SEWARD COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS

I. TITLE OF COURSE: PS2215- General Physics II

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 light, electricity, magnetism and modern physics 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:PH227

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Pre-requisite: PS2205 - General Physics 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:

Giambattusta, College Physics, 4th Ed., McGraw Hill

V. SCCC OUTCOMES

Students who successfully complete this course will demonstrate the ability to do the following 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 fand 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
6: Exhibit skills in information and technological literacy
7: Demonstrate knowledge and comprehension of the diverse cultures, creeds, and lifestyles of America and the world community.

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 a basic understanding of light, electricity, magnetism and modern physics.
2. Show an awareness of the beauty of the physical laws of nature.
3. Demonstrate an understanding of the scientific idealogy.
4. Solve problems of a physical nature.
5. Demonstrate use of coulomb's principle.
6. Demonstrate an understanding of capacitance.

7. Demonstrate an understanding of electric currents.
8. Solve simple circuits using Kirchoff's rules.
9. Understand magnetic forces and their result on moving charges.
10. Demonstrate the use of Ampere's principle.
11. Solve field properties around a moving charge.
12. Have a knowledge of the working of the voltmeter, ammeter and the potentiometer.
13. Understand the concept of the magnetic properties of matter.
14. Understand electromagnetic induction.
15. Solve simple alternating current circuits.
16. Demonstrate an understanding of the wave nature of light.
17. Understand the principle of refraction and the transmission of energy by light waves.
18. Understand diffraction of light & Young's experiment.
19. Demonstrate knowledge of the principles of reflection and refraction.
20. Gain an understanding of mirrors and lenses.
21. Demonstrate an understanding of the diffraction grating and resolving power of optical instruments.
22. Demonstrate an understanding of emission and absorption spectra.
23. Employ a basic understanding of radioactivity and nuclear reactions.
24. Gain a concept of nuclear models.
25. Specific Laboratory Objectives
26. Apply the scientific method to his work.
27. Analyze data and determine its reliability.
28. Report results of experimental facts in an organized manner.
29. Deduce conclusions from experimental data.
30. Demonstrate an ability to work in the laboratory.

VII. COURSE OUTLINE:

1. Electricity and Magnetism
2. Electromagnetic Waves
3. Modern Physics
4. Laboratory experiments

VIII. INSTRUCTIONAL METHODS:

1. Lecture
2. Handout information
3. Movie films and slides
4. Laboratory and various laboratory equipment
5. Chalkboard
6. Calculator

IX. INSTRUCTIONAL AND RESOURCE MATERIALS:

1. Text
2. Handout information
3. Movie films and slides
4. Laboratory and various laboratory equipment
5. Chalkboard
6. Calculator

X. METHODS OF ASSESSMENT:

SCCC Outcome #1 will be assessed and measured by comprehension of text reading assignments, a semester research project, and participation in class discussion and through Calibrated Peer Review (CPR) assignments.

SCCC Outcome #2 will be assessed by the student's expression of ideas in CPR essays and semester research paper.

SCCC Outcome #3 will be assessed by the student's expression of ideas through class discussion and semester research presentation.

SCCC Outcome #4 will be assessed through homework, quiz and test problems, and laboratory data analysis.

SCCC Outcome #5 will be assessed and measured by using lab experiments, semester research paper, and CPR assignments

SCCC Outcome #6 will be assessed and measured by utilizing technology in laboratory experimentation and use of Internet in class work.

SCCC Outcome #7 will be assessed through class discussion, written reports on short research topics throughout the semester, and CPR assignments.

SCCC Outcome #9 will be assessed by class attendance, participation in class discussion, and workshop group interaction.

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 Hobble Academic building, room 149 A.

Syllabus Reviewed: 6/30/2021