

BACHELOR OF SCIENCE IN CHEMICAL & BIOMOLECULAR ENGINEERING



WHAT IS CHEMICAL ENGINEERING?

Chemical engineers are taught to link chemistry and engineering in order to produce substances or products that improve people's lives. Chemical engineers develop techniques and processes to convert raw materials into products such as plastics, food, pharmaceuticals, petroleum products and other consumer goods while maximizing efficiency and minimizing risk and environmental impact.

CAREERS IN CHEMICAL ENGINEERING

Chemical engineering careers span chemicals manufacturing, refining, advanced materials, resource management, medicine, pharmaceuticals development and production, pollution control and environmental remediation.

Career opportunities in chemical engineering are excellent – especially in the city of Houston, the Energy Capital of the World. A 2018 salary survey produced by Payscale.com found that new chemical engineering graduates earned an average starting salary of \$68,360.

Career opportunities for chemical engineers in Houston tend to be better than the national average. Almost half of Houston's economy is driven by energy, with more than 3,600 energy-related companies based in Houston. All of the major oil and gas companies have operations in Houston, and the region boasts almost 40,000 jobs just in oil and gas extraction, representing one-third of such positions worldwide!

WHY EARN YOUR CHEMICAL & BIOMOLECULAR ENGINEERING DEGREE AT THE UNIVERSITY OF HOUSTON?

ACADEMICS

The chemical and biomolecular engineering department at the University of Houston Cullen College of Engineering is one of the top-ranked chemical engineering programs in the nation. Chemical engineering undergraduates are prepared to meet or exceed the expectations of employers, particularly in the energy and chemical industries. Many graduates of the chemical engineering program are currently employed in leading positions in industry, academia and government across the Houston region and around the world.

Conveniently located in the Energy Capital of the World, students have direct access to internships and full-time positions throughout the region and are strongly encouraged to pursue professional opportunities while they are still in school.

Learn more at www.chee.uh.edu/undergraduate/degree

RESEARCH

At the University of Houston Cullen College of Engineering, there's no shortage of research for chemical engineers. The University of Houston is home to some of the world's most advanced energy research, touching on areas such as sustainability, alternatives, grid power, solar energy, wind energy and superconductivity. Moreover, the university has a 74-acre campus, called Energy Research Park, dedicated solely to bringing industry and academia together to conduct energy research in clean engines and fuels, wind energy, superconductivity and petroleum engineering. All undergraduate students in the chemical engineering department are strongly encouraged to get hands-on research experience in one of the many faculty research groups, labs or centers on campus while they are pursuing their degrees.

Learn more at www.chee.uh.edu/research/overview

SCHOLARSHIPS

Departmental scholarships are offered from the Lubrizol Foundation, Bayer, BP America, Chevron, ConocoPhillips, ExxonMobil, Founders/Worley, Scheller, Tiller and Fleischer Scholarship Funds. Merit-based scholarships are also awarded by the Cullen College of Engineering.

Scholarships are also offered by the University of Houston Office of Scholarships and Financial Aid. Additionally, the university's co-op program allows students to receive career training while financing their education.

Learn more at www.chee.uh.edu/undergraduate/scholarships/chbe-department

STUDENT ORGANIZATIONS

Students are encouraged to join academic and professional organizations to build leadership, communication and networking skills. Members of student organizations receive career guidance from engineering professionals and participate in activities that promote engineering.

Chemical engineering organizations include the American Institute of Chemical Engineers (AIChE) and the Society of Petroleum Engineers (SPE).

Learn more at www.chee.uh.edu/people/student_organizations

ChBE FAST FACTS

548 Total Undergrad Students in Department

139 Total Faculty in Cullen College

19 Total Faculty in ChBE Department

\$68,360 Average Starting Salary with B.S. in Chemical Engineering

22:1 Student-to-Faculty Ratio Across the University

YEAR 1

SEMESTER 1			SEMESTER 2			Total
ENGI 1100	Introduction to Engineering	1	CHEM 1332	Fundamentals of Chemistry II	3	
CHEM 1331	Fundamentals of Chemistry	3	CHEM 1112	Fundamentals of Chemistry Lab II	1	
CHEM 1111	Fundamentals of Chemistry Lab	1	ENGI 1331	Computing for Engineers	3	
ENGL 1303	First Year Writing I	3	ENGL 1304	First Year Writing II	3	
MATH 1431	Calculus I	4	MATH 1432	Calculus II	4	
POLS 1336	U.S. and Texas Constitutions & Politics	3	PHYS 1321	University Physics I	3	
		Semester Hours 15			Semester Hours 17	32



YEAR 2

SEMESTER 1			SEMESTER 2			Total
CHEE 2331	Chemical Processes	3	CHEE 2332	Thermodynamics I	3	
CHEM 3331	Organic Chemistry I	3	CHEE 3300	Materials Science and Engineering	3	
MATH 2433	Calculus III	4	CHEM 3221	Organic Chemistry Lab	2	
POLS 1337	U.S. Government	3	CHEM 3332	Organic Chemistry II	3	
HIST 1377	The United States to 1877	3	ENGI 2304	Technical Communications	3	
			CHEE 3321	Analytical Methods for Chem Engr	3	
		Semester Hours 16			Semester Hours 17	33



YEAR 3

SEMESTER 1			SEMESTER 2			Total
CHEE 3333	Thermodynamics II	3	CHEE 3367	Process Modeling and Control	3	
CHEE 3334	Statistical/Numerical Techniques	3	CHEE 3369	Chemical Engineering Transport Processes	3	
CHEE 3363	Fluid Mechanics	3	CHEE 3462	Unit Operations	4	
PHYS 1322	University Physics II	3	CHEE 3466	Biological and Physical Chemistry	4	
ECON 2304	Microeconomic Principles	3				
CHEM Elect	Chemistry Elective	3				
		Semester Hours 18			Semester Hours 14	32



YEAR 4

SEMESTER 1			SEMESTER 2			Total
CHEE 4321	Chemical Engineering Design I	3	Science Elect	Advanced Science Elective	3	
CHEE 4361	Chemical Engineering Practices	3	CHEE 4322	Chemical Engr Design II	3	
CHEE 4367	Chemical Reaction Engr	3	CHEE 4366	Biomolecular Engr Fundamentals	3	
HIST 1378/79	The United States Since 1877	3	CORE	Language, Philosophy & Culture	3	
CORE	Creative Arts	3	TECH ELEC	Technical Elective	3	
TECH ELEC	Technical Elective	3				
		Semester Hours 18			Semester Hours 15	33
					TOTAL SEMESTER HOURS 130	

*Students should meet with their academic advisor to formulate their own plan. Course offerings are subject to change.

FOR MORE INFORMATION

UH Department of Chemical and Biomolecular Engineering: www.chee.uh.edu
Undergraduate Program: www.chee.uh.edu/undergraduate/overview | Email: vellison@central.uh.edu

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