Chemical and Biochemical Engineering at Rutgers

Chemical and biochemical engineers leave their imprint on a broad array of industries applying principles of chemistry, biology, and physics in a wide range of fields including alternative energy, environmental solutions, pharmaceuticals, healthcare, agriculture, food products, automotive, consumer goods, chemicals, polymers, and petroleum. Their work can range from conducting cutting-edge pharmaceutical research or discovering how to extend the shelf life of antibiotics to being part of a creative team at a food company concocting a new candy bar. Biochemical engineering involves similar training, but focuses on living organisms.

Rutgers Chemical and Biochemical Engineering program combines classroom and laboratory learning with research and many opportunities for innovative, practical training. Internships give students the opportunity to gain work experience in industry and to begin to make professional networking connections.

“Although you learn a great deal in the classroom, the most valuable lessons come from outside the class. My research and leadership experience was the best part of my four years here.”

Laura Norkute

WHAT CAN YOU DO WITH A CBE DEGREE?

Chemical manufacturing
Petrochemicals
 Fuels and alternative fuels
Pharmaceuticals
Biotechnology and healthcare
Food and beverage
Design and construction of chemical plants
Environmental health and safety industries

For more information, visit cbe.rutgers.edu
Hands-On Experience

Students learn how to learn. A solid understanding of fundamental principles and good problem-solving skills, prepare students to apply knowledge as they’re exposed to new information and technology.

Internships in industry-relevant disciplines provide professional experience.

Research Opportunities

Research facilities are among the finest in the world and include instrumentation and equipment for conducting advanced research in:

- Bioengineering and biotechnology
- Polymer science and engineering
- Process systems engineering
- Catalysis and reaction engineering
- Pharmaceutical engineering
- Nanomaterials and nanotechnology
- Computational molecular design

Program Highlights

The undergraduate program provides students with the skills and tools to become innovative, competent, and contributing engineers in the chemical and biochemical industries. Students take courses in mathematics, science, and engineering gaining the ability to design and conduct experiments, analyze and interpret data, and identify, formulate, and solve engineering problems. Students also learn to function in multidisciplinary teams, understand professional and ethical responsibility, and recognize the importance of engaging in lifelong learning.

Biochemical Engineering

The biochemical option is a supplement to the chemical engineering course and offers students a deeper focus related to biological systems of living organisms. Biochemical engineers apply their skills in the food, agriculture, pharmaceutical, biotechnology, and environmental industries. Many students also use this option as a prelude to medical or dental school.

Special Problems Research

CBE students work individually or under the guidance of a faculty adviser on a unique problem in a specific area of chemical or biochemical engineering. Students are encouraged to pursue research across disciplines, where applicable, and gain hands-on lab experience while earning general and/or technical elective credits.

Design Project

As a final project during senior year, students apply their knowledge of chemical engineering fundamentals to design chemical and biochemical plants through rigorous technical and engineering analysis and economic evaluation. Starting from identifications of marketable products, students proceed to develop ideas, select workable methods, and then design the best and most economical processes for both upstream and downstream processing to produce the final products.

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