



CHEMISTRY

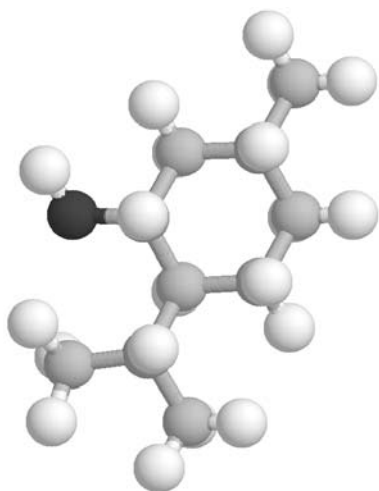
www.usc.edu/dept/chemistry

Follow the links to "Undergraduate Programs"

UNDERGRADUATE STUDIES IN BIOCHEMISTRY

A B.S. Degree in Biochemistry is jointly offered through the Departments of Biological Sciences and Chemistry. At most universities, such programs are offered through a single department, either Biology or Chemistry, with the curriculum reflecting the home department. At USC, this program is an academic partnership between the two departments, in line with the interdisciplinary character of biochemistry.

This program may meet the needs of students with broad interests in the sciences, and may be particularly appropriate for those preparing for a research career in a biomedical field or a clinical career in a health profession. The curriculum for this new program includes 12 semester courses from the Departments of Biological Sciences and Chemistry (6 from each department), 2 semester courses in physics, and 3 semester courses in mathematics. These courses and a proposed schedule are given on the reverse side. Two upper division elective science courses are also required which may be satisfied by registering in undergraduate research courses in either Biological Sciences or Chemistry. This option offers students hands-on experience in a laboratory with on-going world-class research.



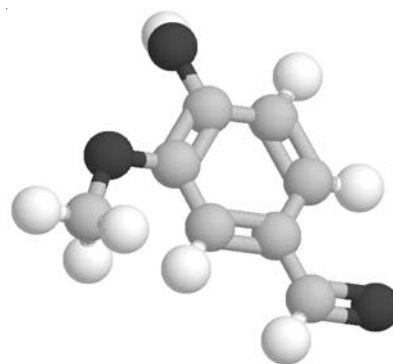
HONORS OPTION

The B.S. Degree in Biochemistry with Departmental Honors is available to eligible students. A student will be admitted into this special program after attaining junior standing with an overall USC GPA of 3.5 or better earned in at least 32 units (8 semester courses) at USC. In addition, the student must have a GPA of 3.5 or better in all courses taken in the Departments of Biological Sciences and Chemistry. This work in Biological Sciences and Chemistry must total at least 16 units (4 courses) at the time of admission to the honors program.

To graduate with departmental honors, a student must have an overall USC GPA of 3.5 or better, and a GPA of 3.5 or better in all courses taken in the Departments of Biological Sciences and Chemistry. A student must carry out a research project through registration in an undergraduate research course in either department. The results of the research must be described in an undergraduate thesis that will be reviewed and approved by a faculty committee.

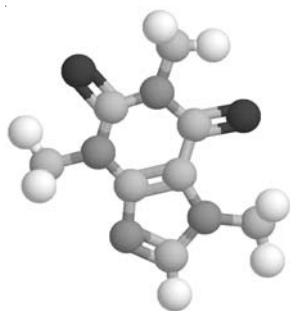
PROGRAM FLEXIBILITY

The B.S. degree program in biochemistry complements the existing B.S. degree programs in the Departments of Biological Sciences and Chemistry. Together, these three programs provide a spectrum of curricular options for the many students who enter USC with general interests stretching across biology and chemistry. This triad of programs offers degree flexibility for students until the end of the sophomore year because of the similar lower division requirements among the three degree programs. Students who switch from one of these programs to another during the first two years of study will not fall behind in their progress towards graduation.



