Chemistry - CPS (CHM)

CHM 1100. General Chemistry 1. (3 Hours)
Introduces the principles of chemistry. Topics include basic principles and definitions, stoichiometry, chemical equilibrium, moles, gas laws, atomic structure, periodic relationships, and chemical bonding.

Corequisite(s): CHM 1101
Attribute(s): NUpath Natural/Designed World

CHM 1101. Lab for CHM 1100. (1 Hour)
Accompanies CHM 1100. Covers a range of topics from the course.

Corequisite(s): CHM 1100

CHM 1200. General Chemistry 2. (3 Hours)
Studies the principles of chemical equilibrium and the rates and mechanisms of chemical reactions. Covers solutions, chemical kinetics, chemical equilibria, chemical thermodynamics, and electrochemistry.

Prerequisite(s): CHM 1100 with a minimum grade of D- ; CHM 1101 with a minimum grade of D-
Corequisite(s): CHM 1201
Attribute(s): NUpath Natural/Designed World

CHM 1201. Lab for CHM 1200. (1 Hour)
Accompanies CHM 1200. Covers a range of topics from the course, such as measurements of heat transfer, rate and equilibrium constants, acid-base reactions, the properties and uses of buffer systems, and the effects of temperature and catalysts.

Prerequisite(s): CHM 1100 with a minimum grade of D- ; CHM 1101 with a minimum grade of D-
Corequisite(s): CHM 1200

CHM 1990. Elective. (1-4 Hours)
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

CHM 2110. Organic Chemistry 1. (3 Hours)
Introduces nomenclature, synthesis, molecular structure and bonding, and reaction mechanisms. Includes chemistry of hydrocarbons and their functional derivatives, stereochemical relationships and nucleophilic substitutions, and elimination reactions.

Prerequisite(s): CHM 1200 with a minimum grade of D- ; CHM 1201 with a minimum grade of D-
Corequisite(s): CHM 2111

CHM 2111. Lab for CHM 2110. (1 Hour)
Accompanies CHM 2110. Introduces basic laboratory techniques, such as distillation, crystallization, extraction, chromatography, characterization by physical methods, and measurement of optical rotation, which serve as the foundation for the synthesis, purification, and characterization of products from microscale syntheses.

Prerequisite(s): CHM 1200 with a minimum grade of D- ; CHM 1201 with a minimum grade of D-
Corequisite(s): CHM 2110

CHM 2200. Organic Chemistry 2. (3 Hours)
Continues CHM 2110. Focuses on additional functional group chemistry, including alcohols, ethers, carbonyl compounds, amines, and the molecules of nature. Introduces spectroscopic methods for structural identification.

Prerequisite(s): CHM 2110 with a minimum grade of D- ; CHM 2111 with a minimum grade of D-
Corequisite(s): CHM 2201

CHM 2201. Lab for CHM 2200. (1 Hour)
Accompanies CHM 2200. Applies basic laboratory techniques from CHM 2111 to chemical reactions of alcohols, ethers, carbonyl compounds, carbohydrates, and amines. Introduces basic laboratory techniques and instruments for the structural analysis of organic molecules.

Prerequisite(s): CHM 2110 with a minimum grade of D- ; CHM 2111 with a minimum grade of D-
Corequisite(s): CHM 2200

CHM 2300. Analytical Chemistry. (3 Hours)
Introduces the principles and practices in the field of analytical chemistry. Focuses on development of a quantitative understanding of homogeneous and heterogeneous equilibria phenomena as applied to acid-base and complexometric titrations, rudimentary separations, optical spectroscopy, electrochemistry, and statistics.

Prerequisite(s): CHM 1200 with a minimum grade of D- ; CHM 1201 with a minimum grade of D-
Corequisite(s): CHM 2301
Attribute(s): NUpath Writing Intensive

CHM 2301. Lab for CHM 2300. (1 Hour)
Accompanies CHM 2300. Offers students an opportunity to obtain hands-on experience in lab experiments in analytical methods, such as silver chloride gravimetry, complexometric titrations, acid-base titrations, UV-Vis spectroscopy, cyclic voltammetry, Karl Fischer coulometry, and modern chromatography.

Prerequisite(s): CHM 1200 with a minimum grade of D- ; CHM 1201 with a minimum grade of D-
Corequisite(s): CHM 2300

CHM 2990. Elective. (1-4 Hours)
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

CHM 3990. Elective. (1-4 Hours)
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

CHM 4990. Elective. (1-4 Hours)
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

CHM 6962. Elective. (1-4 Hours)
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.