Chemical & Biochemical Engineering
AT RUTGERS

Do you want to develop drugs and new systems for their delivery— that could target everything from cancer to cystic fibrosis? Or are you interested in devising alternatives to fossil fuels? Perhaps you see yourself as a member of a company creative team that develops new food products or cosmetics. As a chemical engineer, you will impact any number of industries by applying principles of biology, chemistry, math, and physics to a wide range of fields.

The Chemical and Biochemical Engineering program combines classroom and laboratory learning with hands-on practical and pre-professional training through numerous research and internship opportunities.

Our highly regard faculty members are engaged in cutting-edge research in the areas of pharmaceutical science and technology and life sciences engineering. Special areas of focus include biotechnology, biomolecular engineering, and tissue engineering; the design, manufacture, and applications of nanostructured materials; and energy and sustainability.

We maintain close ties with industry leaders—such as DuPont, ExxonMobil, L’Oréal, and Merck—that support CBE programs with research and on-site training opportunities.

PROFESSIONAL OPPORTUNITIES
Engineer alternative fuels
Engineer new biotechnologies
Manufacture chemicals
Design and construct chemical plants
Create new consumer goods
Improve environmental health and safety
Develop new foods and beverages
Engineer new pharmaceuticals
Engineer waste management systems

THE FUTURE IS NOW
Undergraduate Daryll Munoz was among the contributing researchers on two published papers, working alongside Prof. Fuat Celik on catalysts for producing hydrogen gas that can be used as an emissions-free source of energy for vehicles.

DEGREES OFFERED AND CURRICULAR OPTIONS
BS Chemical Engineering
Option: Biochemical Engineering
BS/BA Dual Degree
BS/MS Five-year Dual Degree
BS/ME Five-year Dual Degree
BS/MBA Five-year Dual Degree
MBS Chemical Engineering
ME Pharmaceutical Engineering
PhD Chemical Engineering

“When I came to Rutgers, I had no idea what to major in. I was attracted to CBE because it’s a major with a lot of options and opportunities in a lot of industries. It’s a good fit for me.”

Tiffany Yang

For more information, visit cbe.rutgers.edu
Chemical & Biochemical Engineering at Rutgers

PROGRAM HIGHLIGHTS
We prepare engineers able to take the lead in devising innovative and practical solutions to biochemical and chemical problems across a range of industries.

Courses in math, science, and engineering teach students to design and conduct experiments; analyze and interpret data; and identify and solve engineering problems. An emphasis on multidisciplinary teamwork, as well as on professional and ethical responsibility equips students for career success. A supplemental biochemical engineering option focusing on the biological systems of living organisms prepares students for food, pharmaceutical, biotechnology, and environmental industry careers—as well as medical or dental school.

HANDS-ON ACTIVITIES
Students gain invaluable, relevant work experience and make lasting professional network connections through full-time summer and part-time semester internships, as well as a six-month co-op program that lets them earn degree credits while working full-time. These programs often lead to post-graduate employment offers. Additionally, CBE students regularly engage in cutting-edge research under the guidance and mentorship of faculty advisors.

COURSES OFFERED
- Biological Foundations of Chemical Engineering
- Biochemical Engineering
- Transport Phenomena in Chemical Engineering
- Chemical Engineering Kinetics
- Chemical Engineering Design
- Chemical Engineering Thermodynamics
- Process Simulation
- Computational Methods in Chemical Engineering
- Professional Skills Development

RESEARCH FACILITIES AND CENTERS
- Catalyst Manufacturing Center
- Center for Structured Organic Particulate Systems (C-SOPS)
- Laboratory for Biomembranes and Drug Delivery Systems
- Catalysis and Reaction Engineering Laboratories
- Glycans, Glycoconjugates & Glycan Active Enzymes Engineering Lab
- Nanomaterials Laboratory

Watch this space. Prof. Shishir Chundawat and CBE researchers have developed a new process that could make it much cheaper to produce sustainable biofuels that features an ammonia-salt based solvent that rapidly turns plant fibers into sugars needed to make ethanol.