| **PROFESSOR:** |  |
| --- | --- |
| **OFFICE LOCATION:** |  |
| **OFFICE HOURS:** |  |
| **PHONE NUMBER:** |  |
| **E-MAIL:** |  |
| **SEMESTER:** |  |
| **DELIVERY METHOD:** |  |

# COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

## CHM 2025 Introduction to College Chemistry (3 Credits)

This one-semester course is designed to prepare students planning to enter the CHM 2045/2046 sequence. Topics to be covered include matter, energy, measurements, problem solving techniques, the atom, the Periodic Table, chemical bonding, chemical formulas, chemical reactions, stoichiometry, gases, liquids, solutions, acids and bases, equilibrium, kinetics, and thermodynamics.

## PREREQUISITES FOR THIS COURSE:

SB 1720 Testing Exemption or successful completion of all Developmental courses

### CO-REQUISITES FOR THIS COURSE:

CHM 2025L

## GENERAL COURSE INFORMATION:

Topic Outline

Chemistry and the scientific method

Matter and energy

Atomic theory and structure, including atomic mass and electronic structure

Periodic table of the elements, including atomic and molecular properties

Chemical bonding: ionic and covalent

Chemical formulas, reactions, and equations, including stoichiometry

Properties of and laws for gases

Liquids and solids, including phase changes and associated energy aspects

Solutions, including molar concentration

Acids and bases, including Arrhenius theory and pH

Survey of kinetics, equilibrium, and thermodynamics

## ALL COURSES AT FLORIDA SOUTHWESTERN STATE COLLEGE CONTRIBUTE TO THE GENERAL EDUCATION PROGRAM BY MEETING ONE OR MORE OF THE FOLLOWING GENERAL EDUCATION COMPETENCIES:

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

A. General Education Competencies and Course Outcomes

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

General Education Competency: Evaluate

Course Outcomes or Objectives Supporting the General Education Competency Selected:

Explain the general nature of chemistry and the scientific method.

Categorize and distinguish between physical and chemical properties and changes, and differentiate between matter and common forms of energy.

Describe modern atomic theory and the development of the Periodic Table of the elements and periodic properties of the elements.

Classify and balance chemical reactions and explain the concept of ionic mobility and how it relates to the electrolytic behavior of ionic compounds dissolved in water.

Perform calculations based on chemical compounds and their reactions.

Distinguish between ionic and covalent bonding, represent substances by Lewis structures, and predict molecular shapes via the VSEPR method.

Apply selected gas laws and to calculate changes in properties of gases, including reactions involving gases.

Distinguish between intermolecular attractive forces and their effect on physical states, including energetics of phase changes.

Use basic solution terminology, including the concept of molarity and its use in calculations involving solutions.

Identify an acid and a base and apply the pH scale as a measure of acidity.

Identify the major factors affecting reaction rates and understand the concept of chemical equilibrium.

Recognize selected aspects of the terminology of thermodynamics, including the major contributing factors to spontaneous chemical and physical changes.

## DISTRICT-WIDE POLICIES:

### PROGRAMS FOR STUDENTS WITH DISABILITIES

Florida SouthWestern State College, in accordance with the Americans with Disabilities Act and the College’s guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <https://www.fsw.edu/adaptiveservices>.

### REPORTING TITLE IX VIOLATIONS

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct. Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at [equity@fsw.edu](mailto:equity@fsw.edu). Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online. Additional information and resources can be found on the College’s website at <https://www.fsw.edu/sexualassault>.

## REQUIREMENTS FOR THE STUDENTS:

List specific course assessments such as class participation, tests, homework assignments, make-up procedures, etc.

## ATTENDANCE POLICY:

The professor’s specific policy concerning absence. (The College policy on attendance is in the Catalog and defers to the professor.)

## GRADING POLICY:

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

| **Grade Percent** | **Letter Grade** |
| --- | --- |
| 90 - 100 | A |
| 80 - 89 | B |
| 70 - 79 | C |
| 60 - 69 | D |
| Below 60 | F |

(Note: The “incomplete” grade [“I”] should be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.” Refer to the policy on “incomplete grades.)

## REQUIRED COURSE MATERIALS:

(In correct bibliographic format.)

## RESERVED MATERIALS FOR THE COURSE:

Other special learning resources.

## CLASS SCHEDULE:

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

## ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:

(Which would be useful to the students in the class.)