

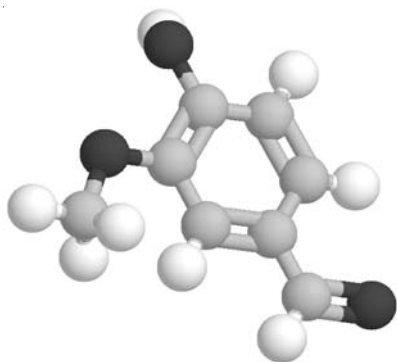


CHEMISTRY

www.usc.edu/dept/chemistry

Follow the links to "Undergraduate Programs"

UNDERGRADUATE STUDIES IN CHEMISTRY



Students who wish to major in chemistry have a choice of a B.S. Degree, the professional track certified by the American Chemical Society, or a B.A. Degree, a program of study with sufficient flexibility to accommodate a minor degree or even a second major under certain circumstances. The B.S. Degree is intended for students who intend to take a job as a chemist after their undergraduate studies, or who plan to pursue a graduate degree in chemistry. The B.A. Degree may be of interest to students preparing for careers in other fields such as the health professions, business, or law.

These two programs of study have identical requirements for the lower division, differing only in the number of required upper division chemistry and science elective courses. Students in both programs have the opportunity to participate in a research project through registration in CHEM 490, Undergraduate Research, which provides degree credit as either a science or free elective course.

HONORS OPTION

Both the B.S. and B.A. Degrees in Chemistry are available with Departmental Honors for eligible students. Juniors with an overall USC GPA of 3.5 or better are eligible for this special program. To graduate with Departmental Honors, a student must have a USC GPA of 3.5 or better and have registrations in 8 units of CHEM 490, Undergraduate Research. The results of the research must be described in an undergraduate thesis that will be reviewed and approved by a faculty committee.

THE CURRICULUM

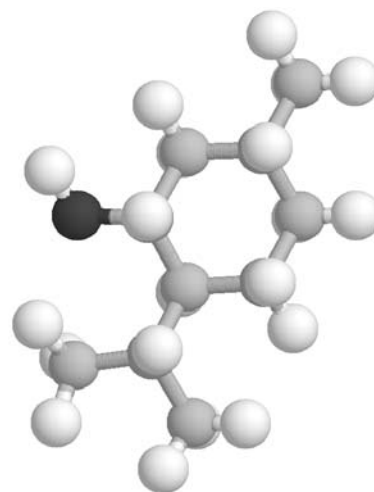
To receive a bachelor's degree in the College of Letters, Arts and Sciences, a student must complete 128 units of course work. Since most courses provide 4 units of credit towards a degree, if a student registers for a full load of 4 courses each semester, he or she will graduate in 4 years.

In addition to the unit requirement (128 units), there are specific subject (course) requirements for a bachelor's degree in the College of Letters, Arts and Sciences. These required courses are of three types: General Requirements, Major Requirements, and Free Electives.

The General Requirements are those courses required of all students pursuing a bachelor's degree in the College of Letters, Arts and Sciences and include general education, writing and foreign language courses. These requirements are the same for the B.S. and B.A. degrees in Chemistry.

The Major Requirements are the courses specifically required for the major a student is following. They also include courses outside the major department. For example, mathematics and physics courses are required for the B.S. and B.A. degrees in Chemistry.

The Free Electives are any additional courses that provide units towards the required 128 for the bachelor's degree. Note, only courses numbered 100 and above provide units towards the degree.



REQUIREMENTS FOR THE CHEMISTRY DEGREES

GENERAL 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 curriculum)
Writing: 2 courses, 8 units
Foreign Language: 3 courses, 12 units

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

LOWER DIVISION MAJOR REQUIREMENTS

The lower division requirements within the major are the same for the B.A. and B.S. Degrees in Chemistry (32 units).

