Chemists study the properties of matter and make qualitative and quantitative analysis of many substances. They conduct a variety of experiments and tests in laboratories to develop new knowledge or maintain control over the quality of existing products and procedures. Chemists may work in research and development, or production and quality control in the chemical manufacturing industry, and in education or government institutions.

This major may also lead to many other careers. For additional possibilities, visit the Career Services Center on campus to utilize computerized career information systems and other valuable career resources.

### TRANSFER

Students planning to transfer to a four-year college should complete the lower-division major requirements and the general education pattern for the appropriate transfer institution. Santa Monica College has articulation agreements for this major with the following UC, CSU, and private institutions. Exact major requirements for these and other UC and CSU campuses can be found online [www.assist.org](http://www.assist.org). Articulation agreements with private institutions can be found online at [www.smc.edu/articulation](http://www.smc.edu/articulation).

#### UNIVERSITY OF CALIFORNIA, BERKELEY-LETTERS AND SCIENCE

**B.A./B.S. CHEMISTRY:** (offered by the College of Letters and Science) and

**B.S. CHEMISTRY:** (offered by the College of Chemistry)

**STUDENTS MUST COMPLETE EITHER:**

1. The L&S Essential Skills Requirement (Reading and Composition, Foreign Language, Quantitative Reasoning) or
2. IGETC by the end of the Spring term that precedes fall enrollment at Berkeley. Students must also prepare to do upper-division coursework in their major.

The following courses must be completed by the end of the spring term which precedes fall enrollment at Berkeley: CHEMISTRY 11 and 12; MATH 7, 8, 11, 13 and 15; PHYSICS 21 and 22 and 23 and 24

*Completion of the following courses is strongly encouraged: CHEMISTRY 21, 22, 24

*Transfer students pursing majors for which Berkeley’s CHEM 112A-112B is required should take CHEMISTRY 21, 22 and 24. Completion of a year of organic chemistry (lecture and lab) combined with a score in the 75th percentile or higher on the American Chemical Society (ACS) Organic Chemistry Exam will constitute satisfactory completion of Berkeley’s CHEM 112A + 112B. Students are encouraged to take the exam through their community college, if possible. For further information, please contact John Toivonen at (310) 434-4748.

**Please Note:** The College of Chemistry no longer accepts results from the 1994 and 1998 versions of the ACS Organic Chemistry Exam.

#### Foreign Language Requirement

Complete a course comparable to the third year of a foreign language in high school or the second semester of a foreign language as taught at Berkeley. You may also satisfy this requirement with a score/grade of: 550 on the SAT II Foreign Language Subject Exam, if taken before May 1995; 590 on the SAT II Subject Exam, if taken May 1995 or later; 3 or better on the Foreign Language AP Exam; C or better on the GCE “A” or “O” Level Foreign Language Exam.

#### UNIVERSITY OF CALIFORNIA, DAVIS

**A.B. CHEMISTRY:** CHEMISTRY 11 and 12, 21 and 22 and 24; MATH 7, 8 or 7, 8, 11; PHYSICS 6 and 7 or 8 and 9

**B.S. CHEMISTRY:** CHEMISTRY 11 and 12, 21 and 22 and 24; MATH 7, 8, 11, 13, 15; PHYSICS 21, 22, 23; **recommended course:** PHYSICS 24

#### UNIVERSITY OF CALIFORNIA, IRVINE

**B.S. CHEMISTRY:** CHEMISTRY 11 and 12, 21 and 22 and 24; MATH 7 and 8 and 11; PHYSICS 21 and 22

#### UNIVERSITY OF CALIFORNIA, LOS ANGELES

**B.S. CHEMISTRY:** CHEMISTRY 11 and 12, 21 and 22 and 24, 31; MATH 7, 8, 11, 15; PHYSICS 21 and 22 and 23

**ADDITIONAL INFORMATION ON REVERSE. SUBJECT TO CHANGE WITHOUT NOTICE.**

*www.assist.org*

*Please access the above web-site for the most updated articulation information.*
UNIVERSITY OF CALIFORNIA, RIVERSIDE
IGETC is not accepted for this major. Transfer students are encouraged to follow the College of Natural and Agricultural Sciences breadth. Please consult with a counselor or www.assist.org for details. Overall UC minimum grade point average for this major is 2.7. Major accepts applications for fall quarter only.

**B.A. CHEMISTRY**: CHEMISTRY 11 and 12, 21 (grade of B (3.0) or higher) and 22 (grade of B (3.0) or higher) and 24 (grade of B (3.0) or higher); MATH 7 and 8, 11; PHYSICS 8 and 9 or 21 and 22 and 23

Though all of the above courses are required for the major, the following **must** be completed prior to transfer in order to be admitted to the major: MATH 7 and 8; CHEMISTRY 11 and 12

**SELECT ONE SEQUENCE:**
A. PHYSICS 1, 2 and 3 or 8 and 9 or
B. MATH 11 or
C. CHEMISTRY 21, 22, 24 (grade of B (3.0) or higher required in each organic chemistry courses).

