

# Chemistry (CHM) Courses

## **CHM1011 General Chemistry I**

This is the first course in general chemistry. Students take an active-learning approach to the discovery of scientific measurements, atomic structure, stoichiometry, thermochemistry, electron configurations, bonding models for chemical compounds, VSEPR (Valence Shell Electron Pair Repulsion) and gases.

Prerequisite(s): MATH1020 or math placement, Corequisite: CHM1016.

Offered at Charlotte, Providence

3 Semester Credits

## **CHM1016 General Chemistry I Laboratory**

General Chemistry I is a laboratory companion course coordinated with CHM1011 which introduces students to techniques and equipment used in experimental chemistry. Students take a guided inquiry-based approach to the discovery of the structure of atoms, scientific measurements, proper calculations of chemical reactions, thermochemistry, spectroscopy and the states of matter. Additionally, this laboratory course provides students with the opportunity to practice laboratory safety, design experimental procedures, collect data, analyze results and discuss conclusions.

Prerequisite(s): MATH1020 or math placement, Corequisite: CHM1011.

Offered at Charlotte, Providence

1 Semester Credit

## **CHM1022 General Chemistry II**

This course is the second course in general chemistry. Students take an integrated learning approach to the discovery of intermolecular forces, properties of solutions, kinetics, equilibria, acid/base chemistry and electrochemistry.

Prerequisite(s): CHM1011, CHM1016, MATH1030, Corequisite: CHM1026.

Offered at Charlotte, Providence

3 Semester Credits

## **CHM1026 General Chemistry II Laboratory**

This is a laboratory companion course coordinated with CHM1022 that introduces students to techniques and equipment used in experimental chemistry. Students take an inquiry-based, self-guided learning approach to the discovery of acid-base reactions, calculations of chemical equilibrium, investigations into the structure of solids and liquids, behavior of gases under various conditions, and calculations of solution concentrations. Students also identify, when appropriate, the application of Green Chemistry procedures. Additionally, this laboratory course provides students with the opportunity to practice laboratory safety, design experimental procedures, collect data, analyze results and discuss conclusions.

Prerequisite(s): CHM1011, CHM1016, MATH1030, Co-requisite: CHM1022.

Offered at Charlotte, Providence

1 Semester Credit

## **CHM2040 Introduction to General and Organic Chemistry**

This course examines the chemistry of carbon-containing molecules relevant to biological systems such as the human body, beginning with basic atomic structure, chemical bonding and reactions, and the chemistry of acids, bases, buffers and salts. Organic chemistry of all functional groups are examined, including saturated/unsaturated hydrocarbons, aldehydes and ketones, carboxylic acids, amines and alcohols. Emphasis is given to those compounds of biochemical importance.

Offered at Charlotte, Providence

3 Semester Credits

## **CHM2050 Introduction to Organic Chemistry**

This course is a one-term overview of organic chemistry intended for students in the health science fields. Nomenclature, properties and reactivity are covered for major organic functional groups, including alkanes, alkenes, alkynes, aromatics, aldehydes and ketones, carboxylic acids, amines, amides, alcohols, thiols, and sulfides. Emphasis is on those compounds, reactions and properties of biochemical importance.

Prerequisite(s): CHM1000, CHM1006 or CHM1022, CHM1026.

Offered at Charlotte, Providence

3 Semester Credits

## **CHM2056 Introduction to Organic Chemistry Laboratory**

This is a laboratory companion course coordinated with Introduction to Organic Chemistry. Emphasis is on inquiry-based exercises that illustrate and demonstrate important skills and principles of organic chemistry. Topics include solubility properties, basic organic chemistry laboratory techniques (including extraction and chromatography), and organic reactions with particular focus on those of interest to students in the nutrition and health science fields. Throughout this course, an evidence-based approach to exploration of organic laboratory experiments that are of interest to students in the nutrition and health science fields is emphasized.

Prerequisite(s): CHM1000, CHM1006, or CHM1022, CHM1026, Corequisite: CHM2050.

Offered at Charlotte, Providence

1 Semester Credit

## **CHM3040 Biochemistry**

This course introduces basic concepts of chemistry and organic/biological chemistry with emphasis on applications of chemistry to human biology, structure of biological molecules and metabolism. Typical topics include chemical bonds and energy, electrolytes, structure and metabolism of carbohydrates and lipids, protein and enzyme function, and structure and function of nucleic acids.

Prerequisite(s): (CHM2040, SCI1015) or (CHM2050, BIO1011/BIO1016).

Offered at Charlotte, Providence

3 Semester Credits

## **CHM3046 Biochemistry Laboratory**

This is a laboratory companion course coordinated with CHM3040. This course applies the basic concepts of biological chemistry to the laboratory setting. Emphasis is on inquiry-based experiments that ask students to explore fundamental concepts and experiments in biochemistry. Topics include experiments that focus on critical biochemical topics including biological buffer systems, amino acid/protein structure and properties, as well as the content of food and other biochemical topics of interest. Throughout this course, an evidence-based approach to exploration of organic laboratory experiments that are of interest to students in the nutrition and health science fields is emphasized.

Prerequisite(s): CHM2040 or CHM2050 or SCI2045 or CHM2011/CHM2016, SCI1015 or BIO1011/BIO1016, Corequisite: CHM3040 or BIO3010.

Offered at Charlotte, Providence

1 Semester Credit