

# CHEMICAL ENGINEERING (MS)

Department Website (<https://engineering.nyu.edu/academics/programs/chemical-engineering-ms/>)

**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 School of Engineering prepares you to fulfill this unique role. Our curriculum introduces you 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 your research skills, and we teach you the problem-solving skills to surmount any problem along the way.

As a member of the program, you will have the opportunity to work closely with our leading research faculty. The School of Engineering 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 ensure the most efficient application processing, submit your application before sending documents or submitting test scores.*

### Mailing Address

*(For all application documents. Please note that this is our document processing center in Pennsylvania):*

NYU Tandon School of Engineering  
Graduate Admissions Processing Center  
458 Pike Road  
Huntingdon Valley, PA 19006

## Online Application

The Office of Graduate Admissions requires all applicants to complete the online application and does not accept paper-based applications. The application must be completed and submitted on or before the posted deadline for the term of entry.

Once you have completed all sections of the online application, validate and submit it. After submission, you will not be able to make changes to your application information. Please keep in mind that once submitted, we are unable to return your application materials or documents. If you wish to submit updated documentation, please email us so we can advise on the best way to submit it.

In some cases, the academic department may choose to contact the applicant for an interview.

## Personal Essay

As part of your application, you are expected to provide a response, in written form, to two prompts. A response to both prompts is required. This is an opportunity for you to give us a stronger sense of who you are, as a person. Your essay should be as unique as you are and should be written using your own voice. Include each prompt as the header for each of your two responses. When finished, combine your response to both prompts into one single PDF and upload it to the application. Your total essay upload should be 12 pt, Arial font and no more than two pages, double-spaced, in length.

**Prompt 1:** Drawing from your previous academic, professional and personal experiences, tell us what attracted you to the program of study you have noted in your application. Be very specific about your past experiences and how they shaped your interests.

**Prompt 2:** Students often have a wide range of ideas and plans for what they hope to achieve after they receive their graduate degree. Tell us what your 5-year plan is after completing a degree from NYU Tandon.

## Resume

A copy of your most recent résumé or curriculum vitae must be uploaded to the online application.

## Official Transcripts and Degree Conferral

For admissions review, we will accept copies of your official transcript and proof of undergraduate degree (if completed) uploaded to your application or emailed to us at [engineering.gradinfo@nyu.edu](mailto:engineering.gradinfo@nyu.edu). Screenshots or student portal downloads will not be accepted or used in your application review. Please note that we require transcripts from all institutions attended.

If you are offered admission, we will require official final transcripts sent to our office directly from your undergraduate institution to finalize your admission, prior to enrollment in your first semester. To satisfy this requirement, we will accept hard copy/physical transcripts, or electronic transcripts. No scanned copies will be accepted once you've been admitted.

A hard copy or physical transcript is considered official when it is in a sealed, unopened envelope mailed directly from your previous institution to NYU Tandon. An electronic transcript is considered official if it is sent through a digital credential service such as Parchment, Student Clearinghouse, Credential Solutions or a similar, secure third-party platform, or emailed directly from your institution's registrar's office.

## Testing Information

Find out if your program requires the GRE or GMAT here: GRE Requirements (<https://engineering.nyu.edu/admissions/graduate-admissions/admissions-requirements/gregmat-requirements/>). If the GRE is required for your programs, your official test scores must be on file before your application will be reviewed. To be considered official, the GRE test scores must be submitted electronically through ETS (institution code is 2668; a departmental code is not required). The name and date of birth on your test scores must match the name and date of birth on your application, in order for us to receive your scores correctly. Learn more about the GRE exam on the ETS (<https://www.ets.org/gre/>) website.

ETS offers at-home testing for the GRE. Please visit their website here for more information and to see if you are eligible for this option: ETS GRE

General Test - Home Edition ([https://www.ets.org/gre/revised\\_general/register/at\\_home/](https://www.ets.org/gre/revised_general/register/at_home/)).

## English Language Proficiency Testing

All applicants to the NYU Tandon School of Engineering for graduate study must demonstrate excellent English language skills in reading, writing, speaking, and comprehension. Proficiency will be determined by the Test of English as a Foreign Language (TOEFL)\* (<http://www.ets.org/toefl/>), International English Language Testing System (IELTS) (<https://ielts.org/take-a-test/>), Duolingo English Test (<https://englishtest.duolingo.com/applicants/>), Cambridge Assessment English (<https://www.cambridgeenglish.org/exams-and-tests/qualifications/general/>), or Pearson PTE Academic (<http://pearsonpte.com/test-takers/test/>) exams. You must submit your English language proficiency scores electronically via the testing agency. The name and date of birth on your test scores must match the name and date of birth on your application, in order for us to receive your scores correctly.

The Office of Graduate Enrollment Management and Admissions reserves the right to request proof of English competency from any applicant. At least one of these exams is required for:

1. All International applicants (those who have or will request a visa) OR
2. Applicants whose first language is not English and/or who have not completed a bachelor's degree in the United States.

The NYU Tandon School of Engineering requires that graduate applicants achieve a minimum TOEFL score of 90 on the internet-based test, an overall band of 7.0 on IELTS, a score of 125 on the Duolingo English Test, a 65 on the Pearson PTE Academics exam, or a C1 Advanced or C2 Proficiency on the Cambridge Assessment English exam.

The NYU Tandon School of Engineering TOEFL institution code is 2668. Please send electronic IELTS scores to New York University Tandon School of Engineering (<https://www.ielts.org/en-us/usa/ielts-for-test-takers/results/>).

