

# CHEMISTRY (CHEM)

## Chemistry (CHEM) 100

### Basic Chem Calculations

Arithmetical and algebraic operations as used in general chemical calculations, scientific notation, metric system of measurement and problem-solving techniques employed in general chemistry calculations. Writing assignments, as appropriate to the discipline, are part of the course.

*Concurrent enrollment in CHEM 121, Eligibility for ENGLISH 101, Eligibility for MATH 118 or higher or consent of Department Chairperson.*

1 Laboratory hours. 0.5 Lecture hours. 1 Credit Hours.

**Offered At:** HW, MX, TR

## Chemistry (CHEM) 121

### Basic Chemistry I

Principles of general inorganic chemistry, including properties of matter, dimensional analysis, fundamentals of stoichiometry, interpretation of the periodic table, nomenclature and introduction to solution chemistry and commonly used concentration units. Writing assignments, as appropriate to the discipline, are part of the course.

*Eligibility for ENGLISH 101 and eligibility for MATH 118 or higher or Consent of Department Chairperson.*

5 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** DA, HW, KK, MX, OH, TR, WR

**IAI:** P1 902L GE: Physical Sciences

## Chemistry (CHEM) 201

### General Chemistry I

Topics include the periodic table of the elements, atomic structure, basic concepts of quantum theory, bonding, stoichiometry of compounds and reactions, thermo-chemistry, the gaseous state, basic concepts of the liquid and solid states, solutions, acids, and bases. Writing assignments, as appropriate to the discipline, are part of the course.

*Eligibility for MATH 140 or higher and Grade of C or better in CHEM 121 or one year of high school chemistry, or Consent of Department Chairperson.*

4 Laboratory hours. 4 Lecture hours. 5 Credit Hours.

**Offered At:** DA, HW, KK, MX, OH, TR, WR

**IAI:** CHM 911,P1 902L GE: Physical Sciences

## Chemistry (CHEM) 203

### General Chemistry II

Topics include equilibrium, acid-base equilibria, solubility equilibria, kinetics, thermodynamics, electrochemistry, coordination compounds, nuclear chemistry and descriptive topics in organic chemistry. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 201, or Consent of Department Chairperson.*

4 Laboratory hours. 4 Lecture hours. 5 Credit Hours.

**Offered At:** DA, HW, KK, MX, OH, TR, WR

**IAI:** CHM 912

## Chemistry (CHEM) 204

### Quantitative Analysis

Gravimetric, volumetric, and calorimetric procedures; basic techniques of quantitative measurement applied to the determination of percentage composition, equilibrium constants and the reliability of data. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 203*

2 Lecture Hours. 6 Laboratory Hours. 5 Credit Hours.

**Offered At:** DA

## Chemistry (CHEM) 205

### Organic Chemistry I

Fundamentals of organic chemistry, orbital and structural theory, aliphatic and aromatic hydrocarbons, alkyl halides, structural isomerism, introduction to functional groups, nomenclature, stereochemistry, reaction mechanisms, resonance theory, and spectroscopy. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 203 or Consent of Department Chairperson.*

4 Lecture Hours. 4 Laboratory Hours. 6 Credit Hours.

**Offered At:** DA, HW, KK, MX, OH, TR, WR

**IAI:** CHM 913

## Chemistry (CHEM) 207

### Organic Chemistry II

Continuation of study of organic chemistry: alcohols, aldehydes and ketones, carboxylic acids, functional derivatives of carboxylic acids, O, N and S containing compounds, heterocyclic compounds, spectroscopy; laboratory emphasis on organic synthesis and spectroscopic analysis. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 205, or Consent of Department Chairperson.*

4 Lecture Hours. 4 Laboratory Hours. 6 Credit Hours.

**Offered At:** DA, HW, KK, MX, OH, TR, WR

**IAI:** CHM 914

## Chemistry (CHEM) 212

### Survey of Organic & Biochemistry

Survey of organic chemistry, including nomenclature and reactions of major functional groups essential to biochemistry. An introduction to the structure and function of biomolecules, and the metabolism of proteins, lipids, and carbohydrates. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 201 or Consent of Department Chairperson.*

