COURSES

CHEMISTRY COURSES

CHEM 1A - General College Chemistry I

5 units

Introduction to atomic structure, bonding, stoichiometry, thermochemistry, gases, matter and energy, oxidation-reduction, chemical equations, liquids and solids, solutions, chemical energetics and equilibrium concepts. Laboratory includes both quantitative and qualitative experiments. 54 hours lecture, 108 hours laboratory. AA/AS GE: II. Tansfer: CSU, UC*; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 110, CHEM 120 S (if taken with CHEM 1B). * *CHEM 1A and 30A combined: maximum UC credit; one course.*

Prerequisite: CHEM 31 with a minimum grade of C, the CHEM 31 prerequisite can be fulfilled by demonstrating the appropriate skill level in the Chemistry Placement Process. Intermediate Algebra or a higher level of mathematics.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 1B - General College Chemistry II

5 units

Continuation of Chemistry 1A. Includes chemical energetics and equilibria, solutions and ionic equilibria, acid-base chemistry, electrochemistry, coordination chemistry, kinetics, nuclear chemistry, organic chemistry, and the chemistry of family groups of the periodic table. Laboratory emphasizes quantitative techniques, including instrumentation, and qualitative analysis. 54 hours lecture, 108 hours laboratory. AA/AS GE: II. Transfer: CSU, UC*; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 120 S (if taken with CHEM1A). * *CHEM 1B and 30B combined: maximum UC credit, one course.*

Prerequisite: CHEM 1A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 6 - Environmental Chemistry

4 units

This course presents the fundamentals of chemistry as applied to contemporary environmental topics concerning the atmosphere, water, solids, and green chemistry. The course is suitable for non-science majors with an interest in environmental issues. 54 hours lecture, 54 hours laboratory. Transfer: CSU, UC; C-ID# CHEM 106B.

Prerequisite: Elementary Algebra or a higher level of mathematics.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP

CHEM 12A - Organic Chemistry I

5 units

Hydrocarbons, alkyl halides, alcohols, ethers, and an introduction to aromatic hydrocarbons. Structure, bonding, stereochemistry, conformational analysis, nomenclature, and physical properties in relation to these particular groups of compounds. Emphasis on reactivity and reaction mechanisms. Laboratory work includes microscale, macroscale, spectroscopic, and chromatographic techniques. Chemistry 12A is the first semester in a year long course in organic chemistry designed for students majoring in chemistry and related disciplines. 54 hours lecture, 108 hours laboratory. AA/AS GE: II. Transfer: CSU, UC; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 150, CHEM 160 S (if taken with CHEM 12B).

Prerequisite: CHEM 1B with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 12B - Organic Chemistry II

5 units

Continuation of Chemistry 12A with an introduction to the chemistry of aromatics, amines, enols and enolate ions, carboxylic acids, aldehydes, ketones and biochemical topics focusing on structure, synthesis and mechanisms of reaction. Laboratory work in basic techniques, synthetic methods, qualitative, spectroscopic, and chromatographic analysis techniques designed for students whose interests require a full year in-depth study of organic chemistry. 54 hours lecture, 108 hours laboratory. AA/AS GE: II. Transfer: CSU, UC; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 160 S (if taken with CHEM 12A).

Prerequisite: CHEM 12A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 29 - Independent Study, Chemistry

0.5 - 2 units

For course information, see "Independent Studies". 27-108 hours lab. 27 hours laboratory. Transfer: CSU.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 30A - Introductory and Applied Chemistry I

4 units

Chemistry of inorganic compounds, atomic theory, bonding, equations, gas laws, solutions, acid-base theory and oxidation-reduction. Designed to meet the requirements of certain programs in allied health and technological fields and for general education. 54 hours lecture, 54 hours laboratory. AA/AS GE: II. Transfer: CSU, UC*; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 101. * *CHEM 1A and 30A combined: maximum UC credit; one course.*

Prerequisite: Elementary Algebra or a higher level of mathematics.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 30B - Introductory and Applied Chemistry II

4 units

Continuation of Chemistry 30A with emphasis on organic and biochemical concepts related to human physiological systems. 54 hours lecture, 54 hours laboratory. AA/AS GE: II. Transfer: CSU, UC*; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 102. * *CHEM 1B and 30B combined: maximum UC credit; one course.*

Prerequisite: CHEM 30A with a minimum grade of C.

- Credit - Degree Applicable
- Grading Option: Letter Grade

CHEM 31 - Introduction to College Chemistry

4 units

Elementary concepts of chemistry with emphasis on mathematical calculations; includes nomenclature, stoichiometry, atomic structure, gas laws, and acids and bases. Designed for majors in science and engineering. 54 hours lecture, 54 hours laboratory. AA/AS GE: II. Transfer: CSU, UC*; CSUGE: B1, B3; IGETC: 5A, 5C; C-ID# CHEM 101. * *No UC credit if taken after CHEM 1A or 30A.*

Prerequisite: Intermediate Algebra or a higher level of mathematics.

- Credit - Degree Applicable
- Grading Option: Letter or P/NP