

CHM - CHEMISTRY

CHM 101 4 credit hours (lecture: 3 | lab: 3)

Introductory Chemistry

Course introduces the basic concepts and language of chemistry; includes lectures and weekly hands-on laboratory. Content includes classification, properties and states of matter; measurements; atomic structure and bonding; properties of gases; chemical reactions and stoichiometry.

Similar to CHM 105, but more in-depth coverage of fewer topics. Credit cannot be received for both CHM 101 and CHM 105.

Prerequisite: MAT 070 (formerly MAT 051) or MAT 052 with a grade of P; or MAT 114 with minimum grade of C; or placement into a higher MAT course; or consent of instructor. COL 101 is recommended.

IAI General Education: P1 902L

Delivery mode: Face-to-Face | Hybrid | Online Fee: \$40

CHM 105 4 credit hours (lecture: 3 | lab: 3)

Elements of Chemistry

Course is one-semester survey of concepts of general, organic and biochemistry. Content includes classification, properties and states of matter; atomic structure and bonding; reactions of some inorganic compounds; a survey of functional groups, structure and properties of organic and biochemical compounds. Intended for students preparing for nursing and certain other health career programs. Credit cannot be received in both CHM 101 and CHM 105.

Prerequisite: MAT 070, (formerly MAT 051) or MAT 052 with a grade of P; or MAT 114 with minimum grade of C; or placement into a higher MAT course; or consent of instructor.

IAI General Education: P1 902L

Delivery mode: Face-to-Face | Online Fee: \$40

CHM 121 4 credit hours (lecture: 3 | lab: 3)

General College Chemistry I

Course is first of two semester sequence (CHM 121 and CHM 122). Content includes the periodic table of elements, atomic structure, basic concepts of quantum theory, stoichiometry of compounds and reactions, thermochemistry, molecular structure, bonding, intermolecular interactions, the gaseous state, and solutions. Weekly hands-on lab activities. Intended for students enrolled in science and/or pre-professional curricula.

Prerequisite: MAT 095 or MAT 110 with minimum grade of C, and one year of high school chemistry or CHM 101 or CHM 105 with minimum grade of C, or consent of instructor.

Recommended: MAT 140 or MAT 149.

IAI General Education: P1 902L

IAI Major: CHM 911

Delivery mode: Face-to-Face | Online Fee: \$40

CHM 122 4 credit hours (lecture: 3 | lab: 3)

General College Chemistry II

Course continues CHM 121. Content includes kinetics, chemical equilibrium, acid-base theory and equilibria, solubility equilibria, electrochemistry, thermodynamics, nuclear chemistry, coordination compounds, and an introduction to organic and biochemistry. Weekly laboratory activities.

Prerequisite: MAT 140 or MAT 149 with minimum grade of C, and CHM 121 with minimum grade of C, or consent of instructor.

IAI Major: CHM 912

Delivery mode: Face-to-Face | Online Fee: \$40

CHM 207 5 credit hours (lecture: 3 | lab: 4)

Elementary Organic Chemistry

Course is one-semester survey of organic chemistry. Content includes an introduction and overview of the structure, nomenclature, properties, preparation, and reactions of the main organic functional groups; introduces biochemistry, including categories of bio-molecules and pharmaceuticals. Two weekly hands-on lab sessions. Intended for those whose curriculum requires only one semester of organic chemistry.

Prerequisite: CHM 101, or CHM 105, or CHM 121, with minimum grade of C in all courses, or consent of instructor.

Delivery mode: Face-to-Face | Hybrid | Online Fee: \$45

CHM 221 4 credit hours (lecture: 3 | lab: 3)

Organic Chemistry I

Course is first of two-course sequence (CHM 221 and CHM 222). Content presents theories, structures, and reactions of organic chemistry, including the properties of various functional groups; bonding and structure of organic molecules; properties and reactions of aromatic and aliphatic hydrocarbons and alkyl halides; stereochemistry; spectroscopy, including infrared and nuclear magnetic resonance; reaction intermediates and mechanisms such as nucleophilic substitutions and electrophilic additions; and multi-step organic synthesis. Weekly hands-on lab activities including preparations, separations, and identifications of organic compounds. Identical to CHM 223 except that CHM 221 includes one three-hour laboratory per week, rather than two three-hour laboratory periods per week.

Prerequisite: CHM 122 with a minimum grade of C or consent of instructor.

Delivery mode: Face-to-Face | Hybrid Fee: \$40

CHM 222 4 credit hours (lecture: 3 | lab: 3)

Organic Chemistry II

Course is second of two-course sequence (CHM 221 and CHM 222). Content includes study of structure, nomenclature, properties and reactions of alcohols and phenols, aldehydes and ketones, carboxylic acids and their derivatives, amines, condensation reactions, polymers, and biomolecules. Weekly hands-on laboratory activities including preparations, separations, and identifications of organic compounds. It is identical to CHM 224 except that CHM 222 includes one three-hour lab per week, rather than the two three-hour labs per week.

Prerequisite: CHM 221, or CHM 223, with minimum grade of C in all courses, or consent of instructor.

Delivery mode: Face-to-Face | Hybrid Fee: \$40

CHM 223 5 credit hours (lecture: 3 | lab: 6)

Organic Chemistry I

Course is first of two-course sequence (CHM 223 and CHM 224). Content presents theories, structures, and reactions of organic chemistry, including the properties of various functional groups; bonding and structure of organic molecules; properties and reactions of aromatic and aliphatic hydrocarbons and alkyl halides; stereochemistry; spectroscopy, including infrared and nuclear magnetic resonance; reaction intermediates and mechanisms such as nucleophilic substitutions and electrophilic additions; and multi-step organic synthesis. Weekly hands-on lab activities including preparations, separations, and identifications of organic compounds. Identical to CHM 221 except that CHM 223 includes two three-hour labs per week, rather than one threehour lab per week.

Prerequisite: CHM 122 with minimum grade of C, or consent of instructor.

IAI Major: CHM 913

Delivery mode: Face-to-Face | Hybrid | Online Fee: \$50

