

Chemistry

Modern chemistry occupies a central position among the sciences. A knowledge of chemistry means an ability to understand mathematical models and physical principles and their applications to chemical concepts. Many of the concepts introduced in chemistry are necessary to a complete understanding of earth and life sciences, as well as chemistry itself.

The CSUB Chemistry Department is structured around a standard set of chemistry courses with cognates in computer science, mathematics, and physics. Those individuals interested in teaching professions at the secondary level will be able to meet all requirements here at CSUB. The Department offers course work for chemistry majors to meet the requirements of medical and other professional schools in the health sciences including dentistry, pharmacy, and veterinary medicine. CSUB's Department of Chemistry is on the approved list of the American Chemical Society. A chemistry major program can be designed to meet prescribed standards for certification of the American Chemical Society by its Committee on Professional Training.

Training and Career Outlook

CSUB's Chemistry program prepares students for careers in such fields as environmental studies, clinical laboratories, and applied industrial

chemical production such as food manufacturing, synthetics, and pharmaceuticals. Students considering graduate school receive a strong foundation in Chemistry and other fundamental science courses while at CSUB. Individuals with a baccalaureate degree can teach at the secondary level; those with a master's degree can find employment in government and industrial jobs such as quality control chemists or analytical chemistry. Colleges and universities hire chemists for faculty and research positions, and a Ph.D. in the discipline is necessary for these positions. Private industries hire the most chemists, with more than half of these positions in the chemicals manufacturing industries.

CSUB Alumni Careers

Gilbert Martinez
Lead Chemist
Safety-Kleen, Inc.

Dennis Martinez, M.D.

Wayne Crawford, M.D.

Jerrylaine Walker, M.D.

Both of my degrees have helped me tremendously in my life. I can't imagine having gotten to where I am today without them. My technical degree is what got me my job, and the managerial knowledge really helped me get promotions and helped me move up within the company. The degree gives you an overall breadth of knowledge."

Marianna Buoni
B.S. Chemistry, M.B.A.
General Manager
Safety-Kleen, Inc.



Natural Sciences, Mathematics & Engineering
California State University, Bakersfield
9001 Stockdale Highway
Bakersfield, California 93311-1099

Chemistry Department
Science Building II, Room 273
661-664-3027 FAX: 661-664-2040
E-Mail: kcohn@csub.edu

Chemistry/Requirements for the Major

Sample program for students who want to graduate with a degree in Chemistry.

Requirements for the Major in Chemistry

The Bachelor of Science degree in Chemistry requires twelve courses in chemistry, including the following (or the equivalent):

1. CHEM 211, 212, and 213.
2. Three 300-level courses in chemistry.
3. CHEM 390 and 490.
4. Four additional upper division courses in chemistry (one upper division course in a related discipline may be substituted, with approval of academic advisor).
5. Cognate areas:
 - a. MATH 201, 202, and 203.
 - b. SCI 294 or equivalent approved course.
 - c. PHYS 201, 202, and 203 or PHYS 221, 222, and 223.

Requirements for the Major in Chemistry with a Concentration in Biochemistry

1. The following twelve courses in chemistry (or the equivalent): CHEM 211, 212, 213, 331, 332, 340, 351, 352, 353, 390, 440, and 490.
2. Four of the following courses in Biology: two courses selected from BIOL 210, 211, or 212 and two courses selected from BIOL 304, 311, 355, 430, 453 or 462.
3. Cognate areas:
 - a. MATH 201, 202, and 203.
 - b. SCI 294 or equivalent approved course.
 - c. PHYS 201, 202, and 203 or PHYS 221, 222, and 223.

Requirements for the Major in Chemistry Certified by the American Chemical Society

1. The following courses in chemistry (or the equivalent): CHEM 211, 212, 213, 331, 332, 333, 351, 352, 353, 390, 400, 450, and 490.
2. Two other upper division chemistry course selected in consultation with academic advisor from CHEM 310, 340, 430, 440, 477, or 480.
3. Cognate areas:
 - a. MATH 201, 202, and 203.
 - b. SCI 294 or equivalent approved course.
 - c. PHYS 201, 202, and 203 or PHYS 221, 222, and 223.

Requirements for the Minor

Although no minor is required for the B.S. degree, a minor in chemistry is available, consisting of 20 units, 10 of which must be in upper division courses.

Science Teacher Preparation Program

CSUB offers a Bachelor of Arts degree in Natural Science. Completion of the following course work satisfies the requirements for a Secondary Teaching Credential in Science and leads to a Natural Science B.A. with a Primary Concentration (major) in Chemistry and a secondary concentration (minor) in either Biology, Geology, or Physics.

NOTE: Except for Senior Seminar (490), all courses must be completed with their respective laboratory components.

I. Primary Concentration in Chemistry

CHEM 211, 212, 213, 331, 332, 400, and 490; one additional 300 or 400 level chemistry course acceptable for the major.

II. Secondary Concentration including Breadth

Select one of the following sets of courses:

1. Secondary Concentration in Biology
BIOL 210, 211, and 212, plus two additional 300 or 400 level biology courses acceptable for the major; GEOL 201 and 205; PHYS 110, 201 or 221, 202 or 222, and 203 or 223.
2. Secondary Concentration in Geology
GEOL 201, 205, 303, 307, and 310 or 320; BIOL 210, 211, and 212; PHYS 110, 201 or 221, 202 or 222, and 203 or 223.
3. Secondary Concentration in Physics
PHYS 110, 221, 222, 223, 307, and 324; BIOL 210, 211, and 212; GEOL 201 and 205.

Scholarships

- Arts and Sciences Merit Award Scholarship
- Cancer Federation Research Scholarship
- Jeanette Haskin Endowment for Women in Science