

# CHEMICAL ENGINEERING (ENCH)

Graduate Degree Program  
College: Engineering

## Abstract

The Chemical and Biomolecular Engineering Department offers educational opportunities leading to a Doctor of Philosophy degree or Masters of Science degree in Chemical Engineering. Both degrees require a written thesis and an oral examination on the thesis. Our faculty research interests cover a wide array of subject matter and is well-equipped for graduate research in; aerosol science and engineering, biochemical engineering, computational modeling, fluid mechanics and mixing, fuel cell technology, metabolic engineering and systems biology, nanoparticle technology, polymer processing and characterization, polymer reaction engineering, process control, thermodynamics and transport phenomena, and systems research. The Department maintains a distributed computing network consisting of research laboratories and a PC laboratory. Major research facilities including electron microscopy, X-ray diffraction, X-ray photoelectron spectroscopy, and NMR are coordinated through a variety of laboratories.

## Financial Assistance

Graduate research assistantships typically support qualified Ph.D. students. Graduate fellowships are available on a competitive basis to both entering and continuing Ph.D. students. Typically only those Ph.D. students who enter the program in the Fall semester are eligible for fellowships. We are unable to provide financial support to students in our masters degree program.

## Contact

### Graduate Coordinator

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College Park, MD 20742

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**Email:** chbegrad@deans.umd.edu (enchgrad@deans.umd.edu)

**Website:** <http://www.chbe.umd.edu> (<http://www.ench.umd.edu>)

**Courses:** CHBE (<https://academiccatalog.umd.edu/graduate/courses/ench/>)

## ADMISSIONS

The programs leading to the Master of Science and Doctor of Philosophy degrees are open to qualified students holding the Bachelor of Science degree. Admission may be granted to students with degrees in other engineering and science areas from accredited programs, and it may be necessary in some cases to require courses to establish an undergraduate Chemical Engineering background. The general regulations of the Graduate School apply in reviewing applications.

## GENERAL REQUIREMENTS

- Statement of Purpose
- Transcript(s)
- TOEFL/IELTS/PTE (international graduate students (<https://gradschool.umd.edu/admissions/english-language-proficiency-requirements/>))

## PROGRAM-SPECIFIC REQUIREMENTS

- Letters of Recommendation (3)
- Graduate Record Examination (GRE) (optional)
- CV/Resume
- Writing Sample (optional)
- Description of Research/Work Experience (optional for M.S., required for Ph.D.)

## APPLICATION DEADLINES

Type of Applicant	Fall Deadline	Spring Deadline
<b>Domestic Applicants</b>		
US Citizens and Permanent Residents	January 3, 2025	October 4, 2024
<b>International Applicants</b>		
F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants	January 3, 2025	September 27, 2024

## RESOURCES AND LINKS:

**Other Deadlines:** [ench.umd.edu](http://www.ench.umd.edu) (<http://www.ench.umd.edu>)

**Program Website:** [chbe.umd.edu](http://www.chbe.umd.edu/) (<http://www.chbe.umd.edu/>)

**Application Process:** [gradschool.umd.edu/admissions/application-process/step-step-guide-applying](https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying) (<https://gradschool.umd.edu/admissions/application-process/step-step-guide-applying/>)

## REQUIREMENTS

- Chemical Engineering, Doctor of Philosophy (Ph.D.) (<https://academiccatalog.umd.edu/graduate/programs/chemical-engineering-ench/chemical-engineering-phd/>)
- Chemical Engineering, Master of Science (M.S.) (<https://academiccatalog.umd.edu/graduate/programs/chemical-engineering-ench/chemical-engineering-ms/>)

## FACILITIES AND SPECIAL RESOURCES

A number of special facilities are available for graduate study and research and are coordinated through the Polymer Reaction Engineering Laboratory, the Chemical Process Systems Laboratory, the Laboratory for Mixing Studies, the Thermophysical Properties Laboratory, the Laboratory for Biochemical Engineering and the Biochemical Reactor Scale Up Facility. These laboratories contain advanced process control computers, polymer processing equipment and polymerization reactors, polymer characterization instrumentation, fermentors, a laser Doppler anemometry facility, and an aerosol characterization facility.