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

# COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

## PHY 1007C Physics for the Health Sciences (3 Credits)

This is a one-semester course for students in the health sciences who need a background in physics which is broad in scope and stresses applications in the health field. The course enhances student learning of physical concepts through hands on activities and experiments. (2 lecture hours, 2 lab hours)

## PREREQUISITES FOR THIS COURSE:

(SB 1720 Testing Exemption or successful completion of all Developmental courses); and MAT 1033 or higher with a minimum grade of “C”

### CO-REQUISITES FOR THIS COURSE:

None

## GENERAL COURSE INFORMATION:

Topic Outline

 Physical Quantities, methods of measurement, units;

 Lab: Graphing.

 Kinematics, gravitational acceleration, free fall;

 Lab: Motion;

 Lab: Torques, Rotational Equilibrium/Centripetal Force.

 Work, energy and power;

 Lab: Work and Power.

 Heat, temperature, internal energy;

 Lab: Thermometer Fixed Points.

 Phase changes, heat transfer, vapor pressure;

 Lab: Specific Heat.

 Pressure in liquids, the circulatory system and other medical applications; Osmosis, viscosity, absorption and adsorption;

 Lab: Archimedes' Principle.

 Electricity, magnetism, electric circuits, instrumentation and electrical safety;

 Lab: Ohm’s Law/ Electromagnets.

 Wave motion, hearing and vision;

 Lab: Speed of Sound in Air.

 Modern physics and clinical applications;

 Lab: Reflection and Refraction.

 Nuclear radiation;

 Lab: Nuclear Radiation.

## 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:

 Recognize the general nature of physics, the use of physical quantities, methods of measurement and units.

 Plot data and interpret simple graphs.

 Examine basic principles in mechanics relevant to health sciences.

 Identify and differentiate between and among Pascal’s law, Archimede’s principle, Bernoulli’s principle, and the Coandă effect.

 Critically discuss the physical variables characterizing a liquid flowing through a tube.

 Examine the ideal gas law and use it in solving problems.

 Determine how various physical properties of matter, such as osmosis absorption, affect the behavior of biological systems.

 Recognize basic electrical and magnetic properties of matter and analyze their significance to biological systems and to their functions.

 Analyze the basic properties of light and waves and their relationship to biological systems.

 Recognize the basic atomic properties of matter, including radioactivity and its effects on biological tissue

## 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.)