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 225, Linear Algebra and Linear Differential Equations (4) or **MATH 226**, Calculus III (4)

PHYS 151Lg, Fundamentals of Physics I (4)

PHYS 152L, Fundamentals of Physics II (4)

PHYS 153L, Fundamentals of Physics III (4)

UPPER DIVISION MAJOR REQUIREMENTS

The upper division major requirements have a common core requirement, with different required additional chemistry and science elective courses.

Core Requirements (20 units)

CHEM 300L, Analytical Chemistry (4)

CHEM 325aLbL, Organic Chemistry (4-4)

CHEM 430ab, Physical Chemistry (4-4)

Additional Courses for the B.S. Degree (24 units)

CHEM 332L, Physical Chemistry Measurements (4)

CHEM 426, Advanced Organic Chemistry (4)

CHEM 453, Advanced Inorganic Chemistry (4)

CHEM 423L, Advanced Laboratory Techniques in Organic and Inorganic Chemistry (4) or **CHEM 465L**, Chemical Instrumentation (4)

CHEM 490, Undergraduate Research (4)

One Science Elective (4)

Additional Courses for the B.A. Degree (8 units)

One course from among:

CHEM 332L, Physical Chemistry Measurements (4)

CHEM 423L, Advanced Laboratory Techniques in Organic and Inorganic Chemistry (4)

CHEM 453, Advanced Inorganic Chemistry (4)

CHEM 490, Undergraduate Research (4)

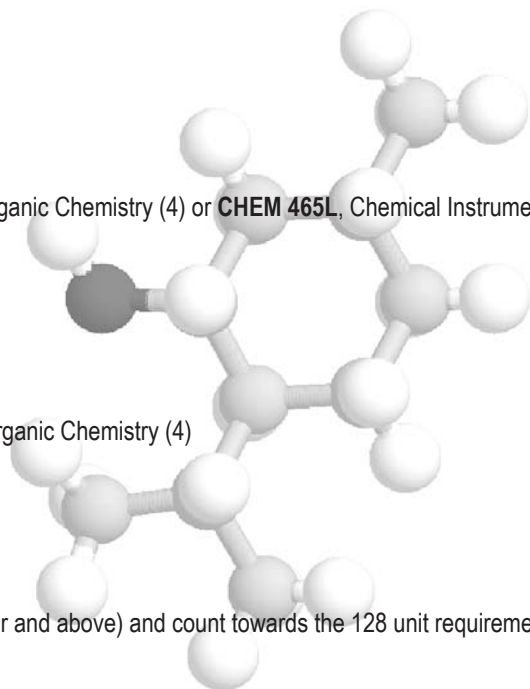
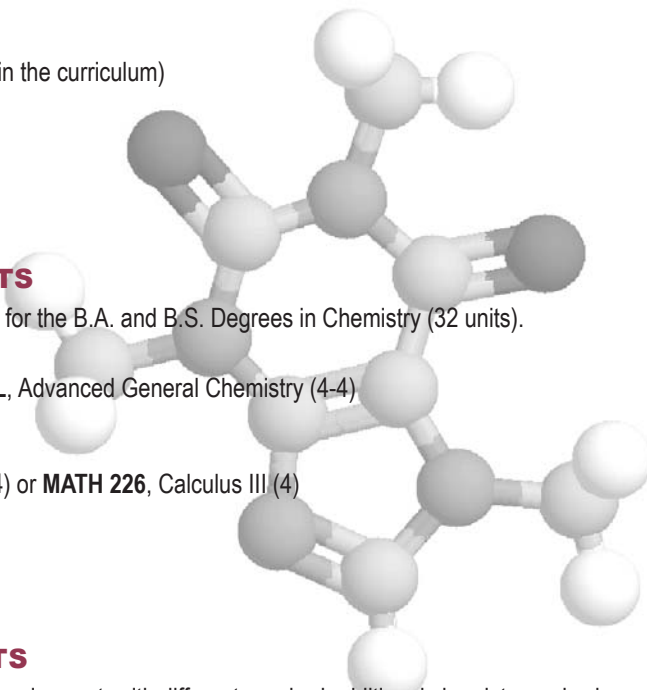
One Science Elective (4)

Free Electives

Free electives are any courses that carry degree credit (100 number and above) and count towards the 128 unit requirement (32 courses) for a baccalaureate degree.

