

## CHEM - Chemistry Courses

### CHEM B1A General Chemistry I

5 units

**Prerequisites:** BC placement into reading level 06 and writing level 06 and math level 04 or successful completion of ACDV B50 or ACDV B61 or equivalent and ENGL B50 or equivalent and MATH B70 or equivalent CHEM B2A or High School Chemistry, or equivalent with a grade of C or better.

**Description:** Basic principles of chemistry, including atomic structures, stoichiometry, reaction energy, chemical bonding, periodic relationships of the elements, states and properties of matter, solutions, introduction to acids and bases, a brief introduction to descriptive chemistry of the elements, and other topics as appropriate. The lab emphasizes quantitative methods.

**C-ID:** CHEM 110 (Taking both CHEM B1A AND CHEM B1B is the C-ID Equivalent of CHEM 120S)

**Hours:** 54 lecture, 108 lab

**Transferable:** CSU, UC, and private colleges; IGETC 5.A; IGETC 5.C; CSU GE B.1; CSU GE B.3; BC GE B.1

### CHEM B1B General Chemistry and Chemical Analysis

5 units

**Prerequisites:** BC placement into math level 04 or successful completion of MATH B70 and CHEM B1A or equivalent with a grade of C or better.

**Recommended:** Chemistry prerequisite accomplished within two years prior to taking this class.

**Description:** Continuation of CHEM B1A. Includes kinetics; equilibrium; thermodynamics; equilibrium as it applies to acid-base, solubility, and electrochemistry; nuclear chemistry; coordination chemistry; the descriptive chemistry of selected elements; and an introduction to organic chemistry. The lab includes qualitative analysis, quantitative techniques, and descriptive experiments.

**C-ID:** CHEM 120S (for taking CHEM B1A + B1B)

**Hours:** 54 lecture, 108 lab

**Transferable:** CSU, UC, and private colleges

### CHEM B2A Introductory General Chemistry

4 units

**Prerequisites:** BC placement into reading level 06 and writing level 06 and math level 03 or successful completion of ACDV B50 or ACDV B61 or equivalent and ENGL B50 or equivalent and MATH B60 or equivalent with a grade of C or better.

**Description:** Course covers the principles and applications of general college chemistry. It is designed for liberal arts, physical education and some baccalaureate nursing majors. Recommended also for students who need additional background for the more intensive course, CHEM B1A.

**Note:** Not open to students with credit in CHEM B1A.

**C-ID:** CHEM 101

**Hours:** 54 lecture, 54 lab

**Transferable:** CSU, UC, and private colleges; IGETC 5.A; IGETC 5.C; CSU GE B.1; CSU GE B.3; BC GE B.1

### CHEM B11 Introduction to General, Organic, and Biochemistry

5 units

**Prerequisites:** BC placement into reading level 06 and math level 03 or successful completion of ACDV B50 or ACDV B61 or equivalent and MATH B60 or equivalent with a grade of C or better.

**Description:** An introduction to general, organic, and biochemistry

using a qualitative and quantitative approach. Topics include physical principles of chemistry; inorganic compounds and reactions; a survey of organic chemistry-classification, compounds, reactions, nomenclature; biochemistry-classification, composition, reactions in living organisms.

**Hours:** 54 lecture, 108 lab

**Transferable:** CSU, UC, and private colleges; IGETC 5.A; IGETC 5.C; CSU GE B.1; CSU GE B.3; BC GE B.1

### CHEM B18 Elementary Organic Chemistry

5 units

**Prerequisites:** Successful completion of CHEM B1A or equivalent with a grade of C or better or CHEM B2A or equivalent with a grade of B or better or instructor's approval.

**Description:** Introduction to and study of the chemistry of organic compounds: the functional groups, representative types of, theory behind, organic reactions, and the biological classes of proteins, fats, carbohydrates, and nucleic acids. Will prepare students well for further study in organic chemistry, and serve those interested in the sciences and related fields, including ones requiring a semester of organic chemistry for transfer/entrance. The lab covers fundamental techniques including separations, synthesis, identification, and instrumental analysis.

