1715. Asmundson Hall
Major Adviser: J.I. Yoder
Applications of biotechnology. Topics include micro- and cellular biology, medical biology, genomics, cell and tissue culture, gene transfer and crop improvement strategies using transgenic crops. Not open for credit to students who have completed Plant Biology 160. (Former course Plant Biology 160.) GE credit: SciEng | SE.—II. (II.) Dandekar

161A. Genetics and Biotechnology Laboratory (6)
Lecture—3 hours, laboratory—9 hours. Prerequisite: Plant Sciences 152 or Biological Sciences 101; consent of instructor. Techniques of genetic analysis at the molecular level including recombinant DNA, gene mapping and basic computational biology. Not open for credit to students who have completed Plant Biology 161A. GE credit: SciEng | SE.—II. (II.) Stajich

161B. Plant Genetics and Biotechnology Laboratory (4)
Lecture—1 hour, laboratory—8 hours. Prerequisite: Plant Sciences 152 or Biological Sciences 101; consent of instructor. Introduction to the principles of molecular biology and practice in difficult ethical situations and evaluating personal and social consequences. GE credit: SciEng | SE, WE.—III. (III.) Kliebenstein

171. Professionalism and Ethics in Genomics and Biotechnology (3)
Lecture—1 hour, discussion—2 hours. Prerequisite: upper division standing. Preparation and review of a scientific proposal. Problem definition, identification of objectives, literature survey, hypothesis generation, design of experiments, data analysis planning, proposal outline and evaluation. (Same course as Plant Sciences 188.) GE credit: SciEng, Wrt | OL, SE, WE.—I, II, III. (II, III.) Bennett, Bradford, Yoder

188. Undergraduate Research Proposal (3)

189. Laboratory Research in Genomics and Biotechnology (3)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 188 and consent of instructor. Formulating experimental approaches to current questions in biotechnology, performance of proposed experiments. May be repeated for credit up to 12 units. (P/NP grading only.)

Bodega Marine Laboratory Program

http://bml.ucdavis.edu/

See also Biological Sciences, Bodega Marine Laboratory Program, on page 181.

In the 2014, the new multi-college B.S. in Marine and Coastal Science (MCS) major will start and the MCS field requirement can be fulfilled by any of the courses below.

Spring Quarter Program
A full quarter (15 units) of undergraduate course work in marine biology is available each spring quarter at the Bodega Marine Laboratory, located in Bodega Bay, California. Course offerings include lecture and laboratory instruction in the development of secondary and tertiary understanding of coastal ecosystems through intensive, hands-on lab and field courses taught at Bodega Marine Laboratory. The program offers upper level study in Marine Science Program, on page 181. See also Biological Sciences, Bodega Marine Laboratory Program, on page 181.

Summer Session Courses
This integrated program offers students a multidisciplinary understanding of coastal ecosystems through intensive, hands-on lab and field courses taught at Bodega Marine Laboratory. The program offers students three sequences of instruction with up to 10 units each in two sequences occur during the first Summer Session and one sequence in the second Summer Session. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.

Summer Session Courses

1. Marine Organisms and the California Current. 120 hours. Science and Policy 150C; Biological Sciences courses 120, 120P, 122, 122P, 123, Neurobiology, Physiology, and Behavior 141, 141P. This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.

Summer Session Courses

1. Marine Organisms and the California Current. 120 hours. Science and Policy 150C; Biological Sciences courses 120, 120P, 122, 122P, 123, Neurobiology, Physiology, and Behavior 141, 141P. This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.

Summer Session Courses

1. Marine Organisms and the California Current. 120 hours. Science and Policy 150C; Biological Sciences courses 120, 120P, 122, 122P, 123, Neurobiology, Physiology, and Behavior 141, 141P. This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.

Summer Session Courses

1. Marine Organisms and the California Current. 120 hours. Science and Policy 150C; Biological Sciences courses 120, 120P, 122, 122P, 123, Neurobiology, Physiology, and Behavior 141, 141P. This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.

Summer Session Courses

1. Marine Organisms and the California Current. 120 hours. Science and Policy 150C; Biological Sciences courses 120, 120P, 122, 122P, 123, Neurobiology, Physiology, and Behavior 141, 141P. This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.

Summer Session Courses

1. Marine Organisms and the California Current. 120 hours. Science and Policy 150C; Biological Sciences courses 120, 120P, 122, 122P, 123, Neurobiology, Physiology, and Behavior 141, 141P. This is a 15 unit program and course offerings and instructors may vary from year to year. Applications are due January 31.

For more course detail, see full description under appropriate academic department listing or http://bml.ucdavis.edu/.
Chemistry

(College of Letters and Science)
Susan M. Kauzlarich, Ph.D., Chairperson of the Department
Neil E. Schore, Ph.D., Vice-Chairperson of the Department (Undergraduate Matters)
Frank E. Osterloh, Ph.D., Vice-Chairperson of the Department (Graduate Matters)
David Goodin, Ph.D., Vice-Chairperson of the Department (Safety)

Department Office. 108 Chemistry Building 530-752-8900, Fax 530-752-8995; http://www.chem.ucdavis.edu/

Faculty
James Ames, Ph.D., Professor
Shota Atsumi, Ph.D., Assistant Professor
Matthew P. Augustine, Ph.D., Professor
Alan L. Baich, Ph.D., Professor
Erica Baldwin, Ph.D., Associate Professor
Peter Beal, Ph.D., Professor
Louise A. Berben, Ph.D., Assistant Professor
R. David Britt, Ph.D., Professor
William Casey, Ph.D., Professor
Xi Chen, Ph.D., Professor
Stephen Cramer, Ph.D., Professor
Sheila David, Ph.D., Professor
Andrew J. Fisher, Ph.D., Professor
Annaliese K. Franz, Ph.D., Associate Professor
Jacquelyn Gervay Hague, Ph.D., Professor
David Goodin, Ph.D., Professor
Ting Guo, Ph.D., Professor
Susan M. Kauzlarich, Ph.D., Professor

