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

# COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

## ISC 1002C Foundations of Interdisciplinary Science II (3 Credits)

Foundations of Interdisciplinary Science is designed to provide a broad foundation in science for non-science majors. The two-course sequence emphasizes scientific and laboratory activities in a hands-on learning environment. ISC 1002 covers the topics of energy, nuclear reactions and nuclear energy, chemistry, and environmental biology. The relationships of science to other fields of knowledge and to society are emphasized. This course is recommended as a general education course for non-science majors.

## 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

Measurement and the metric system

Energy, work, energy flow, conservation and resources

Heat and molecular motion, including phase changes and associated energy aspects; thermodynamics

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 and sources of light

Nuclear reactions, nuclear energy, medical applications

Ecology, ecosystems, organismal interactions, habitat, carbon, nitrogen, and water cycles

## 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:

Describe and analyze the scientific method and use it to solve problems.

State and analyze the concepts of work and energy and use conservation of energy to explain the working of the physical world.

Analyze the basic concepts of thermodynamics and use them to solve problems on specific heat and phase change.

Analyze the basic concepts of optics and use the principles of reflection, refraction, dispersion, interference and polarization to explain common phenomena in nature.

State and analyze the basic ideas of atomic theory and use them to explain the periodic table, and differentiate between elements and compounds.

Use the concept of chemical bonds to explain various chemical reactions and construct and interpret chemical equations.

State and analyze the properties of water and water solutions and use them to explain the concepts of dissolving, concentration, solubility, electrolyte, boiling point and freezing point.

Explain acid-base properties, pH scale, properties of salts and hard and soft water.

Describe and explain the process of natural radioactivity, use it to solve simple problems, compare different types of decay and methods of measuring radiation, and criticize different proposals for and against the use of nuclear energy as a major source of energy in the 21st century.

Analyze the energy flow in an ecosystem, compare different kinds of interactions between organisms, analyze the cycling of materials in the ecosystem, and appraise efforts towards the preservation of the environment.

## 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.)