UNDERGRADUATE DEGREE PROGRAM
As a chemical engineer you’ll work with chemical change and chemical processing. You might develop ways to produce chemicals, or design, build, and operate a chemical production plant. You might search for new sources of energy or work to clean up the environment. Or you might play an important role in new technologies such as semiconductor processing and biotechnology or in the development of new materials such as polymers and ceramics.

Chemical engineers are involved in producing all kinds of goods, from plastics, textiles, and fertilizers, to processed foods and antibiotics. Chemical engineers also work in new areas of biotechnology, including designing new methods to fight life-threatening diseases and more effective ways to deliver medications.

They are in demand in many fields, including, in particular, the petroleum, chemical, pharmaceutical, electronics, consumer-products, and food-processing industries. Many find attractive professional opportunities in government agencies, research laboratories, and academic institutions, and a good number rise to positions of considerable technical and managerial responsibility.

Cornell’s undergraduate program in Chemical Engineering offers a coordinated sequence of courses beginning in your sophomore year and extending through your senior year. The fundamental analytic tools of chemical engineering — chemical kinetics, chemical thermodynamics, and fluid mechanics — are developed in the second and third years. In the third year, these tools are used to analyze the units of chemical processes: chemical reactors, bio-reactors, distillation columns, and heat exchangers. In the senior year, students design chemical processes by integrating process units with attention to economics, safety, and environmental impact. Concentrations in biomolecular engineering, polymeric materials, and energy are also available.

If you plan to enter the Chemical Engineering program, be sure to take CHEM 2090: Engineering General Chemistry (or CHEM 2150: Honors General and Inorganic Chemistry, if you have a score of 5 on the CEEB AP Chemistry Exam), and CHEM 2080: General Chemistry II during your first year.

CHEME By the Numbers
Starting salaries of B.S. Chemical Engineering graduates (for 2017)

- Low: $60,000
- Median: $74,500
- High: $100,000

ChemE undergraduate students: 260
CBE graduate students: 197

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<tr>
<th>CHEME CORE REQUIRED COURSES</th>
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<tr>
<td>ENGRD 2190</td>
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<tr>
<td>CHEM 2510</td>
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<td>CHEM 2900</td>
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<tr>
<td>CHEM 3530 or CHEM 3570</td>
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<td>CHEM 3890</td>
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SOME AREAS OF FACULTY RESEARCH

- battery power, storage, and transmission
- biochemistry and biophysics of biological systems
- biological network fragility
- biomass conversion
- biomedical research and biotechnology
- energy harvesting efficiency of solar cells using photonic crystals
- geothermal science
- interfacial science
- material properties in nanofibers
- photonic materials and solar energy capture
- polymer rheology
- protein conformational studies
- soft matter
- surface science of organic and inorganic materials
- synthetic biology
- systems biology
- transport in complex fluids

MASTER OF ENGINEERING DEGREE PROGRAM

The Master of Engineering (M.Eng.) degree at Cornell’s Robert Frederick Smith School of Chemical and Biomolecular Engineering, enables new as well as practicing, engineers to earn professional degrees while building expertise in related fields. The diverse personal and academic backgrounds of our faculty and students, and Cornell’s vast facilities, make this an exceptional program in which to pursue one of the following areas of specialization:

- **Computational Informatics**: Learn computational techniques based in the physical sciences with an introduction to Bayesian search and optimization techniques to tame the complexity of modern engineering problems.
- **Energy Economics and Engineering**: A rich, modular-based educational program that prepares students for careers energy-related technology, energy systems management and public policy.
- **Food Science**: Focusing on food chemistry, preservation and manufacturing, this specialization prepares students for careers in nutritional sciences and food production.
- **Medical and Industrial Biotechnology**: Lays the groundwork for careers in biotechnology industries including manufacturing of pharmaceuticals, diagnostics, tissue culture, agricultural products and new food and energy sources.
- **Product Design**: Preparation for students with career interests in the pharmaceutical, personal products and food industries, and led by faculty with vast industrial experience in product design who lend their expertise to new business development, project management, probability and pricing.

This professional degree gives you the opportunity to:

- gain specialized focused knowledge in areas central to chemical engineering;
- deepen your knowledge of one topical area related to chemical engineering by specializing in an area of study, such as polymers, electronic materials, engineering management, food engineering, etc.;
- broaden your skills (e.g., take courses in finance, marketing, language proficiency, entrepreneurship, etc.);
- undertake original research in one of the faculty research programs.

Please visit the following website for more details: [http://www.cheme.cornell.edu/cbe/academics/graduate/meng/index.cfm](http://www.cheme.cornell.edu/cbe/academics/graduate/meng/index.cfm)