

**SEWARD COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS**

I. TITLE OF COURSE: PS2205 - General Physics I

**II. COURSE DESCRIPTION: 5 credit hours
3 credit hours of lecture and 2 credit hours of lab per week.**

The course covers the basic principles of mechanics, heat and thermodynamics, wave motion and sound from a non-calculus point of view. For each unit of credit, a minimum of three hours per week with one of the hours for class and two hours for studying/preparation outside of class is expected.

EduKan course number:PH207

Pre-requisite:

College Algebra and Trigonometry or equivalent, writing level of English Composition I

III. PROGRAM AND/OR DEPARTMENT MISSION STATEMENT:

The Science Program at Seward County Community College provides opportunities to improve and enhance each student's understanding and comprehension of the natural world through a variety of courses and experience to develop a scientifically literate citizen.

IV. TEXTBOOK AND MATERIALS:

1. Giambattista, College Physics, 4th Ed., McGraw Hill
2. Related laboratory experiments.

V. SCCC OUTCOMES:

- 1: Read with comprehension, be critical of what they read, and apply knowledge gained to real life
- 2: Communicate ideas clearly and proficiently in writing, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.
- 3: Communicate their ideas clearly and proficiently in speaking, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.
- 4: Demonstrate mathematical skills using a variety of techniques and technologies.
- 5: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information
- VI: Exhibit skills in information and technological literacy

- 9: Exhibit workplace skills that include respect for others, teamwork competence, attendance/punctuality, decision making, conflict resolution, truthfulness/honesty, positive attitude, judgment, and responsibility

VI. COURSE OUTCOMES:

1. Demonstrate basic understanding of mechanics and thermodynamics.
2. Solve problems of a physical nature.
3. Communicate ideas in a literate manner both in written and oratorical methods.
4. Collect data and create general conclusions.
5. Show an awareness of the importance and application of the physical laws of nature.
6. Demonstrate an understanding of the scientific ideology.
7. Understand the SI unit system.
8. Solve vector problems.
9. Apply Newton's law of motion to:
10. Employ knowledge of force systems and friction.
11. Develop a concept of work, power, and energy.
12. Apply concepts of momentum and impulse
13. Demonstrate an understanding of rotational motion.
14. Demonstrate an understanding of the mechanics of fluids.
15. Demonstrate an understanding of motion of oscillating systems.
16. Have a working knowledge of waves with applications to both light and sound.
17. Demonstrate an understanding of thermal equilibrium and thermal expansion.
18. Demonstrate an understanding of heat and thermal energy.
19. Have a basic understanding of the laws of thermodynamics.

VII. COURSE OUTLINE:

1. Mechanics
Vectors, Forces, Newton's law of motion, Reference Frames, Free Falling Bodies, Projectiles, Energy, Work and Power, Impulse and Momentum, Rotational Motion, Fluids, Oscillating Systems, Waves,
2. Thermal Physics,
Temperature, Kinetic theory of gases, Heat, Thermodynamics

VIII. INSTRUCTIONAL METHODS:

1. Lecture Demonstrations
2. Class Discussions
3. Laboratory Experiments
4. Video Presentations
5. Computer software applications

IX. INSTRUCTIONAL AND RESOURCE MATERIALS:

1. Textbook
2. Handout Information
3. DVD's and computer software
4. Laboratory and Various Laboratory Equipment
5. Electronic Calculator
6. Overhead Projector

X. METHODS OF ASSESSMENT:

Students will be given real life problems and assessed on how they apply the scientific method to arrive at a solution(s) to the problems.

Students will be given problems on quizzes, exams and laboratory experiments to assess their understanding of the SI system and the concepts being covered.

SCCC Outcomes:

Outcome #1 will be assessed and measured by comprehension of text reading assignments, various research projects, and participation in class discussion.

Outcome #2 will be assessed by short essay assignments through the semester.

Outcome #3 will be assessed by the student's involvement in group discussion, presentations, and laboratory investigations during the semester.

Outcome #4 will be assessed through homework, exams, and laboratory data analysis.

Outcome #5 will be assessed through conceptual discussions, laboratory investigations and research projects.

Outcome #6 will be assessed through research inquiries, performance of laboratory investigations, and application to research projects.

Outcome #9 will be assessed through attendance, group assignments and presentations.

XI. ADA STATEMENT:

Under the Americans with Disabilities Act, Seward County Community College will make reasonable accommodations for students with documented disabilities. If you need support or assistance because of a disability, you may be eligible for academic accommodations. Students should identify themselves to the Dean of Students at 620-417-1106 or going to the Student Success Center in the Hobbie Academic building, room 149 A.

XII. CORE OUTCOMES PROJECT:

The learning outcomes and competencies detailed in this course outline or syllabus meet, or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents

KRSN: PHY1010

Syllabus Reviewed: 6/30/2021

