

CHEMISTRY (CHEM)

CHEM 001A GENERAL CHEMISTRY AND CHEMICAL ANALYSIS I 5 unit

Transfer Credit: CSU; UC credit limitations. See counselor.

C-ID: CHEM 110; CHEM SEQ 120S (with CHEM 001B)

Prerequisite(s): (1) MATH 131 or its equivalent, and (2) CHEM 022 or equivalent skills as demonstrated through placement based on the chemistry assessment process

Standard general chemistry for science and engineering majors, with emphasis on quantitative methods and calculations. Atomic structure and chemical bonding, stoichiometry, gases, liquids, solids and solution chemistry. Introductions to equilibrium and organic chemistry. Quantitative analysis using analytical balances, gravimetric and volumetric procedures, spectrophotometry and calorimetry. Total of 54 hours lecture and 108 hours laboratory.

Grade Mode: Letter Grade, Pass/No-Pass

CHEM 001B GENERAL CHEMISTRY AND CHEMICAL ANALYSIS 5 unit

Transfer Credit: CSU; UC credit limitations. See counselor.

C-ID: CHEM SEQ 120S

Prerequisite(s): CHEM 001A

This is the second course of a two course General Chemistry sequence. Standard general chemistry for science and engineering majors, with emphasis on quantitative methods and calculations. Kinetics, equilibrium, thermodynamics, introduction to electrochemistry, coordination compounds, nuclear chemistry, and the chemistry of selected metals and nonmetals, potentiometric titrations and electrochemical cells. Total of 54 hours lecture and 108 hours laboratory.

Grade Mode: Letter Grade, Pass/No-Pass

CHEM 002A CHEMISTRY - GENERAL, ORGANIC AND BIOCHEMISTRY I 4 unit

Transfer Credit: CSU; UC credit limitations. See counselor.

C-ID: CHEM 101

Prerequisite(s): MATH 150

Principles of chemistry for health science majors. Atomic and molecular structure, chemical bonding, nomenclature, chemical reactions and stoichiometry, gases, solutions, acids and bases, pH, buffers, nuclear and organic chemistry. No credit if taken after CHEM 001A. Total of 54 hours lecture and 72 hours laboratory.

Grade Mode: Audit, Letter Grade, Pass/No-Pass

CHEM 002B CHEMISTRY-GENERAL, ORGANIC AND BIOCHEMISTRY II 4 unit

Transfer Credit: CSU; UC credit limitations. See counselor.

C-ID: CHEM 102

Prerequisite(s): CHEM 002A

Principles of chemistry for health science majors. Organic and biochemistry: reaction mechanisms, kinetics, enzymes, protein synthesis and metabolism. Total of 54 hours lecture and 72 hours laboratory.

Grade Mode: Audit, Letter Grade, Pass/No-Pass

CHEM 008A ORGANIC CHEMISTRY I 5 unit

Transfer Credit: CSU; UC

C-ID: CHEM 150; CHEM SEQ 160S (with CHEM 008B)

Prerequisite(s): CHEM 001B

Fundamental principles and concepts of organic chemistry for science majors. Structure, bonding, nomenclature, isomerism, stereochemistry and physical properties of organic compounds. A mechanistic approach to the reactions of hydrocarbons, alkyl halides, alcohols, dienes, aromatic compounds, organometallics, IR and NMR spectroscopy and mass spectrometry. Introduction to organic laboratory techniques; preparation, isolation and identification of organic compounds. Total of 54 hours lecture and 108 hours laboratory.

Grade Mode: Audit, Letter Grade, Pass/No-Pass

CHEM 008B ORGANIC CHEMISTRY II 5 unit

Transfer Credit: CSU; UC

C-ID: CHEM SEQ 160S

Prerequisite(s): CHEM 008A

Second semester course in a 2-semester sequence covering organic chemistry for science majors. A mechanistic approach to the reactions of alcohols, phenols, ethers and epoxides, aldehydes, ketones, carboxylic acids and their derivatives and amines. Photochemistry, organic redox, polymerization, rearrangements, synthesis and an introduction to biochemical molecules. Qualitative analysis, natural products, multistep synthesis and kinetics. Total of 54 hours lecture and 108 hours laboratory.

Grade Mode: Audit, Letter Grade, Pass/No-Pass

CHEM 020 INDEPENDENT STUDY 1 unit

Transfer Credit: CSU

Recommended Preparation: Enrollment in or completion of any college-level (1-99) course in the Natural Sciences

Enrollment Limitation: Permission of the Dean

Independent, faculty-guided student inquiry, project, research, laboratory experiment and/or field investigation. Total of 54 hours laboratory.

Grade Mode: Letter Grade, Pass/No-Pass

CHEM 022 INTRODUCTORY CHEMISTRY 4 unit

Transfer Credit: CSU; UC credit limitations. See counselor.

C-ID: CHEM 101

Prerequisite(s): Enrollment in or completion of MATH 131 or equivalent

Introduction to the principles of chemistry with emphasis on quantitative methods and calculations. For science and engineering majors needing preparation for CHEM 001A, but open to all qualified students. Total of 54 hours lecture and 72 hours laboratory.

Grade Mode: Audit, Letter Grade, Pass/No-Pass

CHEM 108 PROBLEM SOLVING SKILLS FOR SUCCESS IN ORGANIC CHEMISTRY

1 unit

Corequisite(s): *CHEM 008B*

Development and rigorous practice of essential study techniques and course material for success in CHEM 008B. Integration of supplemental instruction, problem solving strategies and critical thinking skills. Pass/no pass grading. Total of 18 hours lecture.

Grade Mode: *Audit, Pass/No-Pass*