CHEMISTRY

Division: Natural Sciences

Division Dean

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Stephanie Nobles

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Mohammad Shahin

- Chemistry Associate in Arts Degree (https://catalog.nocccd.edu/fullerton-college/degrees-certificates/chemistry/chemistry-associate-arts-degree/)
- Chemistry Associate in Science Degree (https://catalog.nocccd.edu/fullerton-college/degrees-certificates/chemistry/chemistry-associate-science-degree/)
- Chemistry Associate in Science Degree for Transfer (https://catalog.nocccd.edu/fullerton-college/degrees-certificates/chemistry/chemistry-associate-in-science-degree-for-transfer/)
- Chemistry Associate in Science Degree for UC Transfer (https://catalog.nocccd.edu/fullerton-college/degrees-certificates/chemistry/chemistry-associate-in-science-degree-for-uc-transfer/)

CHEM 100 F Chemistry for Daily Life **4 Units**

54 hours lecture and 54 hours lab per term. This course focuses on the practical significance of the fundamental concepts of chemistry in the context of societal, political and economic issues that impact our world. Units may include, but are not limited to the following: the chemistry of the atmosphere and water, fission and fusion, energy, chemistry, and society, pharmaceutical, new materials, the chemistry of nutrition and agriculture. Student participation is stressed individually and in groups, through written and oral assignments. The laboratory provides hands-on experience with chemical phenomena. This course is designed for the non-science major seeking a lab science. (Degree Credit) (CSU) (UC Credit Limitation; no credit if taken after CHEM 111AF) AA GE, CSU GE, IGETC

CHEM 101 F Chemistry for Allied Health Science **5 Units**

Prerequisite(s): MATH 040 F with a grade of C or better or by assessment through the college's multiple measure placement processes.

72 hours lecture, 54 hours lab and 18 hours problem solving per term. This course provides an introduction to the principles of inorganic and organic chemistry. This course includes a lab and will meet physical science transfer requirements. This is a course required of numerous allied health science majors. (Degree Credit) (CSU) (UC Credit Limitation; no credit if taken after CHEM 111AF) AA GE, CSU GE, IGETC (C-ID: CHEM 101, CHEM 140, PHYS 140)

CHEM 103 F Chemistry in a Changing World **3 Units**

54 hours lecture per term. This course is intended for non-science students seeking general education credit in a physical science course without a laboratory. Course emphasizes basic principles of chemistry and their relationship to the modern world. This course will foster an interest in science by preparing student to make effective decisions, and by developing thinking skills that can be applied to challenges in a changing world. Topics include air and water pollution, energy resources, basic biochemistry, and current scientific developments involving chemistry. (Degree Credit) (CSU) (UC Credit Limitation: no credit if taken after CHEM 111AF) AA GE, CSU GE, IGETC

CHEM 107 F Preparation for General Chemistry **5 Units**

Prerequisite(s): MATH 040 F with a grade of C or better or by assessment through the college's multiple measures placement processes.

Advisory: MATH 141 F or MATH 141HF or MATH 143 F.

72 hours lecture, 54 hours lab and 18 hours problem solving per term. This course is strongly recommended for students who have not had high school chemistry or who earned a grade of C or less in the high school course. The fundamental principles of chemistry are stressed, with emphasis on the chemistry of inorganic compounds. Includes atomic structure, chemical bonding, descriptive chemistry, stoichiometry, gas laws, solutions, equilibrium and redox. This course is intended to prepare students specifically for CHEM 111AF and CHEM 111BF. Lab work supports topics of CHEM 107 F. (Degree Credit) (CSU) (UC Credit Limitation; no credit if taken after CHEM 111AF) AA GE, CSU GE, IGETC

CHEM 111AF General Chemistry I **5 Units**

Prerequisite(s): CHEM 107 F with a grade of C or better, or a passing score on the Chemistry Proficiency Test and MATH 141 F or MATH 141HF or MATH 143 F, with a grade of C or better, or by assessment through the college's multiple measures placement processes.

54 hours lecture, 54 hours lab, 36 hours problem solving, and 18 hours discussion per term. This course covers the topics of chemical reactions and stoichiometry, thermochemistry and calorimetry, atomic structure and chemical periodicity, chemical bonding, molecular structure, gases, physical properties of solids, liquids and solutions, and organic chemistry. The laboratory sequence will support the above topics including both qualitative and quantitative experiments, analysis of data and error propagation. (CSU) (UC) (Degree Credit) AA GE, CSU GE, IGETC (C-ID: CHEM 110, CHEM 120 S)

CHEM 111BF General Chemistry II **5 Units**

Prerequisite(s): CHEM 111AF with a grade of C or better

54 hours lecture, 54 hours laboratory, 36 hours problem solving, and 18 hours discussion per term. This course covers the topics of kinetics, equilibria, acid and bases, thermodynamics, electrochemistry, transition metals, coordination compounds, and nuclear chemistry. The laboratory sequence will support the above topics including both qualitative and quantitative experiments, analysis of data and error propagation. (CSU) (UC) (Degree Credit) AA GE, CSU GE, IGETC (C-ID: CHEM 120 S)

CHEM 201 F Biochemistry for Allied Health Science **5 Units**

Prerequisite(s): CHEM 101 F with a grade of C or better

72 hours lecture, 36 hours lab, 18 hours problem solving and 18 hours discussion per term. This course is the second semester of a two semester sequence (CHEM 101 F and CHEM 201 F). This course is a study of organic chemistry: structures, nomenclature, reactions and functions of organic and biochemical compounds; cell structure, metabolism, bioenergetics, biochemical genetics, and mechanisms of vitamin and enzyme action. This course is designed for the health professions. (Degree Credit) (CSU) (UC Credit Limitation) (C-ID: CHEM 102)

CHEM 211AF Organic Chemistry I **5 Units**

Prerequisite(s): CHEM 111BF with a grade of C or better

54 hours lecture, 72 hours lab and 36 hours discussion per term. This course is the first part of a full year organic chemistry course designated primarily for chemistry majors but strongly recommended for pre-medical, pre-dental, pre-veterinary, pre-chiropractic, and biology majors. Emphasis is upon fundamental concept and application to molecular structure and chemical reactivity. Considerable stress is placed upon reaction mechanism, energetics, syntheses, stereochemistry, and molecular spectroscopy. Laboratory work includes techniques such as distillation, extraction, chromatography, and synthesis and qualitative analysis. (CSU) (UC Credit Limitation) (Degree Credit) (C-ID: CHEM 150, CHEM 160 S)

CHEM 211BF Organic Chemistry II **5 Units**

Prerequisite(s): CHEM 211AF with a grade of C or better,

54 hours lecture, 72 hours lab and 36 hours discussion per term. This course is the second part of a full year organic chemistry course designed primarily for chemistry majors but strongly recommended for pre-medical, pre-dental, pre-veterinary, pre-chiropractic, and biology majors. Aliphatic and aromatic compounds are integrated with the functional group approach maintained. Considerable emphasis is placed upon reaction mechanism, energetics, syntheses, stereochemistry, and spectroscopy. Laboratory work is on synthesis and qualitative analysis employing techniques learned in CHEM 211AF. (CSU) (UC) (Degree Credit) (C-ID: CHEM 160 S)