

Biological Chemistry

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Program of Study

The Department of Chemistry, in conjunction with the Department of Biochemistry and Molecular Biology (BCMB) in the Division of Biological Sciences, offers a B.S. degree in Biological Chemistry. The program is designed to prepare students to enter a variety of interdisciplinary fields in biochemical and biophysical sciences. Undergraduate research is strongly encouraged. By combining the resources of both departments, the students in this program are given the opportunity to study chemistry and physics of macromolecules, mechanisms of actions of enzymes and hormones, molecular and cellular biology, biotechnology, and other related fields.

Summary of Requirements

General Education	CHEM 11101-11201 or 11102-11202 or equivalent†*
	MATH 15100-15200 or 16100-16200† or a grade of A- or higher in MATH 13100-13200
	BIOS 20191-20192
Concentration	1 CHEM 11301 or 11302 or equivalent†*
	1 MATH 15300 or 16300† or a grade of A- or higher in MATH 13300
	2 MATH 20000-20100
	3 PHYS 12100-12200-12300 or higher†
	1 CHEM 20100
	3 CHEM 22000-22100-22200/22000-23100-23200
	3 CHEM 26100-26200, 26700
	1 course from CHEM 20200, 22300, or 26300
	1 appropriate 20000-level course in biology
	2 BIOS 20200 and 21316
	1 approved 30000-level biochemistry or chemistry course

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† Credit may be granted by examination.

* See "Advanced Placement" and "Honors Chemistry Placement Test" in Chemistry section of this catalog.

NOTE: Students may not substitute Analysis in R^n (MATH 20300-20400-20500) or other 20000-level courses in mathematics for Mathematical Methods for Physical Sciences (MATH 20000-20100) without also passing

an equivalency exam on the material in MATH 20000-20100 that is not covered in these courses. Students should meet with the departmental counselor to obtain prior approval for such substitutions. MATH 20200 is strongly recommended for students concentrating in Biological Chemistry.

Grading. Students concentrating in Biological Chemistry must receive quality grades in all courses required in the degree program. To qualify for the B.S. degree, students must achieve a GPA of 2.0 or higher, and no grade lower than C- in the 20000-level or higher Chemistry, Biology, and Department of Biochemistry and Molecular Biology courses in the preceding list.

Honors and Undergraduate Research. By their third year, all Biological Chemistry concentrators are strongly encouraged to participate in research with a faculty member. More information on research opportunities is available at chemistry.uchicago.edu/programs.shtml.

Excellent students who pursue a substantive research project with a faculty member in the Department of Chemistry or the Department of Biochemistry and Molecular Biology should plan to submit an honors thesis. Students usually begin research during their third year and continue through the following summer and their fourth year. To be considered for honors, students are expected to receive approval from the program adviser before the end of their third year.

A B.S. with honors in Biological Chemistry requires students to write a creditable honors paper describing their research. The paper must be approved by the program advisers in the Department of Chemistry and the Department of Biochemistry and Molecular Biology and must be submitted before the deadline established by the department. In addition, an oral presentation of the research is required.

To earn a B.A. or B.S. degree with honors in chemistry, students must also have an overall GPA of 3.0 or higher.

Joint Degree Program. A four-year joint degree program leading to a concurrent award of the B.S. in Biological Chemistry and the M.S. in Chemistry is available for a select group of students who have achieved advanced standing through their performance on placement or on accreditation examinations. Special programs are developed for such students. For details, consult Ka Yee Lee, kayeelee@uchicago.edu.

For a list of faculty, see the Chemistry section of this catalog.

Courses: Biological Chemistry (BCHM)

29900. Advanced Research in Biological Chemistry. *PQ: Consent of a faculty sponsor and the program adviser. Students are required to submit the College Reading and Research Course Form. Normally taken for a letter grade.* This course provides advanced, individually guided research for College students, both those who are concentrating in Biological Chemistry and those who are not. Students may submit a written report covering their research activities to be considered for departmental honors. *Summer, Autumn, Winter, Spring.*