CHEMISTRY

Career Opportunities

B.S. Level
(Most careers require bachelors or graduate degree)

Chemist	Chemical Analyst
Laboratory Technician	Research Assistant
Research Scientist	Biochemist

Faculty

Full-Time

Luanne Crockett	Yong C. Ma

Part-Time

Terry Boan	Jay Crane
Joe Escobar	

Chemistry Courses

CHEM R100—Chemistry and Environment **4 units**
4 hours lecture weekly
CHEM R100 is a college-level one-semester course in chemistry for non-science majors. This is an introductory course into fundamental chemical principles and the relationship these principles have on society and the environment. The impact of chemistry on technology, society, and the individual will be discussed. The lecture topics include scientific method, atomic and kinetic-molecular theories, states of matter, measurements, electronic structure, bonding periodicity, nomenclature, chemical reactions, energy production, thermodynamics, ionic equilibrium, pH, kinetics, as well as structures, classifications, and reactions of organic/bio-organic materials. Field trips may be required. (2)
Transfer credit: UC, CSU

CHEM R100L—Chemistry and Environment Lab **1 unit**
Prerequisites: CHEM R100 or concurrent enrollment.
3 hours lab weekly.
CHEM R100L is a laboratory course designed to complement CHEM R100. This course offers basic laboratory and analytical problem solving skills through both experimentation and demonstration. CHEM R100L is not designed for students majoring in science and engineering. Students may take field trips during the lab period. (2)
Transfer credit: UC, CSU

CHEM R110—Elementary Chemistry **5 units**
Prerequisites: MATH R011 or 1 year high school algebra or equivalent.
4 hours lecture, 3 hours lab weekly
This is an introductory course in chemistry stressing basic principles of atomic and molecular structure, periodic table and states of matter, as well as quantitative techniques involved in elementary chemical calculations; there is some discussion of nuclear, organic, and bio-chemistry. The course serves as an introduction to lab techniques with experiments illustrating principles covered in lectures. Field trips may be required. Formerly CHEM 100A. (2)
Transfer credit: UC, CSU

CHEM R112—Elementary Organic and Biological Chemistry **5 units**
Prerequisites: CHEM R110.
4 hours lecture, 3 hours lab weekly
This course is a continuation of CHEM R110. CHEM R112 includes equilibrium, oxidation-reduction, simple electrochemistry, and radioactivity. The major emphasis will be on organic chemistry. The section of organic chemistry includes: naming; structure and bonding; classification by functional groups and reactions; polymerization; optical isomerism; physical properties based on molecular polarity. Biochemistry may include carbohydrates, proteins and amino acids, fats, enzymes, DNA and RNA, and cell biochemistry. The lab illustrates the principles covered in the lecture. Field trips may be required. Formerly CHEM 100B. (2)
Transfer credit: UC, CSU

CHEM R120—General Chemistry I **5 units**
Prerequisites: CHEM R110 or high school chemistry, and MATH R014.
3 hours lecture, 6 hours lab weekly
This course studies fundamental principles and theories of chemistry with special emphasis on calculations of solution chemistry, stoichiometry, chemical equilibrium and oxidation-reduction; includes discussion of quantum mechanical model of the atom, kinetic-molecular theory, and periodic table. Lab is designed to develop quantitative relationships through experiments, and to introduce inorganic preparative procedures and computer analysis of data. Field trips may be required. Formerly CHEM 101. (2)
Transfer credit: UC, CSU (CAN: CHEM 2)

CHEM R122—General Chemistry II **5 units**
Prerequisites: CHEM R120.
3 hours lecture, 6 hours lab weekly
CHEM R122 is a continuation course of CHEM R120 with emphasis on solution equilibria, kinetics, electrochemistry, radiochemistry, transition metal chemistry, and descriptive chemistry of the elements. Lab work includes qualitative analysis, thermochemistry, and kinetic studies, and further develops inorganic preparative techniques. Computers are utilized for data acquisition and interpretation. Field trips may be required. Formerly CHEM 102. (2)
Transfer credit: UC, CSU (CAN: CHEM 4)

CHEM R130—Organic Chemistry I **5 units**
Prerequisites: CHEM R120 and CHEM R122.
3 hours lecture, 6 hours lab weekly
CHEM R130 studies the fundamental principles of organic chemistry with the emphasis upon practical application of modern principles to functional groups, reactivity, physical properties, and methods of synthesis of organic compounds. The lab portion of the course will give concrete examples of lecture materials. Field trips may be required. Formerly CHEM 106. (2)
Transfer credit: UC, CSU

CHEM R132—Organic Chemistry II **5 units**
Prerequisites: CHEM R130.
3 hours lecture, 6 hours lab weekly
CHEM R132 is a continuation course of CHEM R130 with emphasis on oxygen-containing and nitrogen-containing organic substances, polymers, carbohydrates, proteins, lipids, and other biomolecules. The lab will involve multiple-step synthesis from smaller molecules to larger molecules. Field trips may be required. Formerly CHEM 107. (2)
Transfer credit: UC, CSU