CHE 434 Chemical Engineering Lab II	1
CHE 454 Process Analysis and Design II	3
390 or higher CHE Tech Elective Course	3
UPDV Math, Sci, or Engr Tech Elective Course	3
Humanistic Ways of Knowing Course	3
International Course	3
Hours	16
Total Hours	129

Five-Year Plan

Fall Term 1	Hours	15
ENGL 101 Writing and Rhetoric I	3	
ENGR 123 First Year Engineering	2	
MATH 143 College Algebra	3	
MATH 144 Precalculus II: Trigonometry	1	
Humanistic and Artistic Ways of Knowing Course	3	
Oral Communication Course	3	
Hours	15	
Spring Term 1		
CHE 123 Computations in Chemical Engineering	2	
ENGL 102 Writing and Rhetoric II	3	
MATH 170 Calculus I	4	
ECON 201 OR ECON 202	3	
International Course	3	
Hours	15	
Fall Term 2		
CHEM 111 General Chemistry I	3	
CHEM 111L General Chemistry I Laboratory	1	
ENGR 210 Engineering Statics	3	
Humanistic and Artistic Ways of Knowing Course	3	
Social and Behavioral Ways of Knowing Course	3	
Hours	13	
Spring Term 2		
CHEM 112 General Chemistry II	4	
CHEM 112L General Chemistry II Laboratory	1	
MATH 175 Calculus II	4	
PHYS 211 Engineering Physics I	3	
PHYS 211L Laboratory Physics I	1	
Hours	13	
Fall Term 3		
CHE 220 Programming for Chemical Engineers	3	
CHEM 277 Organic Chemistry I	3	
CHEM 278 Organic Chemistry I: Lab	1	
ENGR 320 Engineering Thermodynamics and Heat Transfer	3	
MATH 275 Calculus III	3	
PHYS 212 Engineering Physics II	3	
Hours	16	
Spring Term 3		
CHE 223 Material and Energy Balances	3	
CHEM 372 Organic Chemistry II	3	
CHEM 374 Organic Chemistry II: Lab	1	
ENGR 335 Engineering Fluid Mechanics	3	
MATH 310 Ordinary Differential Equations	3	
Hours	13	
Fall Term 4		
CHE 326 Chemical Engineering Thermodynamics	3	
CHE 340 Transport and Rate Processes I	4	
CHEM 305 Physical Chemistry	3	
CHEM 307 Physical Chemistry Lab	1	
Hours	11	
Spring Term 4		
CHE 330 Separation Processes I	3	
CHE 341 Transport and Rate Processes II	4	
CHE 423 Reactor Kinetics and Design	3	
UPDV Mathematics Elective Course	3	
Hours	13	
Fall Term 5		
CHE 433 Chemical Engineering Lab I	1	
CHE 444 Process Analysis and Control	3	
CHE 453 Process Analysis & Design I	3	

CHE 491	Senior Seminar	1
390 or higher CHE or BE, Major Elective Course		3
UPDV Math, Sci, or ENGR Technical Elective Course		3
Hours		14
Spring Term 5		
CHE 434	Chemical Engineering Lab II	1
CHE 454	Process Analysis and Design II	3
390 or higher CHE Elective Course		3
UPDV Math, Sci, or ENGR Technical Elective Course		3
American Diversity Course		3
Hours		13
Total Hours		136

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

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.
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.