*TOEFL, IELTS, and PTE scores are valid for two years. The test must be taken again if your score is older than two years at the time of application submission.*

ETS offers at-home testing for the TOEFL. Please visit their website here for more information and to see if you are eligible for this option: TOEFL iBT Home Edition (<https://www.ets.org/toefl/test-takers/ibt/why/options/>)

Applicants may request a waiver of English Language Proficiency Testing for special cases by submitting a waiver request form. If you have only attended a US institution for four years and earned a bachelor's degree, or two years, and earned a master's degree, you will automatically be reviewed for a waiver and do not need to submit a waiver request form. If you have attended both a US school and a school outside of the US, please submit a waiver. This request will be reviewed only after transcripts have been received.

Deadlines to submit your waiver request are below:

All Applicants

Fall: March 1

Spring: November 15

## Recommendations

You are required to send two recommendations; we will accept up to three. Recommendations should be provided by professors, employers, supervisors, or others (no friends or relatives) who are able to comment on your academic achievements, research potential and your professional goals. We ask that you input your recommender's information into the online application and they will be prompted to complete a recommendation form electronically. Additionally, there is an option to submit a recommendation letter along with the recommendation form. The letter is optional and not required. Please note that if the optional recommendation letter is submitted, it **MUST** be on professional letterhead and come from the recommender's company or university email address. Recommendation letters received outside of these requirements will be subject to further review and asked to be resubmitted in order to meet our requirements.

## Mailing Address for Application Materials

(For *all* application documents. Please note that this is our document processing center in Pennsylvania):

NYU Tandon School of Engineering  
Graduate Admissions Processing Center  
458 Pike Road  
Huntingdon Valley, PA 19006

\*Please note that any application documents sent to the NYU Tandon Graduate Admissions Processing Center are unable to be returned to the student.

## 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
<b>Major Requirements</b>		
CBE-GY 902X	Guided Studies in Chemical Engineering (taken twice, for a total of 6 credits)	6
<b>Core Requirements</b>		
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
<b>Electives</b>		
Other Elective Credits <sup>1</sup>		12
<b>Total Credits</b>		<b>30</b>

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At least two electives (6 credits) must be chosen from approved CBE graduate courses, 6000-level and above, while the other two (6 credits) may be chosen from other graduate programs with the approval of the graduate advisor in chemical engineering.

## Thesis

Course	Title	Credits
<b>Major Requirements</b>		
CBE-GY 997X	MS THESIS IN CHEMICAL & BIOLOGICAL ENGINEERING (taken three times, for a total of 9 credits)	9

**Core Requirements**

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

**Electives**

Other Elective Credits <sup>1</sup>		9
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<b>Total Credits</b>		<b>30</b>
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At least two electives (6 credits) must be chosen from approved CBE graduate courses, 6000-level and above, while the other two (6 credits) may be chosen from other graduate programs with the approval of the graduate advisor in chemical engineering.

**Note:** To meet graduation requirements, students must have an overall B average in all courses (excluding M.S. Thesis or Guided Study Project) and must not obtain more than two grades of C in required subjects.

## 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 non-CBE electives towards the M.S. 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 M.S. degree program. Students must secure a CBE faculty member's commitment for advising an internship. All internships must be approved by the faculty advisor. 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 advisor. The student must submit a project report to the faculty advisor upon completion of the internship for evaluation and grading. International students willing to do an internship should consult with OGS 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
<b>1st Semester/Term</b>		
CBE-GY 6333	Transport Phenomena	3
CBE-GY 6733	Chemical Engineering Thermodynamics	3
CBE-GY Elective 6000 level or higher		3
<b>Credits</b>		<b>9</b>
<b>2nd Semester/Term</b>		
CBE-GY 6813	Chemical Reactor Analysis and Design	3
CBE-GY 6153	APPLIED MATHEMATICS IN ENGINEERING	3
CBE-GY Elective 6000 level or higher		3
<b>Credits</b>		<b>9</b>
<b>3rd Semester/Term</b>		
CBE-GY 902X	Guided Studies in Chemical Engineering	3-6
Elective		3

Elective		3
<b>Credits</b>		<b>9</b>
<b>4th Semester/Term</b>		
CBE-GY 902X	Guided Studies in Chemical Engineering	3-6
<b>Credits</b>		<b>3</b>
<b>Total Credits</b>		<b>30</b>

## Thesis

Course	Title	Credits
<b>1st Semester/Term</b>		
CBE-GY 6333	Transport Phenomena	3
CBE-GY 6733	Chemical Engineering Thermodynamics	3
CBE-GY Elective 6000 level or higher		3
<b>Credits</b>		<b>9</b>
<b>2nd Semester/Term</b>		
CBE-GY 6813	Chemical Reactor Analysis and Design	3
CBE-GY 6153	APPLIED MATHEMATICS IN ENGINEERING	3
CBE-GY Elective 6000 level or higher		3
<b>Credits</b>		<b>9</b>
<b>3rd Semester/Term</b>		
CBE-GY 997X	MS THESIS IN CHEMICAL & BIOLOGICAL ENGINEERING	3-9
Elective		3
<b>Credits</b>		<b>9</b>
<b>4th Semester/Term</b>		
CBE-GY 997X	MS THESIS IN CHEMICAL & BIOLOGICAL ENGINEERING	3-9
<b>Credits</b>		<b>3</b>
<b>Total Credits</b>		<b>30</b>

## 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/>).