

# BIOTECHNOLOGY (MS)

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

**NYSED:** 31537 **HEGIS:** 0499.00 **CIP:** 26.1201

## Program Description

Biotechnology is a swiftly growing industry. From the food grown at our farms to the medicine we buy and the ways we clean up the environment, biotechnology affects many facets of our daily lives. Major developments in the field occur every day, with many introduced by academic and professional communities before the greater public is even aware of industry advancements.

At the School of Engineering, students will join in these exciting discoveries. Course topics range from industrial application of enzymes and bio-polymer synthesis to modern drug design and the role of biotechnology in health care. The availability of various and varied electives enables students to specialize in selected biotechnology areas.

The program also includes Advanced Cell and Molecular Biology and Genetic Engineering courses, both with labs. Students can further enhance their research and analytical skills by registering for a Guided Study course. Taking two such courses will enable students to complete a body of research work equivalent to a master's thesis (optional). Students can also take a business- or management-related course from Biotechnology and Entrepreneurship M.S. With adviser permission, students can take courses at other Schools of NYU.

There are ample research/internship opportunities available at NYU and NYC at large. For example, many Biotech M.S. students participate in research projects at the NYU Langone Medical Center, the world-renowned Memorial Sloan Kettering Cancer Center, and other research institutions in the city. There are also internships in Biotech start-ups. All students can, of course, apply for summer internships at big pharmaceutical companies.

## 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

Cyber Fellows applicants can review application requirements here. (<https://engineering.nyu.edu/academics/programs/cybersecurity-ms-online/nyu-cyber-fellows/>) All other applicants, review the requirements below.

## 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.

## 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.

## Special Notes from the Office of Graduate Admissions

- Due to the volume of applications and related materials received, the Office of Graduate Admissions will only contact you if your application was successfully submitted and is deemed incomplete because of missing required materials. Otherwise, you will hear from us when a decision has been rendered.
- All graduate programs at NYU Tandon School of Engineering are considered STEM Programs based on the government classification

(CIP codes) and are available for the STEM OPT extension. The STEM OPT extension is a 24-month period of temporary training that directly relates to an F-1 student's program of study in an approved STEM field. Eligible F-1 students with STEM degrees who finish their program of study and participate in an initial period of regular 12-month post-completion OPT have to option to apply for this extension for a total OPT period of 36 months. More information on STEM OPT at NYU. (<http://www.nyu.edu/students/student-information-and-resources/student-visa-and-immigration/alumni/extend-your-opt/stem-opt.html>)

## Program Requirements

The program requires the completion of 30 credits, comprised of the following:

Course	Title	Credits
<b>Required Courses</b>		
BT-GY 6013	Biotechnology and the Pharmaceutical Industry	3
BT-GY 6023	Biotechnology and Health Care	3
BT-GY 6033	Biosensors and Biochips	3
BT-GY 6043	Biocatalysis in Industry	3
BT-GY 6093	Biomedical Materials & Devices for Human Body Repair	3
or BT-GY 9433	PROTEIN ENGINEERING	
<b>Elective Courses</b>		
Select nine to fifteen credits of the following: <sup>1</sup>		9-15
BT-GY 6053	Introduction to Neuroscience for Biotechnologists	
BT-GY 6063	Immunology: Concepts, Mechanisms and Applications in Biotechnology	
BT-GY 6073	Genetic Engineering	
BT-GY 6083	Advanced Cell and Molecular Biology	
BT-GY 7011	Special Topics in Biotechnology	
BT-GY 7013	Special Topics in Biotechnology	
BT-GY 7033	Business Concepts for the Biotechnology Entrepreneur	
BT-GY 7043	Computer-Aided Protein and Drug Design	
BT-GY 9053	Enzyme Catalysis in Organic Synthesis	
BT-GY 9443	Tissue Engineering	
<b>Guided Studies</b>		
Select up to two of the following: <sup>2</sup>		0.5-6
BT-GY 871X	Project in Biotechnology I	
BT-GY 8723	Project in Biotechnology II	
<b>Total Credits</b>		<b>30</b>

<sup>1</sup>

Subject to adviser's approval students can also take an elective course and/or do research at other Schools of NYU (up to 9 credits). Typically, Biotechnology students choose NYU Langone Health (<https://med.nyu.edu/>).

<sup>2</sup>

Students may optionally enroll in up to two Guided Studies courses (one per semester), which involve laboratory or literature work, as arranged with their advisers. Guided Studies courses count as elective courses.

## Sample Plan of Study

Course	Title	Credits
<b>1st Semester/Term</b>		
BT-GY 6023	Biotechnology and Health Care	3
BT-GY 6083	Advanced Cell and Molecular Biology	3
BT-GY 6093	Biomedical Materials & Devices for Human Body Repair	3
<b>Credits</b>		<b>9</b>
<b>2nd Semester/Term</b>		
BT-GY 6013	Biotechnology and the Pharmaceutical Industry	3
BT-GY 6043	Biocatalysis in Industry	3
BT-GY 6073	Genetic Engineering	3
<b>Credits</b>		<b>9</b>
<b>3rd Semester/Term</b>		
BT-GY 6033	Biosensors and Biochips	3
BT-GY Elective		3
BT-GY Elective		3
<b>Credits</b>		<b>9</b>
<b>4th Semester/Term</b>		
BT-GY Elective		3
<b>Credits</b>		<b>3</b>
<b>Total Credits</b>		<b>30</b>

## Learning Outcomes

Upon successful completion of the program, graduates will:

1. Demonstrate fundamental knowledge of main Biotechnology subject areas, including the underpinning science.
2. Have developed a clear understanding of how the main Biotech concepts are applied in practice.
3. Have acquired skills and experience necessary to successfully enter the workforce.

## Policies

### GPA and Grade Policy

To meet graduation requirements, students must attain an overall GPA of 3.0 (average of a B) in all their courses.

### 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/>).