3 Laboratory hours. 3 Lecture hours. 4 Credit Hours.

**Offered At:** DA, HW, KK, TR, WR

## Chemistry (CHEM) 217

### Intro Instrumental Analysis

Use of modern optical and electrical methods in chemical analysis: filter photometers; visible, ultraviolet and infrared spectrophotometer; gas chromatographs, radioactive counters, and pH meters; potentiometers; refractometers; polarimeters; and polarographs. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in (CHEM 201 and CHEM 205), or Consent of Department Chairperson.*

4 Laboratory hours. 2 Lecture hours. 4 Credit Hours.

**Offered At:** TR

## Chemistry (CHEM) 219

### Chemistry for Education I: Matter & Structure

This course is designed to provide educators with a fundamental understanding of matters, its structure and its changes from both a qualitative and quantitative perspective. Physical properties, chemical interactions, bond, and the atomic structure of matter will be explored and mapped to state science education standards. Writing assignments, as appropriate to the discipline, are part of the course.

2 Laboratory hours. 3 Lecture hours. 4 Credit Hours.

**Offered At:** TR

### **Chemistry (CHEM) 295**

#### **Independent Research in Chemistry I**

Original laboratory research supervised by a faculty member, either on campus or off-campus. A well defined academic goal must be outlined by the instructor and the student. This course will usually require library research, laboratory work, and the preparation of final and oral reports. Writing assignments, as appropriate to the discipline, are part of the course.

*Eligibility for ENGLISH 101, or Consent of Department Chairperson*

1-3 Lecture Hours. 3-18 Laboratory Hours. 1-6 Credit Hours.

**Offered At:** DA, HW, KK, MX, TR, WR

### **Chemistry (CHEM) 296**

#### **Independent Research in Chemistry II**

Original laboratory research supervised by a faculty member, either on campus or off-campus. A well defined academic goal must be outlined by the instructor and the student. This course will usually require library research, laboratory work, and the preparation of final and oral reports. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in Chem 295, Eligibility for English 101 or consent of Department Chairperson*

1-3 Lecture Hours. 3-18 Laboratory Hours. 1-6 Credit Hours.

**Offered At:** HW, TR, WR

### **Chemistry (CHEM) 297**

#### **Independent Research in Chem III**

Original laboratory research supervised by a faculty member, either on campus or off-campus. A well defined academic goal must be outlined by the instructor and the student. This course will usually require library research, laboratory work, and the preparation of final and oral reports. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 296, Eligibility for ENGLISH 101 or or Consent of Department Chairperson.*

1-3 Lecture Hours. 3-18 Laboratory Hours. 1-6 Credit Hours.

**Offered At:** HW, TR

### **Chemistry (CHEM) 298**

#### **Independent Research in Chemistry IV**

Original laboratory research supervised by a faculty member, either on campus or off-campus. A well defined academic goal must be outlined by the instructor and the student. This course will usually require library research, laboratory work, and the preparation of final and oral reports. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 297, Eligibility for ENGLISH 101 or Consent of Department Chairperson.*

1-3 Lecture Hours. 3-18 Laboratory Hours. 1-6 Credit Hours.

**Offered At:** HW, TR

### **Chemistry (CHEM) 299**

#### **Independent Research in Chemistry V**

Original laboratory research supervised by a faculty member, either on campus or off-campus. A well defined academic goal must be outlined by the instructor and the student. This course will usually require library research, laboratory work, and the preparation of final and oral reports. Writing assignments, as appropriate to the discipline, are part of the course.

*Grade of C or better in CHEM 298 or Consent of Department Chairperson.*

1-2 Lecture Hours. 10-20 Laboratory Hours. 3-6 Credit Hours.

**Offered At:** HW