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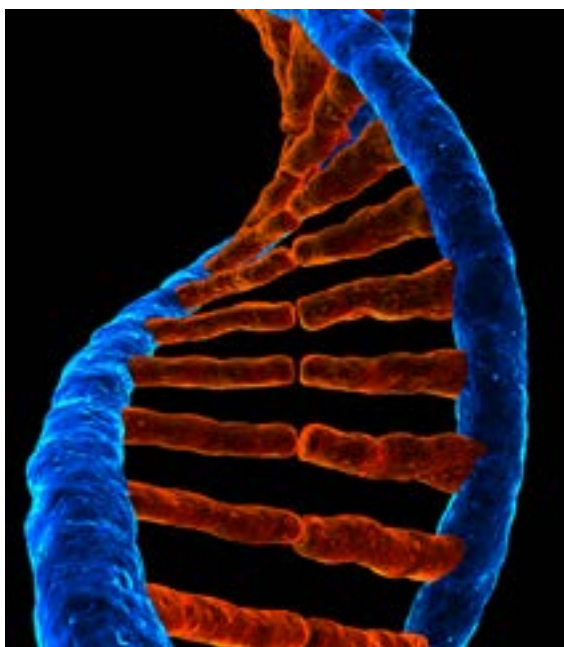
## Chemistry Graduate Studies

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# Professional Science Master's Biotechnology Option

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Master of Science in Pharmaceutical Chemistry



Department of Chemistry and Environmental Science  
College of Science and Liberal Arts

## ABOUT THE COLLEGE OF SCIENCE AND LIBERAL ARTS

The College of Science and Liberal Arts (CSLA) is dedicated to instruction in the physical, biological, and mathematical sciences as well as traditional liberal arts disciplines. CSLA is home to internationally renowned research centers and award winning researchers, and partners with departments throughout NJIT to explore emerging frontiers and expand interdisciplinary initiatives in a diverse range of areas that include genomics, neuroscience, ecology, biomechanics, solar physics, photonics, environmental science, applied mathematics and statistics, materials science, technical communication and digital media.

## WHY STUDY BIOTECHNOLOGY AT NJIT?

NJIT is uniquely situated among the greatest concentration of biotechnology and pharmaceutical activities in the world, with over 400 private and public biopharmaceutical companies thriving around the NJ Area. Opportunity is right outside our door. The mission of NJIT's professional Biotechnology option in the MS Pharmaceutical Chemistry program is to prepare scientists and engineers for dynamic careers in biopharmaceutical industry. The program will focus on providing integrated coursework and training in current biotechnology industry practices. Our approach, relying on the input of our industrial advisory board, will ensure that our program will keep students up-to-date on the latest biotechnology industry changes and challenges and prepare them to work in this growing and exciting industry. NJIT's professional Biotechnology program will provide a solid grounding in science and engineering, with an industry focus, facilitating the tailoring of coursework to meet individual career goals.

## PROFESSIONAL SCIENCE MASTER'S

This program option is affiliated with the PSM National Office. The objective of this option is to create leaders with strong communication and management skills in addition to the strong technical knowledge in biotechnology for the rapidly changing biopharmaceutical industry. This option is designed for working professionals or students who already have acquired some professional experience.

## ADMISSIONS REQUIREMENTS

BS degree in the chemical or biological sciences or engineering preferred. GRE for all full-time applicants. Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) for all international students not holding a degree from a U.S. postsecondary institution. Minimum scores: Internet-based TOEFL – 79, computer-based TOEFL – 213, paper-based TOEFL – 550, IELTS – 6.5 with no sub-score lower than 6.0.

## CURRICULUM

The Biotechnology option consists of five core courses, three professional courses, one elective course, and one experiential course for a total of 30 credits. For degree requirements consult the graduate catalog: [catalog.njit.edu/graduate/](http://catalog.njit.edu/graduate/).

## CORE COURSES (15 CREDIT HOURS)

CHEM 605	Advanced Organic Chemistry I: Structure
CHEM 673	Biochemistry
CHEM 777	Principles of Medicinal Chemistry
PHB 505	Pharmaceutical Microbiol & Biochem
PHEN 601	Principles of Pharmaceutical Engineering

## REQUIRED PROFESSIONAL COURSES (9 CREDIT HOURS)

Select three of the following courses:

EM 634	Legal, Ethical & Intellectual Property Issues
HRM 601	Organizational Behavior
MGMT 641	Global Project Management
PTC 601	Adv. Professional & Technical Communication

## REQUIRED EXPERIENTIAL COURSE (3 CREDIT HOURS)

CHEM 590	Graduate Co-Op Work Experience
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## ELECTIVE COURSES (3 CREDIT HOURS)

Select one of the following courses:

CHEM 658	Adv. Physical Chemistry
CHEM 661	Instrumental Analysis Laboratory
CHEM 714	Pharmaceutical Analysis
CHEM 716	Integrated Drug Development & Discovery
CHEM 719	Drug Delivery Systems
CHEM 737	Comp. Chemistry & Molecular Modeling
CHEM 748	Nanomaterials
EVSC 616	Toxicology for Engineers & Scientists
MATH 663	Introduction to Biostatistics
PHB 610	Biotechnology: Processes & Products
PHB 615	Bioseparation Processes
PHEN 500	Pharmaceutical Engineering Fundamentals I
PHEN 604	Validation & Reg. Issues in Pharmaceutical I
PHEN 618	Principles of Pharmacokinetics & Drug Delivery
CHEM 700B	Master's Project

## Rutgers Newark courses

R120 572	Concepts in Pharmaceutical Drug Development
R160 515	Chemical Structure Determination

## Rutgers Biomedical and Health Sciences (RBHS) courses

PATH N5209	Business of Science: Drug Development
PPHY N5021	Fundamentals of Pharmacology

## FOR FURTHER INFORMATION, CONTACT:

Graduate Programs,  
Department of Chemistry and Environmental Science  
[chemistry.njit.edu](http://chemistry.njit.edu)  
[gradchem@njit.edu](mailto:gradchem@njit.edu)



## TO APPLY CONTACT:

Office of Graduate Admissions  
973-596-3300, or apply on-line at  
<http://www.njit.edu/admissions/apply-online.php>