Chemical Engineering

Website (http://www.northeastern.edu/che/)

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The Department of Chemical Engineering at Northeastern University prepares undergraduate chemical engineers to excel at providing innovative solutions to problems related to environmental and energy systems, advanced and flexible manufacturing, personalized medicine, and novel materials for everyday living. With chemistry integrally involved in global challenges, chemical engineers utilize their undergraduate training to solve these problems in a variety of ways. For example, chemical engineers apply foundations of science, mathematics, and engineering to design and create new materials needed for life on earth and in space, alternative energy sources, and materials to efficiently store energy. In biotechnology, chemical engineers recapitulate and regenerate tissue, develop new therapies and drug delivery systems, and utilize the microbiome to advance medicine and sustainability. Chemical engineers are also involved in protecting our environment by exploring ways to reduce acid rain and smog; to recycle and reduce wastes; to develop new sources of environmentally clean energy; and to design inherently safe, efficient, and "green" processes. Through the design of new materials, products, and processes while reducing costs, increasing production, and improving the quality, sustainability, and safety of new products, chemical engineers impact our daily lives.

Mission of the Department

The mission of the Department of Chemical Engineering at Northeastern is to educate and train students in chemical engineering practice through integrating an inclusive classroom environment with hands-on and cooperative education experiences while solving research problems that impact our world.

Co-op enables students to integrate practical workplace knowledge with classroom learning so the educational experiences are synergistic and deepen the learning process. The chemical engineering community encourages professional development through active participation and leadership in student organizations, professional societies, and departmental activities.

Academic Programs

The department offers undergraduate programs in both chemical engineering and several combined majors:

- BS in Chemical Engineering
- BS in Chemical Engineering and Biochemistry
- BS in Chemical Engineering and Bioengineering
- BS in Chemical Engineering and Computer Science
- BS in Chemical Engineering and Data Science
- BS in Chemical Engineering and Environmental Engineering
- BS in Chemical Engineering and Physics

Please see the programs tab for a full list of the department's academic programs.

By participating in our cooperative education program, our graduates will have an opportunity to explore career objectives that fit their own skills and interests. The goal of this component of our program is to offer students valuable professional experience and contacts to help get them started in their professional career, as well as to develop career management skills. The co-op program parallels the academic program in level of responsibility and sophistication.

The department also offers research opportunities throughout all aspects of chemical engineering, with opportunities for students to participate in academic research as early as their first year. The chemical engineering curriculum is continuously evaluated and improved to ensure that graduates of the program are given every opportunity for future success as professional chemical engineers and are prepared for lifelong learning.

Programs

Bachelor of Science in Chemical Engineering (BSChE)

- Chemical Engineering (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-bsche/)
- Chemical Engineering and Biochemistry (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-biochemistry-bs/)
- Chemical Engineering and Bioengineering (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-bioengineering-bsche/)

- Chemical Engineering and Computer Science (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-computer-science-bsche/)
- Chemical Engineering and Data Science (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-data-science-bsche/)
- Chemical Engineering and Environmental Engineering (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-environmental-engineering-bsche/)
- Chemical Engineering and Physics (https://catalog.northeastern.edu/undergraduate/engineering/chemical/chemical-engineering-physics-bsche/)

Bachelor of Science in Environmental Engineering (BSEnvE)

- Environmental Engineering and Chemical Engineering

Minor

- Biochemical Engineering (https://catalog.northeastern.edu/undergraduate/engineering/chemical/biochemical-engineering-minor/)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (https://catalog.northeastern.edu/undergraduate/engineering/accelerated-bachelor-graduate-degree-programs/#programstext)