

CHEMISTRY (CHEM)

Notes:

- All CHEM and MATH prerequisites for Chemistry courses must be completed with a grade of C or better.
- Each student in a distance learning section of CHEM 1000, CHEM 1010, CHEM 1020, CHEM 1030, and CHEM 1100 that meets only online will be required to purchase a lab kit to complete hands-on experiments. Information about kits will be distributed prior to the start of the class.

CHEM 1000 - Chemistry of Our Environment (4 Credits)

This course is an introductory, entry-level course in chemistry for non-science majors, with emphasis on every day, practical applications. The course covers basic chemistry principles, which are then applied to contemporary issues. Use of mathematics is minimized as much as possible. The laboratory assignments demonstrate topics discussed in class. Note: This course is a prerequisite for CHEM-1060 and is recommended as a Science elective in the Liberal Arts or General Studies program.

Lecture: 3 hours, Lab: 3 hours

Prerequisite(s): (MATH 0600 or MATH 0095 or MATH 0101 or MATH 0100 or Math Accuplacer or MATH 1420 or MATH 1025) or (Bachelor Degree or higher)

Course completes the following requirements:

Gen.Ed. Ability 2A
Gen.Ed. Ability 3A
Lab Science Requirement
Mathematics and Science
URI/RIC Transfer General Education Transfer Opportunity: Yes

CHEM 1010 - Survey of Biomedical Chemistry (5 Credits)

This is an introductory study of chemistry principles that form the foundation for understanding biomedical and dental sciences. Content includes atomic theory, chemical bonding, the nature and properties of matter and solutions, the colloidal state, crystallization and the chemical functioning of basic biological compounds. Laboratory exercises demonstrate concepts presented in lectures.

Lecture: 3 hours, Lab: 3 hours, Other: 1 hour

Prerequisite(s): (CHEM 1020 or Chemistry Placement Exam) and (MATH 0600 or MATH 0095 or MATH 0099 or MATH 0100 or MATH 0101 or Math Accuplacer or MATH 1420 or MATH 1025 or Bachelor Degree or higher)

Course completes the following requirements:

Gen.Ed. Ability 2A
Gen.Ed. Ability 3A
Lab Science Requirement
Mathematics and Science
URI/RIC Transfer General Education Transfer Opportunity: Yes

CHEM 1020 - Basic Skills for Chemistry (3 Credits)

This course is for students who are inadequately prepared to enter General Chemistry or Survey of Biomedical Chemistry. Topics stressed are physical measurements, problem-solving and chemical language. Students are given first-hand experience in data gathering, evaluation and presentation. Note: Not open to students who have already completed CHEM 1010 or CHEM 1030 without permission of department chairperson. If you plan to continue to Dental Hygiene (DYHG), Science (SCID), or any of the Engineering programs, it is suggested that you take MATH 0101 as your MATH prerequisite for this course.

Other: 4 hours

Prerequisite(s): Chemistry Placement Exam and (MATH 0600 or MATH 0099 or MATH 0100 or MATH 0101 or Math Accuplacer or MATH 1420 or MATH 1025) or (Bachelor Degree or higher)

CHEM 1030 - General Chemistry I (5 Credits)

Principles of chemistry dealing with the structure of matter, periodic system, chemical bonding, formulas and equations are studied in this course. Laboratory work provides an opportunity to see the applications of these chemical principles. Note: This course is for students who plan to pursue further studies in science, pharmacy or engineering.

Lecture: 3 hours, Lab: 3 hours, Other: 1 hour

Prerequisite(s): (CHEM 1020 or Chemistry Placement Exam) and (MATH 0600 or MATH 0101 or MATH 1200 or MATH 1200C or Math Accuplacer) or (Bachelor Degree or higher)

Course completes the following requirements:

Gen.Ed. Ability 3A
Gen.Ed. Ability 3B
Lab Science Requirement
Mathematics and Science
URI/RIC Transfer General Education Transfer Opportunity: Yes

CHEM 1060 - Chemistry of Hazardous Materials (3 Credits)

This course provide an insight into hazardous liquids, solids and gases. Students are exposed to basic chemistry, storage, handling laws, standards and firefighting practices pertaining to hazardous liquids, solids and gases.

Lecture: 3 hours

Prerequisite(s): CHEM 1000

**CHEM 1100 - General Chemistry II
(5 Credits)**

This course, together with CHEM 1030 satisfies the requirement for one year of science. Lectures are concerned with rates of reactions, equilibria, thermodynamics, electrochemistry, nuclear chemistry and complexation reactions. Laboratory involves further application of chemical principles and the separation and identification of inorganic ions.

Lecture: 3 hours, Lab: 3 hours, Other: 1 hour

Prerequisite(s): CHEM 1030

Course completes the following requirements:
Lab Science Requirement

**CHEM 2250 - Organic Chemistry I Lecture
(3 Credits)**

This course deals with chemical principles involved in organic reactions. Emphasis is placed on compounds in the aliphatic series. Note: Students must be enrolled in the Chemical Engineering and Chem-Biology Engineering concentrations to register.

Lecture: 3 hours

Prerequisite(s): CHEM 1100

**CHEM 2260 - Organic Chemistry II Lecture
(3 Credits)**

A continuation of CHEM 2250, this course emphasizes the aromatic series of organic compounds and synthetic organic chemistry. Note: Students must be enrolled in the Chemical Engineering concentration to register.

Lecture: 3 hours

Prerequisite(s): CHEM 2250

**CHEM 2270 - Organic Chemistry I
(5 Credits)**

This course deals with the chemical principles involved in organic reactions. Emphasis is placed on compounds in the aliphatic series. The laboratory enhances lecture material by illustrating methods of preparation, purification and characterization of organic compounds using accepted techniques.

Lecture: 3 hours, Lab: 3 hours, Other: 1 hour

Prerequisite(s): CHEM 1100

**CHEM 2280 - Organic Chemistry II
(5 Credits)**

A continuation of CHEM 2270, this course emphasizes the aromatic series of organic compounds and synthetic organic chemistry. The laboratory enhances lecture material by illustrating methods of preparation, purification and characterization of organic compounds using accepted techniques.

Lecture: 3 hours, Lab: 3 hours, Other: 1 hour

Prerequisite(s): CHEM 2270

**CHEM 2500 - Applications in Science and Math^A
(1 Credit)**

This capstone course is intended for students in their final semester of the Science program. It will allow students an opportunity to demonstrate an integration of knowledge and abilities acquired in previous science and mathematics courses with the added intent of having students develop new insights. Students will read selected articles, such as those that come from scientific journals, in a variety of fields and then have the opportunity to collaborate with their peers and hone writing, synthesis and presentation skills in a seminar setting. Note: Students should have a minimum of 21 General Education credits and a minimum of 18 Science credits or permission of department to register.

Lecture: 2 hours