

CHEMISTRY (CHE)

CHE100. Environmental Chemistry . 3 Credits.

Principles of chemistry behind the effects of such environmental problems as acid rain, ozone layer depletion, atmospheric and aquatic pollution, global warming. Evaluation of experimental data leading scientists to current conclusions regarding these environmental issues.

Prerequisites:

- Math Placement Level with a score of 3 or MAT 151 with a minimum grade of C- or MAT 093 with a minimum grade of C- or MAT 120 with a minimum grade of C- or MAT 121 with a minimum grade of C-

Restrictions:

- Must have the following level: Undergraduate
- Must have the following field(s) of study (major, minor or concentration):
 - Adolescence Ed: Biology (031A)
 - Geology (510)
 - Biology (101)
 - Physics (108)
 - Chemistry (509)
 - 7-12: Biology (031)
 - 7-12: Chemistry (032)

CHE110. Food, Medicine and Drugs. 3 Credits.

Biochemical consequences of substances we ingest: nutritional requirements, properties and metabolism of foods, vitamins and minerals; selected examples of actions of medicines and mechanisms of action of addictive drugs.

Restrictions:

- Must have the following level: Undergraduate

CHE182. Chemistry in Art . 3 Credits.

Materials used in the production of art works, including their sources, properties, and applications. Topics to be covered are: metals, their use in sculpture, printmaking, and gold and silver work; paper; black and white photography; pigments and dyes; coatings (varnishes and synthetic polymers). Designed for non-science majors.

Prerequisites:

- Math Placement Level with a score of 3 or MAT 151 with a minimum grade of C- or MAT 093 with a minimum grade of C- or MAT 120 with a minimum grade of C- or MAT 121 with a minimum grade of C-

Restrictions:

- Must have the following level: Undergraduate
- Must have the following field(s) of study (major, minor or concentration): Chemistry (509)

CHE191. Medicinal Chemistry. 3 Credits.

An exploration of the intersection between chemistry and medicine; covering some basic chemistry; the structure of the human body at various scales; and use of pharmaceuticals, including the chemical basis of how they interact with the body.

Prerequisites:

- Math Placement Level with a score of 3

Restrictions:

- Must have the following level: Undergraduate

CHE193. Chemistry Selected Topic. 3-12 Credits.

Selected topics courses are regularly scheduled courses that focus on a particular topic of interest. Descriptions are printed in the Schedule of Classes each semester. Selected topics courses may be used as elective credit and may be repeated for credit, provided that the topic of the course changes.

Restrictions:

- Must have the following level: Undergraduate

CHE199. Modular Course. 0 Credits.

Restrictions:

- Must have the following level: Undergraduate

CHE201. General Chemistry I . 3 Credits.

Principles governing chemical change in relation to the atomicity of matter, atomic structure and the periodic system of the elements.

Prerequisites:

- (Math Placement Level with a score of 4 or MAT 152 with a minimum grade of C- or MAT 193 with a minimum grade of C- or MAT 153 with a minimum grade of C-) and CHE 211 (may be taken concurrently) with a minimum grade of D-

Restrictions:

- Must have the following level: Undergraduate

CHE202. General Chemistry II . 3 Credits.

Kinetics, thermodynamics, equilibria and electrochemistry.

Prerequisites:

- CHE 201 with a minimum grade of C- and CHE 211 with a minimum grade of D- and CHE 212 (may be taken concurrently) with a minimum grade of D- and (Math Placement Level with a score of 4 or MAT 152 with a minimum grade of C-)

Restrictions:

- Must have the following level: Undergraduate

CHE211. General Chemistry I Lab. 1 Credit.

Laboratory work complements the lecture material covered in CHE 201.

Restrictions:

- Must have the following level: Undergraduate

CHE212. General Chemistry II Lab. 1 Credit.

Laboratory work complements the lecture material covered in CHE202. THERE WILL BE AN ADDITIONAL \$30.00 FEE ASSOCIATED WITH THIS COURSE.

Prerequisites:

- Math Placement Level with a score of 4 and CHE 201 with a minimum grade of D-

CHE293. Chemistry Selected Topic. 3-12 Credits.

Selected topics courses are regularly scheduled courses that focus on a particular topic of interest. Descriptions are printed in the Schedule of Classes each semester. Selected topics courses may be used as elective credit and may be repeated for credit, provided that the topic of the course changes.

Restrictions:

- Must have the following level: Undergraduate

CHE295. Indep Study Chemistry. 1-12 Credits.

Restrictions:

- Must have the following level: Undergraduate

CHE296. Departmental Elective. 0 Credits.**Restrictions:**

- Must have the following level: Undergraduate

CHE299. Modular Course. 0 Credits.**Restrictions:**

- Must have the following level: Undergraduate

CHE303. Introduction to Analytical Chemistry . 4 Credits.

Lecture and laboratory work in gravimetric, volumetric, and elementary instrumental analysis. Application of statistics to analytical chemistry.

Prerequisites:

- CHE 202 with a minimum grade of D-

Restrictions:

- Must have the following level: Undergraduate

CHE306. Organic Chemistry I Lab . 1 Credit.

Laboratory meets once a week and will provide practical experience in some fundamental techniques of organic chemistry.

Prerequisites:

- CHE 202 with a minimum grade of C-

CHE309. Organic Chemistry II Lab . 1 Credit.

Laboratory work will utilize the microscale techniques employed in Organic Chemistry I to the study of organic reactions. THERE WILL BE AN ADDITIONAL \$30.00 FEE ASSOCIATED WITH THIS COURSE.

Prerequisites:

- CHE 202 with a minimum grade of D-

CHE314. Inorganic Chemistry . 3 Credits.

