CHEMICAL ENGINEERING (MS)

Chemical and Biomolecular Engineering (https://engineering.nyu.edu/academics/departments/chemical-and-biomolecular-engineering/)

NYSED: 08802 **HEGIS:** 0906.00 **CIP:** 14.0701

Program Description

Chemical Engineering is part of a rapidly expanding field that requires interdisciplinary engineers educated in both the molecular and medical sciences. For every discovery made in the health and industrial sectors, a chemical engineer finds a way to develop and implement it on a large scale.

The MS in Chemical Engineering program at the Tandon School of Engineering prepares students to fulfill this unique role. Our curriculum introduces students to advanced design methods and provides an in-depth look at the research and development process. Our curriculum offers an advanced course of study to refine research skills, and students are taught the problem-solving skills to surmount any problem along the way.

As members of the program, students will have the opportunity to work closely with our leading research faculty. Tandon research areas include biopolymers at interfaces, bio-sensors, dynamics of complex fluids, nanotechnology and nanomaterials, process-systems engineering, protein engineering, and biomolecular diagnostics.

In the coming years, we expect to see a significant increase in the demand for capable chemical engineers. Our graduates will be able to explore a number of exciting fields — from chemical manufacturing, energy production, and health care, to biotechnology, nanotechnology, and environmental and consumer safety.

Admissions

To apply for admission to any Tandon graduate program, please contact the Office of Graduate Admissions (https://engineering.nyu.edu/admissions/graduate/).

Program Requirements

The program requires the completion of 30 credits, and students must select one of two pathways for completion:

Guided Studies

Course	Title	Credits
Core Courses		
CBE-GY 6153	Applied Mathematics in Engineering	3
CBE-GY 6333	Transport Phenomena	3
CBE-GY 6733	Chemical Engineering Thermodynamics	3
CBE-GY 6813	Chemical Reactor Analysis and Design	3
CBE-GY 6000 Electives		
Select 6 credits of any CBE-GY courses numbered 6000 or higher.		6
Free Elective Credits		
Choose 6 credits of graduate courses of your choice. [1]		6
Guided Studies Requirement		
Normally taken during the final two terms, with students enrolling in 3 credits of Guided Studies in the final two semesters.		6
CBE-GY 902X	Guided Studies in Chemical Engineering	
Total Credits		**30**

[1] Free Elective course(s) may be chosen from other departments and schools of NYU, with adviser approval. Courses, however, cannot be chosen from the School of Professional Studies.

Thesis

Course	Title	Credits
Core Courses		
CBE-GY 6153	Applied Mathematics in Engineering	3
CBE-GY 6333	Transport Phenomena	3
CBE-GY 6733	Chemical Engineering Thermodynamics	3
CBE-GY 6813	Chemical Reactor Analysis and Design	3
CBE-GY 6000 Electives		
Select 6 credits of any CBE-GY courses numbered 6000 or higher.		6
Free Electives		
Choose 3 credits of graduate courses of your choice. [1]		3
Thesis Requirement		
Normally taken across multiple semesters, with students enrolling in 3-6 credits of MS Thesis per term.		9
CBE-GY 997X	MS Thesis in Chemical & Biological Engineering	
Total Credits		**30**

[1] Free Elective course(s) may be chosen from other departments and schools of NYU, with adviser approval. Courses, however, cannot be chosen from the School of Professional Studies.

Internship for Chemical Engineering Students

Students can register for an internship course (CP-GY 9911 Internship for MS I, CP-GY 9921 Internship for MS II, 1.5 credit each) to do an internship. Up to 3 credits of approved internships can be applied as free electives towards the MS degree. Students cannot do an internship for credit after they have completed degree requirements. For an internship to be approved for credit, the internship must provide industry and/or research experience relevant to the Chemical Engineering MS degree program. Students must secure a CBE faculty member's commitment for advising an internship. All internships must be approved by the faculty adviser. An internship supervisor (that is a person supervising a student's work at the internship site) should submit a midterm and a final term evaluation report to the faculty adviser. The student must submit a project report to the faculty adviser upon completion of the internship for evaluation and grading. International students willing to do an internship should consult with the Office of Global Services (OGS) (https://www.nyu.edu/about/leadership-university-administration/office-of-the-president/office-of-the-provost/university-life/office-of-studentaffairs/office-of-global-services.html) to ensure compliance with immigration regulations; this most often involves getting approval for Curricular Practical Training (CPT) (https://www.nyu.edu/students/student-information-and-resources/student-visa-and-immigration/current-students/employment-and-tax/curricular-practical-training.html).

Sample Plan of Study Guided Studies

Course	Title	Credits
1st Semester/Term		
CBE-GY 6333	Transport Phenomena	3
CBE-GY 6733	Chemical Engineering Thermodynamics	3
CBE-GY 6000 Elective		3
	Credits	**9**
2nd Semester/Term		
CBE-GY 6813	Chemical Reactor Analysis and Design	3
CBE-GY 6153	Applied Mathematics in Engineering	3
CBE-GY 6000 Elective		3
	Credits	**9**
3rd Semester/Term		
CBE-GY 902X	Guided Studies in Chemical Engineering	3
Free Elective		3
Free Elective		3
	Credits	**9**
4th Semester/Term		
CBE-GY 902X	Guided Studies in Chemical Engineering	3
	Credits	**3**
	Total Credits	**30**

Thesis

Course	Title	Credits
1st Semester/Term		
CBE-GY 6333	Transport Phenomena	3
CBE-GY 6733	Chemical Engineering Thermodynamics	3
CBE-GY 6000 Elective		3
	Credits	**9**
2nd Semester/Term		
CBE-GY 6813	Chemical Reactor Analysis and Design	3
CBE-GY 6153	Applied Mathematics in Engineering	3
CBE-GY 6000 Elective		3
	Credits	**9**
3rd Semester/Term		
CBE-GY 997X	MS Thesis in Chemical & Biological Engineering	6
Free Elective		3
	Credits	**9**
4th Semester/Term		
CBE-GY 997X	MS Thesis in Chemical & Biological Engineering	3
	Credits	**3**
	Total Credits	**30**

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Have an understanding of the fundamental principles of chemical engineering subjects.
2. Have enhanced mathematical and analytical skills.
3. Develop a deeper knowledge and understanding of advanced design, laboratory or research skills.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (https://bulletins.nyu.edu/nyu/policies/).

Tandon Policies

Additional academic policies can be found on the Tandon academic policy page (https://bulletins.nyu.edu/graduate/engineering/academic-policies/).

Program Policies

GPA Requirement

To meet graduation requirements, students must have an overall grade point average (GPA) of 3.0 in all courses taken, and must not obtain more than two grades of C in the core courses.