Chemical Engineering

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

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Mission of the Department

The mission of the Department of Chemical Engineering at Northeastern University 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.

The graduate programs in the Department of Chemical Engineering offer students the opportunity to work on cutting-edge research that tackles pressing challenges facing our society and our planet in areas such as biomedicine, energy, security, and sustainability. Students develop an in-depth understanding of the principles of chemical engineering through core coursework and applied electives, while gaining career experience through laboratory research or co-op. The overarching goal of the rich research and educational experience is to mentor and to equip our students to become future leaders in engineering and science, while simultaneously promoting scholarly achievement for both the faculty and students.

Academic Programs

The department offers graduate programs in both chemical engineering and pharmaceutical engineering:

- MS in Chemical Engineering
  - MS in Chemical Engineering students can select a concentration that is focused either on sustainability, biosystems, or development of research skills.
- MS in Pharmaceutical Engineering
- PhD in Chemical Engineering
- PhD in Interdisciplinary Engineering

Many graduate-level courses are in the late afternoon or early evening to make them accessible to part-time students with full-time industrial careers. A full-time student may apply for participation in the co-op plan. MS or PhD students pursuing research should first gain the consent of their advisor(s) prior to participating in the co-op plan. Any deviations from the curriculum must be addressed by petition to the graduate committee and will be considered on a case-by-case basis.

Graduate students pursuing a thesis MS or a PhD degree are able to select research topics from a diverse range of faculty interests. The department's research areas include biomolecular and biomedical systems, complex and computational systems, energy and sustainability, engineering education and pedagogy, and materials and nanotechnology. New graduate students can learn about ongoing research from individual faculty members, faculty websites, and graduate student seminars. Graduate student seminars are held on a regular basis and provide an interactive forum for learning and exchanging research ideas.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with their degree. Students should consult their faculty advisor regarding these options (https://catalog.northeastern.edu/graduate/engineering/graduate-certificate-programs/).

GRADUATE CERTIFICATE IN PROCESS SAFETY ENGINEERING

The Process Safety Engineering Graduate Certificate program focuses on the integration of chemical engineering skills with the knowledge of process safety and regulation with specific attention on designing and developing solutions for industrial firms with the goal of creating environments that are safer and in compliance with regulatory rules and regulations.

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Gordon Engineering Leadership Program (https://catalog.northeastern.edu/graduate/gordon-institute/#text) in combination with the MS degree.

Programs

Doctor of Philosophy (PhD)

- Chemical Engineering (https://catalog.northeastern.edu/graduate/engineering/chemical/chemical-engineering-phd/)
- Interdisciplinary Engineering (https://catalog.northeastern.edu/graduate/engineering/interdisciplinary-phd/interdisciplinary-engineering-phd/)

Master of Science (MS)

- Pharmaceutical Engineering (https://catalog.northeastern.edu/graduate/engineering/chemical/pharmaceutical-engineering-ms/)

Master of Science in Chemical Engineering (MSChE)

- Chemical Engineering (https://catalog.northeastern.edu/graduate/engineering/chemical/master-of-science-chemical-engineering-msche/)

Graduate Certificate

- Process Safety Engineering (https://catalog.northeastern.edu/graduate/engineering/chemical/process-safety-engineering-graduate-certificate/)