B.S. Degree in Chemistry: 3 courses (12 units)

B.A. Degree in Chemistry: 7 courses (28 units)

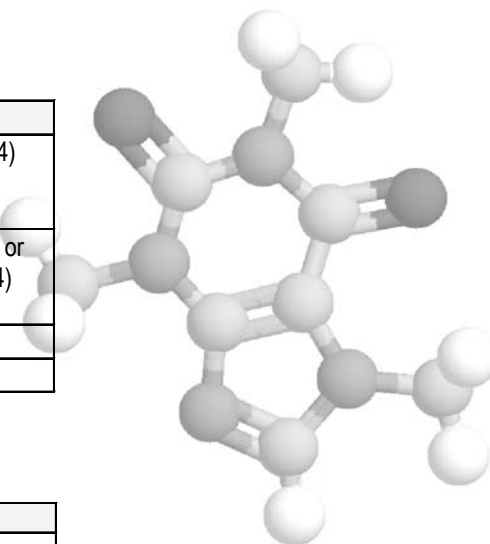


SAMPLE PROGRAMS

Because of the same general and lower division major requirements, the sample program for Year 1 and Year 2 is essentially the same for the BS and BA Degrees.

FOR EITHER THE BS OR BA DEGREE IN CHEMISTRY

Year 1		Year 2	
CHEM 105aLg (4) or CHEM 115aL (4)	CHEM 105bL (4) or CHEM 115bL (4)	CHEM 325aL (4)	CHEM 325bL (4)
GE I (SI) (4)	GE II (A&L) (4)	CHEM 300L (4)	PHYS 151L (4) or Free Elective (4)
WRIT 140 (4)	For Lang I (4)	MATH 125 (4)	MATH 126 (4)
Free Elective (4)	Free Elective (4)	For Lang II (4)	For Lang III (4)



FOR THE BS DEGREE IN CHEMISTRY

Year 3		Year 4	
CHEM 426 (4)	CHEM 453 (4)	CHEM 430a (4)	CHEM 430b (4)
PHYS 152L (4)	PHYS 153L (4)	CHEM 465L (4) or GE V (4)	CHEM 423L (4) or GE V (4)
MATH 226 (4)	GE IV (4)	Science Elective (4) or CHEM 490 (4)	Science Elective (4) or CHEM 490 (4)
GE III (4)	WRIT 340 (4)	Free Elective* (4)	CHEM 332L (4)

*Note: Students in the BS program often take PHYS 151L in the second semester of the sophomore year resulting in a free elective in the senior year.

FOR THE BA DEGREE IN CHEMISTRY

Year 3		Year 4	
Free Elective (4)	CHEM# (4) or Free Elective (4)	CHEM 430a (4)	CHEM 430b (4)
PHYS 151L* (4)	PHYS 152L (4)	PHYS 153L (4)	CHEM# (4) or Free Elective (4)
MATH 226 (4)	GE IV (4)	CHEM# (4) or Science Elective (4)	Free Elective (4)
GE III (4)	WRIT 340 (4)	GE V (4)	Free Elective (4)

*Note: Students in the BA program often begin the three semester physics sequence in the junior year.

#Note: The optional required chemistry course (332L, 423L, 453 or 490) may be taken either in the fall or spring semester depending on the course selected.

In Years 3 and 4, the free electives, science electives, general education courses and WRIT 340 course are all interchangeable in the sample schedules for the BS and BA Degrees.

REQUIREMENTS FOR THE HEALTH PROFESSIONS

The curricula for the B.S. and B.A. Degrees in Chemistry include all of the science requirements for admission to medical or dental school except for the two or three courses in Biology. The year-long introductory biology courses, BISC 120Lg and 220L, and an advanced biology course may be included in either curriculum through the free electives.