**B.S. CHEMISTRY**: CHEMISTRY 11, 12, 21 (grade of B (3.0) or higher), 22 (grade of B (3.0) or higher), 24 (grade of B (3.0) or higher); MATH 7, 8, 11, 15; PHYSICS 1, 2, 3

Though all of the above courses are required for the major, the following **must** be completed prior to transfer in order to be admitted to the major: Math 7 and 8; Chemistry 11 and 12

**SELECT ONE SEQUENCE:**
A. PHYSICS 21 and 22 and 23 or
B. MATH 11 and 15 or
C. CHEMISTRY 21 and 22 and 24 (grade of B (3.0) or higher required in each of the organic Chemistry courses).

**B.S. BIOCHEMISTRY**: BIOLOGY 21 and 22 and 23; CHEMISTRY 11 and 12, 21 and (grade of B (3.0) or higher), 22 and (grade of B (3.0) or higher), 24 (grade of B (3.0) or higher); MATH 7, 8; PHYSICS 8 and 9 or 21 and 22 and 23

Though all of the above courses are required for the major, the following **must** be completed prior to transfer in order to be admitted to the major: Chemistry 11, 12; Math 7, 8

**SELECT ONE SEQUENCE:**
A. PHYSICS 8 and 9 or 21 and 22 and 23 or
B. BIOLOGY 21, 22, 23 or
C. CHEMISTRY 21, 22, 24 (grade of B (3.0) or higher required in each of the organic chemistry courses).

Follow the College of Natural and Agricultural Sciences breadth pattern as outlined under ASSIST major titled “GE/Breadth: College of Natural and Agricultural Sciences”.

Transfer Information: www.futurestudents.ucr.edu/future
Transfer Admission Guarantee (TAG) Program: www.futurestudents.ucr.edu/tag
Major Information: www.chem.ucr.edu

UNIVERSITY OF CALIFORNIA, SAN DIEGO
**B.S. CHEMISTRY**: CHEMISTRY 11, 12, 21, 22, 24; MATH 7, 8, 11, 15; PHYSICS 21, 22, 24

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
**B.S. BIOCHEMISTRY**: CHEMISTRY 11 and 12, 21 and 22 and 24; MATH 7, 8, 13 and 15; PHYSICS 8 and 9 or 6 and 7; BIOLOGY 21 and 22 and 23

**B.A. CHEMISTRY**: CHEMISTRY 11 and 12, 21 and 22 and 24; MATH 7, 8, 13 and 15; PHYSICS 21 and 22 and 23 or 8 and 9 or 6 and 7

**B.S. CHEMISTRY**: CHEMISTRY 11 and 12, 21 and 22 and 24; MATH 7, 8, 11, 13 and 15; PHYSICS 21 and 22 and 23

*Please Note: A reading knowledge of a foreign language is strongly recommended for students planning advanced study in science. German is particularly useful.

Transfer students who complete Organic Chemistry labs prior to entering UCSB will be required to pass an exam administered by the Department of Chemistry and Biochemistry in order to receive course credit.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
**B.A. CHEMISTRY**: CHEMISTRY 11, 12; MATH 7 or 28, 8 or 29; PHYSICS 8 and 9 or 21 and 22

**B.S. BIOCHEMISTRY**: CHEMISTRY 11, 12; MATH 7 or 28, 8 or 29; BIOLOGY 21 and 22, 23; PHYSICS 6 and 7 or 8 and 9

**B.S. CHEMISTRY**: CHEMISTRY 11, 12, MATH 7, 8, 11, 15; PHYSICS 21 and 22 and 24

Santa Monica College has articulation agreements for this major (see www.smc.edu/articulation for exact requirements) with the following private and out-of-state institutions.

LOYOLA MARYMOUNT UNIVERSITY
**B.S. CHEMISTRY**: CHEMISTRY 11, 12, 21, 22 and 24; MATH 7, 8, 11*; PHYSICS 21, 22

*Recommended elective

**B.S. BIOCHEMISTRY**: CHEMISTRY 11, 12, 21, 22 and 24; BIOLOGY 21 and 22 and 23; MATH 7, 8; PHYSICS 21, 22

ADDITIONAL INFORMATION ON REVERSE. SUBJECT TO CHANGE WITHOUT NOTICE.

*www.assist.org

*Please access the above web-site for the most updated articulation information.
“Minimum” is the minimum coursework needed in order to complete a B.A. in the associated major in two years, requiring multiple “heavy” semesters with three or four science courses in one semester. Students on a four-year B.A. path typically take two science or math courses each semester. “Minimum” coursework will not enable a student to complete a B.S. in two years. Students who do not meet the “minimum” pre-requisites may be able to complete the program, given extra time or some summer coursework, and should contact the departmental representatives below.

“Optimal” is the additional coursework to put a transfer student on the same schedule as a student who entered Mills College as a freshman, for the B.A. program. Students who enter at this level will also be able to complete the B.S. by taking one or more semesters with 4 science courses and/or some summer coursework.

“Recommended” courses are specifically for students interested in the B.S. degree. In the B.S. program, students typically take 3 science and/or math courses after the freshman year. With the recommended coursework completed, transfer students should not need to take more than 3 science/math courses in one semester to complete the B.S. degree.

**B.A. CHEMISTRY:** Minimum: CHEMISTRY 11, 12; optimal, also complete: BIOLOGY 21, 22; CHEMISTRY 21, 22, 24; MATH 7, 52; recommended, also complete: MATH 9, 54 and one semester of computer programming

Departmental Representative: Elisabeth Wade ewade@mills.edu