

CHEMICAL ENGINEERING

SOLUTIONS FOR A BETTER WORLD

What can you do as a Chemical Engineer?

Chemical engineering combines the three basic physical sciences and combines them with mathematics and the discipline of engineering. This creates a unique versatility to solve problems and increase efficiency in a very broad spectrum of fields. One of the most attractive aspects of a chemical engineering future is the variety of work available to you making it one of the highest areas of demand.

The American Institute of Chemical Engineers (AIChE) has suggested the following definition of a chemical engineer: Chemical Engineers use science and mathematics, especially chemistry, biochemistry, applied mathematics and engineering principles, to take laboratory or conceptual ideas and turn them into value added products in a cost effective, safe (including environmental) and cutting edge process. From the development of smaller, faster computer chips to innovations in recycling, treating disease, cleaning water, and generating energy, the production to artificial-organ development.

Chemical engineers are employed by both governmental agencies and private companies in a variety of fields including pulp & paper, chemical manufacturing, oil & gasoline, energy production-including nuclear, biotechnology, medicine, law, electronic materials, pharmaceuticals, polymers, materials & properties, textiles, food products, combustion processes, agricultural products and environmental protection.



Undergraduate Program

The Bachelor of Science (B.S.) degree in chemical engineering from the University of Idaho prepares you to play a crucial role in the production of high-demand products. Our faculty are recognized world-wide for their excellence in teaching and research. Their commitment to excellence provides you with the very best opportunities for realizing your own academic pursuits.

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

Most chemical engineering students earn their undergraduate degree in four years however, some students like the flexibility that a five-year plan provides.

College of Engineering

Department of Chemical & Materials Engineering
208.885.7572 or 88-88-UIDAHO ext. 7572
gailb@uidaho.edu

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Academic Plan for 2012/13

FRESHMAN - FALL			FRESHMAN - SPRING		
CHE 110	Introduction to Chemical Engineering	1	CHEM 112*	Principles of Chemistry II	5
CHE 123	Computations in Chemical Engineering	2	MATH 175	Analytic Geometry & Calculus II	4
CHEM 111*	Principles of Chemistry I	4	PHYS 211	Engineering Physics I (no lab)	3
ENGL 102	College Writing & Rhetoric	3	ELECTIVE	Computer Science Elective	3
MATH 170	Analytic Geometry & Calculus I	4	ELECTIVE	Humanities/Social Science	3
ISEM 101	Integrated Seminar	3		/International Elective	
	Total Credits	17		Total Credits	18
SOPHOMORE - FALL			SOPHOMORE- SPRING		
CHEM 277	Organic Chemistry I	3	CHEM 372	Organic Chemistry II	3
CHEM 278	Organic Chemistry I Lab	1	CHEM 374	Organic Chemistry II Lab	1
ENGR 210*	Engineering Statics	3	CHE 223*	Material & Energy Balances	3
MATH 275*	Analytic Geometry & Calculus III	3	ENGR 320*	Engr. Thermodynamics & Heat Transfer	3
PHYS 212	Engineering Physics II	3	ENGR 335*	Engineering Fluid Mechanics	3
ELECTIVE	Economics Elective	3	MATH 310*	Ordinary Differential Equations	3
	Total Credits	16		Total Credits	16
JUNIOR - FALL			JUNIOR - SPRING		
CHEM 305	Physical Chemistry	3	CHE 330	Separation Processes I	3
CHEM 307	Physical Chemistry Lab	1	CHE 341	Transport & Rate Processes II	4
CHE 326	Chemical Engineering Thermodynamics	3	CHE 423	Reactor Kinetics & Design	3
CHE 340	Transport and Rate Processes I	4	ELECTIVE	Communication Elective	2-3
ENGR 240	Introduction to Electrical Circuits	3	ELECTIVE	Chemical/Bioscience Elective	4
MATH	Mathematics Elective	3		Total Credits	16-17
	Total Credits	17			
SENIOR - FALL			SENIOR- SPRING		
CHE 433	Chemical Engineering Lab I	1	CHE 445	Digital Process Control	3
CHE 444	Process Analysis & Control	3	CHE 434	Chemical Engineering Lab II	1
CHE 453	Process Analysis & Design I	3	CHE 454	Process Analysis & Design II (Capstone Core)	3
CHE 491	Seminar	1	ELECTIVE	Technical Elective	3
ELECTIVE	Upper Division Humanities/Social Science	3	ELECTIVE	Technical Elective	3
ELECTIVE	Upper Division Chemical or Materials Engineering Elective	3	ELECTIVE	Humanities/Social Science	3
	Total Credits	14		Total Credits	16

***A grade of C or better is required in courses before registration is permitted in upper division chemical engineering courses.**

- See course catalog for complete degree requirements and additional information.