Distinguished Graduate Mentoring Award
Peter B. Kelly, Ph.D., Professor
Kirk I. Konnur, Ph.D., Assistant Professor
Mark J. Kurth, Ph.D., Professor
Donald P. Land, Ph.D., Professor
Delmar Larsen, Ph.D., Associate Professor
Carillo B. Lebrilla, Ph.D., Professor
Gang-Yu Liu, Ph.D., Professor
C. William McCurdy, Ph.D., Professor
Mark Mascal, Ph.D., Professor
Krishnan P. Nambari, Ph.D., Associate Professor

Distinguished Graduate Mentoring Award
Alexandra Narvotsky, Ph.D., Professor
Cheuk-Yiu Ng, Ph.D., Professor
Marilyn Olmstead, Ph.D., Professor
Frank Osterloh, Ph.D., Professor
Philip P. Power, FRS, Ph.D., Professor
Neil E. Schore, Ph.D., Professor

Academic Senate Distinguished Teaching Award
Jared T. Shaw, Ph.D., Associate Professor
Justin Siegel, Ph.D., Assistant Professor
Alexei P. Stuchebrukho, Ph.D., Professor
Dean Tantillo, Ph.D., Professor

Academic Senate Distinguished Teaching Award
Michael Toney, Ph.D., Professor

Emireri Faculty
Thomas L. Allen, Ph.D., Professor Emeritus
W. Ronald Fawcett, Ph.D., Professor Emeritus
William H. Fink, Ph.D., Professor, Emeritus
Edwin Friedichi, Ph.D., Professor Emeritus
Hokon Hope, Cand. Real., Professor Emeritus
William M. Jackson, Ph.D., Professor Emeritus
Gerd N. Lakshmi, Ph.D., Professor Emeritus
Claude F. Meares, Ph.D., Professor Emeritus
W. Kenneth Musker, Ph.D., Professor Emeritus
Carl W. Schmid, Ph.D., Professor, Emeritus
James H. Swinehart, Ph.D., Professor Emeritus
Dino S. Tink, Ph.D., Professor, Emeritus
Nancy S. True, Ph.D., Professor Emeritus
George S. Zweifel, Sc.D., Professor Emeritus

Affiliated Faculty
Toby Allen, Ph.D., Adjunct Professor
Gilia Galli, Ph.D., Adjunct Professor

The Major Programs
Chemistry studies the composition of matter, its structure, and the means by which it is converted from one form to another.

The Program. The Department of Chemistry offers several degree programs leading to the Bachelor of Arts and the Bachelor of Science. The curriculum leading to the A.B. degree offers a substantive program in chemistry while allowing students the freedom to take more courses in other disciplines and pursue a broad liberal arts education. Students who have a deeper interest in chemistry normally elect one of the several programs leading to the B.S. degree. The standard B.S. program, the only chemistry program accredited by the American Chemical Society, is appropriate for students who are interested in chemistry as a profession. The B.S. in Chemical Physics, the B.S. in Pharmaceutical Chemistry, and the two B.S. Applied Chemistry emphases are slightly less intense in chemistry, and draw on significant course materials from areas relevant to their particular focus but outside of a classical chemistry degree. Students following the A.B. or one of the B.S. programs may consider taking advantage of the Education Abroad Program. Our major adviser can assist students in planning a curriculum while abroad that assures regular progress in the major. A minor program in chemistry is also available.

Career Alternatives. Chemistry graduates with bachelor’s degrees are employed extensively throughout various industries in quality control, research and development, production supervision, technical marketing, and other areas. The types of industries employing these graduates include chemical, energy, pharmaceutical, genetic engineering, and biotechnology, food and beverage, petroleum and petrochemical, paper and textile, electronics and computer, and environmental and regulatory agencies. The bachelor’s degree program provides also chemistry graduates with the rigorous preparation needed for an advanced degree in chemistry and various professional schools in the health sciences.

Chemistry

A.B. Major Requirements:

Preparatory Subject Matter.................36-42
Chemistry 2A-2B-2C or 2AH-2BH-2CH......15
Physics 7A-7B-7C or 9A-9B-9C..............12-15
Mathematics 16A-16B-16C or 17A-17B-17C in 21A-21B-21C.................................9-12

Depth Subject Matter.......................43
At least 1 additional upper division units in chemistry (except Chemistry 107A or 107B) or related areas, including one course with formal lectures. Courses in related areas must be approved in advance by the major adviser.

Total Units for the Major...................79-85

Chemistry

ACS Accredited Program

B.S. Major Requirements:

Preparatory Subject Matter...............53
Chemistry 2A-2B-2C or 2AH-2BH-2CH......15
Physics 7A-7B-7C or 9A-9B-9C..............12-15

Depth Subject Matter.......................54

Quarter Offered: I-Fall, II-Winter, III-Spring, IV-Summer; 2015-2016 offering in parentheses

Pre-Fall 2011 General Education (GE): AH=Arts and Humanities; SE=Science and Engineering; SS=Social Sciences; ACH=American Cultures; DD=Dominant Diversity; WRW=Writing Experience

Fall 2011 and on Revised General Education (GE): AH=Arts and Humanities; SE=Science and Engineering; SS=Social Sciences; ACH=American Cultures; DD=Dominant Diversity; OL=Oral Skills; QL=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience