

## CHEMISTRY (CHE)

Degree offered: B.A. or B.S.

### Requirements for the Chemistry Major (B.A. and B.S.)

The **Major in Chemistry for the B.A. Degree** consists of the following **36 hours**:

A.	CHE 101	General Chemistry I	(4 hours)
	CHE 103	General Chemistry II	(4 hours)
	CHE 201	Organic Chemistry I	(4 hours)
	CHE 202	Organic Chemistry II	(4 hours)
	CHE 303	Analytical Chemistry	(4 hours)
	CHE 400	Chemistry Seminar	(1 hour)
	CHE 402	Elementary Physical Chemistry	(4 hours)
B.	MAT 151	Calculus I	(3 hours)
C.	PHY 201	General Physics I	(4 hours)
	PHY 202	General Physics II	(4 hours)

The **Major in Chemistry for the B.S. Degree** consists of the following **39 hours**:

A.	CHE 101	General Chemistry I	(4 hours)
	CHE 103	General Chemistry II	(4 hours)
	CHE 201	Organic Chemistry I	(4 hours)
	CHE 202	Organic Chemistry II	(4 hours)
	CHE 303	Analytical Chemistry	(4 hours)
	CHE 400	Chemistry Seminar	(1 hour)
	CHE 402	Elementary Physical Chemistry	(4 hours)
B.	MAT 151	Calculus I	(3 hours)
	MAT 161	Calculus II	(3 hours)
C.	PHY 201	General Physics I	(4 hours)
	PHY 202	General Physics II	(4 hours)

### **Requirements for the Chemistry Minor**

The **Minor in Chemistry** consists of the following **27 hours**:

A.	CHE 101	General Chemistry I	(4 hours)
	CHE 103	General Chemistry II	(4 hours)
	CHE 201	Organic Chemistry I	(4 hours)
	CHE 202	Organic Chemistry II	(4 hours)
B.	MAT111	Precalculus Algebra	(3 hours)
		Or any course above MAT 111	
C.	PHY 201	General Physics I	(4 hours)
	PHY 202	General Physics II	(4 hours)

### **Course Descriptions**

#### **CHE 100      INTRODUCTORY CHEMISTRY: 4 hours**

A general course in the fundamental facts, principles, and theories of chemistry with emphasis on those topics most useful to students who are in the pre-nursing program. (Lec. 3, Lab. 2)

#### **CHE 101      GENERAL CHEMISTRY I: 4 hours**

A general course in the fundamental facts, principles and theories of chemistry with emphasis on those topics most useful to students who are science majors or minors. For chemistry majors and minors, and to satisfy the chemistry requirements of non-science majors. (Lec. 3, Lab. 3)

*Co-requisite: MAT 111 or higher*

#### **CHE 103      GENERAL CHEMISTRY II: 4 hours**

This course, a continuation of CHE 101, includes qualitative analysis and an introduction to quantitative analysis. (Lec. 3, Lab. 3)

*Prerequisite: CHE 101 with a grade of "C" or better*

#### **CHE 105      ELEMENTARY ORGANIC AND PHYSIOLOGICAL CHEMISTRY: 4 hours**

The second semester of a two-semester course, the first semester of which is CHE 100, designed primarily for pre-nursing students. This course provides an introduction to organic chemistry and biochemistry. Not counted toward a chemistry major or minor. (Lec. 3, Lab. 3)

*Prerequisite: CHE 100, MAT 111 or higher OR concurrent enrollment*

**CHE 201, 202 ORGANIC CHEMISTRY I AND II:** 4 hours per course  
Organic Chemistry is a two-semester course sequence, dealing with the theories and principles of carbon-based chemistry. Emphasis is placed upon reaction mechanisms and the significance of valence bond theory and molecular structure in reactions and synthetic methods. Spectroscopic interpretation is also emphasized. The first semester of laboratory work includes qualitative organic analysis. (Lec. 3, Lab 4)  
*Prerequisite: CHE 103 with a grade of "C" or better*

**CHE 303 ANALYTICAL CHEMISTRY (CT):** 4 hours  
Analytical Chemistry is a focused course comprising basic statistical analysis, quantitative analysis, and mathematical analysis of complex equilibria pertaining to acids and bases and insoluble species. Also covered are general operating principles of commonly used analytical instruments. Laboratory components cover equipment calibration and gravimetric, volumetric and spectroscopic methods of analysis. (Lec. 3, Lab. 4)  
*Prerequisite: CHE 103 with grade of "C" or better*

**CHE 307 BIOCHEMISTRY I:** 4 hours  
A study of the chemistry of life. Emphasis is placed on the structure and metabolism of carbohydrates, proteins, lipids, nucleic acids, nucleoproteins, vitamins, and minerals. Principles of enzymology are also emphasized. This course has a clinical biochemistry orientation. (Lec. 3, Lab 2) (*Cross-listed with BIO 307*)  
*Prerequisite: CHE 202*

**CHE 308 BIOCHEMISTRY II:** 4 hours  
A continuation of topics discussed in Biochemistry I. Emphasis is placed on the structure and metabolism of complex organic molecules, as well as detailed analysis of mechanisms of gene expression and function. Endocrine regulation of metabolism will also be emphasized. This course is recommended for students planning to apply to Medical School. (Lec. 2, Lab 4) (*Cross-listed with BIO 308*)  
*Prerequisite: CHE 307*

**CHE 400 CHEMISTRY SEMINAR (CT):** 1 hour  
Course content varies with the needs of the student but centers on discussion and presentation of current topics in chemistry.  
*Prerequisite: CHE 202*

**CHE 402                    ELEMENTARY PHYSICAL CHEMISTRY (CT): 4 hours**

A course based largely on the concept of energy and the fundamental properties of matter. A general course not requiring extensive mathematical preparation. (Lec. 3, Lab. 3).

*Prerequisite: CHE 103, PHY 202, MAT 161 OR concurrent enrollment*

**CHE 405                    SCIENCE OUTREACH: 1 hour**

A community service program designed to train upper- level science students to host a molecular or environmental science laboratory for high school students. Students will function as a group to organize, prepare, and operate at least one laboratory for a visiting high school group. Students will be graded on their participation and submit a written reflection of their experience. This course mainly serves students preparing for allied health careers and postgraduate work. (*Cross-listed with BIO 405*)

*Prerequisite: BIO 101, BIO 104, OR BIO 105, CHE 103, completion of at least 40 semester hours of coursework*

**CHE 411                    SPECIAL STUDIES: 3 hours**

A course for upperclassmen seeking to complete requirements in their major or minor disciplines. Subjects will be taught that do not appear in the College catalog but are of value to a student in her career objectives and/or graduate studies.

*Prerequisite: Approval of the Department Head*

**CHE 412                    SPECIAL STUDIES: 3 hours**

A course for upperclassmen seeking to complete requirements in their major or minor disciplines. Subjects will be taught that do not appear in the College catalog but are of value to a student in her career objectives and/or graduate studies.

*Prerequisite: Approval of the Department Head*

**CHE 413                    SPECIAL STUDIES: 3 hours**

A course for upperclassmen seeking to complete requirements in their major or minor disciplines. Subjects will be taught that do not appear in the College catalog but are of value to a student in her career objectives and/or graduate studies.

*Prerequisite: Approval of the Department Head*

**CHE 414**            **SPECIAL STUDIES:** 3 hours

A course for upperclassmen seeking to complete requirements in their major or minor disciplines. Subjects will be taught that do not appear in the College catalog but are of value to a student in her career objectives and/or graduate studies.

*Prerequisite: Approval of the Department Head*

**CHE 449, 450**        **INDEPENDENT STUDIES:** 1 hour to 2 hours

Course content varies with the needs of the students

*Prerequisite: CHE 202, approval of the Department Head and Academic Dean*