BIOCHEMISTRY MAJOR

Requirements

The biochemistry major is offered in two tracks (p.): an American Chemical Society (ACS)-certified track (p. ) and a general track (p. ).

Students interested in pursuing courses with an emphasis on chemistry in relation to physical, analytical, and advanced structural and molecular aspects of biochemistry may choose to opt for the ACS track. On the other hand, students inclined more toward cell, molecular, and structural aspects of biochemistry in addition to biocomputational and physiological approaches may pursue the general track. Both tracks require students to participate in research.

Students interested in pursuing more in-depth organic chemistry laboratory coursework have the option of taking CHEM 2531 Organic Chemistry Lab I for Chem Majors and CHEM 2532 Organic Chemistry Lab II for Chem Majors in lieu of CHEM 2541 and CHEM 2542.

Research courses (CHEM 1990 Introduction to Research, CHEM 3990 Directed Research, and CHEM 4990 Independent Research) are available. Students should contact specific faculty for research opportunities based on their research interests.

Chemistry majors and biological sciences majors may not double major in biochemistry, but they may pursue a biochemistry minor. Integrative neuroscience majors pursuing a concentration in systems/computational neuroscience or in cognitive neuroscience may double major in biochemistry. However, integrative neuroscience majors pursuing a concentration in cell and molecular neuroscience may not double major in biochemistry.

A minimum grade of C or higher is required in the following foundational course sequences (lecture and lab) listed below: general chemistry, biology, organic chemistry, and mathematics.

Course Title Credits

Foundational Courses

General Chemistry

Select one of the following (Rose Hill students take CHEM; Lincoln Center students take NSCI):

CHEM 1321 General Chemistry I 6
& CHEM 1331 and General Chemistry Lab I
& CHEM 1311 and General Chemistry I Recitation

NSCI 1321 General Chemistry Lecture I 6
& NSCI 1331 and General Chemistry Lab I

Select one of the following (Rose Hill students take CHEM; Lincoln Center students take NSCI):

CHEM 1322 General Chemistry II 6
& CHEM 1332 and General Chemistry Lab II
& CHEM 1312 and General Chemistry II Recitation

NSCI 1322 General Chemistry Lecture II 6
& NSCI 1332 and General Chemistry Lab II

Biology

Select one of the following (Rose Hill students take BISC; Lincoln Center students take NSCI):

BISC 1403 Introductory Biology I 5
& BISC 1413 and Introductory Biology Lab I

NSCI 1403 General Biology Lecture I
& NSCI 1413 and General Biology Lab I

NSCI 1423 Concepts in Biology Lecture I
& NSCI 1433 and Concepts in Biology Lab I

Select one of the following (Rose Hill students take CHEM; Lincoln Center students take NSCI):

BISC 1404 Introductory Biology II 5
& BISC 1414 and Introductory Biology Lab II

NSCI 1404 General Biology Lecture II
& NSCI 1414 and General Biology Lab II

NSCI 1424 Concepts in Biology Lecture II
& NSCI 1434 and Concepts in Biology Lab II

Organic Chemistry

Select one of the following (Rose Hill students take CHEM; Lincoln Center students take NSCI):

CHEM 2521 Organic Chemistry I 6
& CHEM 2541 and Organic Chemistry Lab I
& CHEM 2511 and Organic Chemistry I Recitation

CHEM 2521 Organic Chemistry I
& CHEM 2531 and Organic Chemistry Lab I for Chem
& CHEM 2511 Majors

NSCI 3121 Organic Chemistry Lecture I
& NSCI 3821 and Organic Chemistry Lab I

Select one of the following (Rose Hill students take CHEM; Lincoln Center students take NSCI):

CHEM 2522 Organic Chemistry II 6
& CHEM 2542 and Organic Chemistry Lab II
& CHEM 2512 and Organic Chemistry II Recitation

CHEM 2522 Organic Chemistry II
& CHEM 2532 and Organic Chemistry Lab II for Chem
& CHEM 2512 Majors

NSCI 3122 Organic Chemistry Lecture II
& NSCI 3822 and Organic Chemistry Lab II

Mathematics

MATH 1206 Calculus I 4
MATH 1207 Calculus II 4

Physics

Select one of the following (Rose Hill students take PHYS; Lincoln Center students take NSCI):

PHYS 1501 General Physics I 4
& PHYS 1511 and Physics I Lab
& PHYS 1503 and General Physics I Recitation

PHYS 1701 Physics I 4
& PHYS 1511 and Physics I Lab
& PHYS 1703 and Physics I Recitation

NSCI 1501 General Physics Lecture I 4
& NSCI 1511 and General Physics Lab I

Select one of the following (Rose Hill students take PHYS; Lincoln Center students take NSCI):

PHYS 1502 General Physics II 4
& PHYS 1512 and Physics II Lab
& PHYS 1504 and General Physics II Recitation

PHYS 1702 Physics II 4
& PHYS 1512 and Physics II Lab
& PHYS 1704 and Physics II Recitation

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1 Students interested in the ACS track should complete Calculus I (MATH 1206) and Calculus II (MATH 1207) as early as possible in their studies. A score of 4 or 5 in AP Calculus AB or BC, or an IB HL Mathematics (Analysis and Approaches) score of 6 or 7, fulfills the Calculus I requirement.

2 Consult the Tracks section (p. ) for the required and elective courses that comprise each track.

**Availability**

The major in biochemistry is available at Fordham College at Rose Hill and at Fordham College at Lincoln Center. Students in Fordham’s School of Professional and Continuing Studies may major in biochemistry only if they receive the approval of their advising dean and/or department, and their schedules are sufficiently flexible to permit them to take day courses at the Rose Hill or Lincoln Center campuses. Students should note that many of the courses that comprise the major are offered only at the Rose Hill campus.

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