Inorganic Chemistry builds on the foundation provided in General and Organic Chemistry. The chemistry of the full periodic table will be discussed. Emphasis will be placed on modern techniques, theories, and applications.

Prerequisites:

- CHE 202 with a minimum grade of D- and CHE 318 with a minimum grade of D-

CHE318. Organic Chemistry I . 3 Credits.

Structural theory and its application to the study of the properties of carbon compounds.

Prerequisites:

- (CHE 202 with a minimum grade of C- and CHE 212 with a minimum grade of D-) and CHE 306 (may be taken concurrently) with a minimum grade of D-

Restrictions:

- Must have the following level: Undergraduate

CHE319. Organic Chemistry II . 3 Credits.

Continuation of Organic Chemistry I.

Prerequisites:

- (CHE 318 with a minimum grade of C- and CHE 306 with a minimum grade of D-) and CHE 309 (may be taken concurrently) with a minimum grade of D-

Restrictions:

- Must have the following level: Undergraduate

CHE320. Physical Chemistry Recitation. 1 Credit.

Students will work in groups to solve problems that deal with concepts in thermodynamics and kinetics. These in-class activities will reinforce concepts learned in Physical Chemistry I (CHE 321).

Prerequisites:

- (CHE 201 with a minimum grade of D- and MAT 252 with a minimum grade of D- and CHE 202 with a minimum grade of D- and PHY 211 with a minimum grade of D- and PHY 212 with a minimum grade of D- and MAT 251 with a minimum grade of D-)

Restrictions:

- Must have the following field(s) of study (major, minor or concentration):
 - Chemistry (509)
 - Adolescence Ed: Chemistry (441)

CHE321. Physical Chemistry I . 3 Credits.

Study of ideal and real gases, kinetics, thermodynamics, phase and chemical equilibrium, electrochemistry.

Prerequisites:

- CHE 202 with a minimum grade of C- and PHY 202 with a minimum grade of D- and (MAT 341 with a minimum grade of D- or (MAT 359 with a minimum grade of D- and MAT 353 with a minimum grade of D-))

Restrictions:

- Must have the following level: Undergraduate

CHE322. Physical Chemistry II . 3 Credits.

Introduction to quantum mechanics and atomic and molecular spectroscopy.

Prerequisites:

- CHE 202 with a minimum grade of C- and PHY 202 with a minimum grade of D- and (MAT 341 with a minimum grade of D- or (MAT 353 with a minimum grade of D- and MAT 359 with a minimum grade of D-))

Restrictions:

- Must have the following level: Undergraduate

CHE323. Experimental Physical Chemistry . 3 Credits.

Lecture and laboratory work in methodology and techniques used in physical chemistry. Stresses design of experiments, thorough analysis of data, and the writing of scientific reports.

Prerequisites:

- CHE 322 with a minimum grade of D- and CHE 321 (may be taken concurrently) with a minimum grade of D-

CHE393. Chemistry Selected Topic. 1-12 Credits.

Selected topics courses are regularly scheduled courses that focus on a particular topic of interest. Descriptions are printed in the Schedule of Classes each semester. Selected topics courses may be used as elective credit and may be repeated for credit, provided that the topic of the course changes.

Restrictions:

- Must have the following level: Undergraduate

CHE396. Departmental Elective. 0 Credits.**Restrictions:**

- Must have the following level: Undergraduate

CHE399. Modular Course. 0 Credits.**Restrictions:**

- Must have the following level: Undergraduate

CHE407. Instrumental Techniques . 4 Credits.

Familiarization with the modern instruments and techniques used in chemistry.

Prerequisites:

- CHE 303 with a minimum grade of D-

Restrictions:

- Must have the following level: Undergraduate

CHE415. Advanced Inorganic Chem Lab. 1 Credit.

Inorganic Chemistry Laboratory puts into practice the principles learned in Inorganic Chemistry. Modern laboratory techniques will be taught and used to explore the chemistry of s, p, and d-block elements.

Prerequisites:

- CHE 202 with a minimum grade of D- and CHE 319 with a minimum grade of D- and CHE 314 (may be taken concurrently) with a minimum grade of D-

Restrictions:

- Must have the following level: Undergraduate

CHE485. Seminars in Chemistry . 2 Credits.

A series of lecture and discussion sessions conducted by distinguished visiting scientists and faculty members and students of the chemistry department. Topics are of current interest in chemistry, many of which cannot be covered in traditional courses.

Restrictions:

- Must have the following level: Undergraduate
- Must have the following field(s) of study (major, minor or concentration):
 - Chemistry (509)
 - Adolescence Ed: Chemistry (441)

CHE490. Senior Research in Chemistry . 3 Credits.

Student undertakes a program of research under the guidance of a faculty advisor.

Restrictions:

- Must have the following level: Undergraduate
- Must have the following field(s) of study (major, minor or concentration):
 - Chemistry (509)
 - Adolescence Ed: Chemistry (441)

CHE493. Chemistry Selected Topic. 3-12 Credits.

Selected topics courses are regularly scheduled courses that focus on a particular topic of interest. Descriptions are printed in the Schedule of Classes each semester. Selected topics courses may be used as elective credit and may be repeated for credit, provided that the topic of the course changes.

Restrictions:

- Must have the following level: Undergraduate
- Must have the following field(s) of study (major, minor or concentration):
 - Chemistry (509)
 - Adolescence Ed: Chemistry (441)

CHE494. Fieldwork In Chemistry. 0 Credits.**Restrictions:**

- Must have the following level: Undergraduate

CHE495. Indep Study Chemistry. 1-12 Credits.**Restrictions:**

- Must have the following level: Undergraduate