

Biotechnology

Bachelor’s

Degree

 

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The degree in Biotechnology from the Division of Science at City College of New York aims to prepare students for careers in biotechnology, industry, or biomedical research. Students receive a thorough course foundation coupled with a one-year laboratory experience where the students perform original research.

**Key Elements**

* The program includes interdisciplinary coursework to provide a strong scientific foundation.
* Each student will gain research experience using cutting edge approaches as well as receiving individual advising and mentoring throughout the program.

**Declaration of Major**

To declare the major, students must have completed BIO 10100, BIO 10200, BIO 20600, CHEM 10301, CHEM 10401, and MATH 20500 or the equivalent. In addition, students must have an overall GPA of at least 3.0 and a GPA of at least a 3.0 in the Biotechnology major courses.

**Course requirements**

The program requires a total of at least 76-80 total course credits. At least 60% of these credits must be taken at CCNY.

Required core courses

BIOLOGY

BIO 10100 Biological Foundations I (4 cr)

BIO 10200 Biological Foundations II (4 cr)

BIO 20600 Introduction to Genetics (4 cr)

BIO 22900 Cell & Molecular Biology (4 cr)

BIO 48300 Laboratory in Biotechnology (5 cr)

CHEMISTRY

CHEM 10301 General Chemistry I (4 cr)

CHEM 10401 General Chemistry II (4 cr)

CHEM 26100 Organic Chemistry (3 cr)

CHEM 26200 Organic Chemistry Laboratory I (2 cr)

CHEM 26300 Organic Chemistry II (3 cr)

CHEM 32002 Biochemistry I (3 cr)

MATHEMATICS

MATH 20500 Elements of Calculus (4 cr)

MATH 20900 Elements of Calculus & Statistics (4 cr)

OR

MATH 201-203 series (total 12 cr)

PHILOSOPHY

PHIL 34905 Bioethics (3 cr)

PHYSICS

PHYS 20300 General Physics I (4 cr)

PHYS 20400 General Physics II (4 cr)

OR

PHYS 20700/20800 series (8 cr)

RESEARCH COURSES

BIO/CHEM/PHY 301-303 Honors I-III (*maximum 6 cr* towards major)

BIO/CHEM/PHY 310 Independent Study (1-3 cr/semester; *maximum 6 cr* towards major*)*

ADVANCED ELECTIVE COURSES from Biology, Chemistry, and/or Physics (11 cr)

Some possible electives include:

Biology

BIO 35000 Microbiology (4 cr)

BIO 35400 Introduction to Neurobiology (3 cr)

BIO 37500 Developmental Biology (3 cr)

BIO 37900 Developmental Neurobiology (3 cr)

BIO 38000 Eukaryotic Genetics (4 cr)

BIO 41000 Cell Development and Senescence (3 cr)

BIO 42000 Virology (4 cr)

BIO 42500 Cancer Biology (3 cr)

BIO 48000 Topics in Microbial Genetics (3 cr)

BIO 48100 Epigenetics (3 cr)

Chemistry

CHEM 33500 Physical Biochemistry (5 cr)

CHEM 40600 Environmental Chemistry (3 cr)

CHEM 48005 Biochemistry II (3 cr)

CHEM 48206 Journey to the Center of the Cell (3 cr)

CHEM 44200 RNA Biochemistry & Molecular Biology (3 cr)

Physics

PHY 31500 Medical Physics (3 cr)

PHY 42002 Biophysics (3 cr)

PHY 52200 Biomedical Physics (3 cr)

SCIENCE 28000 Bioinformatics and Biomolecular Systems (3 cr)

**Participating Faculty at CCNY (list is not exhaustive)**

Biology

Mark Emerson

Karen Hubbard

Shubha Govind

Anu Janakiraman

Chris Li

Mark Pezzano

Andrey Rudenko

Shireen Saleque

Tadmiri Venkatesh

Bao Vuong

Oseola Whitney

Chemistry

Zimei Bu

Amadee des Georges

Kevin Gardner

Ranajeet Ghose

George John

David Jeruzalmi

Daniel Keedy

Reza Khayat

Themis Lazaridis

Kevin Ryan

Ruth Stark

Physics

Marilyn Gunner

Ronald Koder

Partners at ASRC

Shana Elbaum-Garfinkle

Patrizia Casaccia

Pinar Ayata

Susana Mingote

Orie Shafer

Partners at CSOM

Andreas Kottmann

Itzik Mano

John Martin

Linda Spatz

For more information, contact: ScienceDean@ccny.cuny.edu