THE CURRICULUM

The B.S. degree in Biochemistry is structured around a lower division core of courses in biological sciences (2), chemistry (2), physics (2) and mathematics (3), upper division courses in biological sciences (4) and chemistry (4) and upper division science electives (2). The course options within the program are intended to meet the needs of students with slightly different focuses. For example, if a student desires a somewhat stronger background in physical chemistry than that provided by the one semester required course (CHEM 430a or 432), the PHYS 151L and 152L option can be taken along with the MATH 226 option, and PHYS 153L (Fundamentals of Physics III) can be taken as a free elective. This background will allow the student to take the standard year-long sequence in physical chemistry CHEM 430a (as a required course) and 430b (as a free elective)



LOWER DIVISION (SEMESTER UNITS)

BISC 120Lg, Introduction to Biology I (4)
BISC 220L, Introduction to Biology II (4)
CHEM 105aLgbL, General Chemistry (4-4) or **CHEM 115aLbL**, Advanced General Chemistry (4-4)
MATH 125, Calculus I (4)
MATH 126, Calculus II (4)
MATH 208x, Elementary Probability and Statistics (4) or **MATH 226**, Calculus III (4)
PHYS 135aLbL, Physics for the Life Sciences (4-4)
 or **PHYS 151Lg**, Fundamentals of Physics (4)
PHYS 152L, Fundamentals of Physics II (4)

UPPER DIVISION

BISC 320L, Molecular Biology (4)
BISC 330L, Biochemistry and Cell Biology (4)
BISC 403, Advanced Molecular Biology (4)
BISC 435, Advanced Biochemistry (4)
CHEM 300L, Analytical Chemistry (4)
CHEM 322 aLbL or **CHEM 325aLbL**, Organic Chemistry (4-4)
CHEM 430a, Physical Chemistry (4) or **CHEM 432**, Physical Chemistry for the Life Sciences (4)
 Upper Division Science Electives (2 courses) (4-4)

Total required units for the major: 76 (19 courses)

Additional Requirements for a Baccalaureate Degree in the College of Letters, Arts and Sciences

General Education: 5 courses, 20 units

(Students receive credit for Category III from science courses in the program)

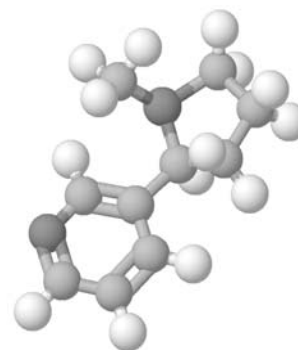
Writing: 2 courses, 8 units

Foreign Language: 3 courses, 12 units

Total additional units for a College Degree: 40 (10 courses)

Free Elective Units: 12 (3 courses)

Total units required for the B.S. Degree in Biochemistry: 128 (32 courses)



SAMPLE PROGRAM

There are a number of minor variations on this program since the science electives, free electives, advanced writing course, and GE courses III, IV and V are all interchangeable in the sample schedule.

Year 1		Year 2	
BISC 120Lg (4) CHEM 105aL (4) or CHEM 115aL (4) GE I (SI) (4) WRIT 140 (4)	BISC 220L (4) CHEM 105bL (4) or CHEM 115bL GE II (A&L) (4) Foreign Lang I (4)	CHEM 322aL (4) BISC 320L (4) MATH 125 (4) Foreign Lang II (4)	CHEM 322bL (4) CHEM 300L (4) MATH 126 (4) Foreign Lang III (4)
Year 3		Year 4	
Sci Elective (4) or Free Elective (4) PHYS 135aL (4) or PHYS 151L (4) GE III (4) MATH 208 (4) or MATH 226 (4)	BISC 330L (4) PHYS 135bL (4) or PHYS 152L (4) GE IV (4) WRIT 340 (4)	CHEM 430a (4) or CHEM 432 (4) BISC 403 (4) GE V (4) Sci Elective (4) or Free Elective (4)	BISC 435 (4) Sci Elective (4) Free Elective (4) Free Elective (4)

ADVISEMENT

Students who major in this degree program may be advised by faculty advisors in either the Department of Biological Sciences (AHF 103, 740-5776) or the Department of Chemistry (SGM 418, 740-7036). Contact either department for assignment to a faculty advisor.