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

# COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

## CHM 1020C Chemistry for a Sustainable Future (4 Credits)

This introductory chemistry course for non-science majors presents the general principles and concepts of chemistry, and explores its relevance in contemporary society. The course examines the role of chemistry in consumer products, food, medicine, materials /energy resources, and the environment.

## PREREQUISITES FOR THIS COURSE:

SB 1720 Testing Exemption or successful completion of all Developmental courses

### CO-REQUISITES FOR THIS COURSE:

None

## GENERAL COURSE INFORMATION:

Topic Outline

 Green chemistry and sustainable practices for the future of society and of our planet.

 The nature and classification of matter and energy.

 Principles of chemical reactions and energy transformations.

 The chemistry of the biosphere and atmosphere, including Earth’s energy balance, air quality and water quality.

 Chemical processes related to renewable and non-renewable materials and energy sources, and to their impact on global climate change.

 The basic chemistry of life and of consumer products, including food, plastics and drugs.

## 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:

 Relate the principles of green chemistry and of sustainable practices to the responsibility of individuals, corporations, governments, and society at large.

 Understand the nature and classification of matter; distinguish among atoms, elements, molecules, organic/inorganic and molecular/ionic compounds.

 Describe and represent chemical change, applying quantitative mass and molar concepts; use scientific notation and significant figures in related problem solving.

 Describe the chemical processes underlying the production of major air pollutants and the destruction of stratospheric ozone; identify associated risks and available prevention and mitigation practices.

 Understand the physicochemical processes involved in Earth’s energy balance and the greenhouse effect; analyze the consequences of global climate change and identify available mitigation practices.

 Understand and apply the laws of energy transformations; compare and contrast the chemical principles, advantages and challenges of renewable and traditional energy sources.

 Describe the structure and properties of water and aqueous solutions; understand the chemical processes related to water pollution and identify solutions to global water quality issues.

 Distinguish between natural and synthetic polymers; recognize the challenges related to plastic production, pollution and recycling.

 Apply basic concepts of organic chemistry to explain the general mechanism of drug action; compare and contrast the production and pollution issues of natural versus synthetic drugs.

 Identify the resources needed to produce and distribute natural, processed and genetically modified foods, comparing and contrasting their environmental impact and nutritional/caloric value.B. In accordance with Florida Statute 1007.25 concerning the state’s general education core course requirements, this course meets the general education competencies for science.

 Students will demonstrate the ability to critically examine and evaluate scientific observation, hypothesis, or model construction, and to use the scientific method to explain the natural world.

 Students will successfully recognize and comprehend fundamental concepts, principles and processes about the natural world

## 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. 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.)