**Hours:** 54 lecture, 108 lab

**Transferable:** CSU, UC, and private colleges; IGETC 5.A; IGETC 5.C; CSU GE B.1; CSU GE B.3; BC GE B.1

### CHEM B30A Organic Chemistry for Science Majors, I

5 units

**Prerequisites:** Successful completion of CHEM B1B with a grade of C or better.

**Description:** This is the first semester of a one-year course in organic chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, pre-medicine, and related areas). Taken as a sequence, the course covers fundamental principles and concepts of organic chemistry including (but not limited to) bonding, molecular structure, the standard functional groups, nomenclature, stereochemistry, reactions, and mechanisms. Strong emphasis is placed on reaction mechanisms, stereochemistry, multi-step syntheses, and structure elucidation using hands-on modern instrumental methods (multinuclear NMR, FT-IR, GC, etc.). In addition, various modern computational techniques and an introduction to bio-molecules are presented. The lab covers preparative and modern analytical techniques and instrumentation, exposure to a variety of reactions and procedures, performing multistep syntheses, and safety and ecologically friendly protocols.

**Hours:** 54 lecture, 108 lab

**C-ID:** CHEM 160S (Taking both CHEM B30A AND CHEM B30B is the C-ID Equivalent of CHEM 160S)

**Transferable:** CSU, UC, and private colleges; CSU GE B.1

### CHEM B30B Organic Chemistry for Science Majors, II

5 units

**Prerequisites:** Successful completion of CHEM B30A with a grade of C or better.

**Description:** This is the second semester of a one-year course in organic chemistry intended for majors in the natural sciences (chemistry, biochemistry, biology, physics, pre-medicine, and related areas). Taken as a sequence, the course covers fundamental

principles and concepts of organic chemistry including, but not limited to structure, bonding, nomenclature, stereochemistry, the standard functional groups, reactions, and mechanisms. Special emphasis is placed on reaction mechanisms, stereochemistry of reactions, multi-step syntheses, and structure elucidation using modern instrumental methods (multinuclear NMR, FT-IR, GC, etc.). In addition, various modern computational techniques and an introduction to bio-molecules are presented.

**Hours:** 54 lecture, 108 lab

**C-ID:** CHEM 160S

**Transferable:** CSU, UC, and private colleges; CSU GE B.1

# Courses

## CHEM - Chemistry Courses

### CHEM B1A General Chemistry I

5 units

**Prerequisites:** BC placement into reading level 06 and writing level 06 and math level 04 or successful completion of ACDV B50 or ACDV B61 or equivalent and ENGL B50 or equivalent and MATH B70 or equivalent, and CHEM B2A or High School Chemistry, or equivalent with a grade of C or better.

**Description:** Basic principles of chemistry, including atomic structures, stoichiometry, reaction energy, chemical bonding, periodic relationships of the elements, states and properties of matter, solutions, introduction to acids and bases, a brief introduction to descriptive chemistry of the elements, and other topics as appropriate. The lab emphasizes quantitative methods.

**C-ID:** CHEM 110 (Taking both CHEM B1A AND CHEM B1B is the C-ID Equivalent of CHEM 120S)

**Hours:** 54 lecture, 108 lab

**Transferable:** CSU, UC, and private colleges; IGETC 5.A; IGETC 5.C; CSU GE B.1; CSU GE B.3; BC GE B.1

### CHEM B10 Chemistry and Society

3 units

**Prerequisites:** Successful completion of MATH B60 with a grade of C or better or BC placement into math level 03 and successful completion of ACDV B50 with a grade of C or better or BC placement into reading level 06 or equivalent.

**Description:** This course introduces student to basic concepts of chemistry and requires analyses of socio-cultural contexts within which chemistry plays a central role. Major topics will include environmental issues, energy, and health. This course is not recommended for science or health-science majors. An outside activity will be required.

**Hours:** 36 Lecture, 54 Lab

**Transferable:** CSU and private colleges.

## MUSC - Music Courses

### MUSC B4A Elementary Theory

3 units

**Prerequisites:** Successful completion of MUSC B2 or equivalent with a grade of C or better.

**Corequisite:** MUSC B15A must be taken concurrently.

**Description:** A study of common practice harmony. Diatonic harmony including scales, key signatures, triad and seventh chord constructions and 4-part voice leading including phrase structure.

**Hours:** 54 lecture

**C-ID:** MUS 130

**Transferable:** CSU, UC, and private colleges; IGETC 3.A; CSU GE C.1; BC GE C.1

## PHIL - Philosophy Courses

### PHIL B9 Critical Thinking and Advanced Composition

3 units

**Prerequisites:** Successful completion of ENGL B1A or equivalent with a grade of C or better.

**Description:** Development of critical thinking skills necessary for evaluating and formulating argumentative/ persuasive essays, and practice in applying those skills.

**Hours:** 54 lecture

**Transferable:** CSU, UC, and private colleges; IGETC 1.B; CSU GE A.3; CSU GE C.2; BC GE B.2