NORTHWEST FLORIDA STATE COLLEGE

Course Syllabus

Course Name: Physical Science
Course Number: PHY1020
Spring 2025
ONLINE
CRN: 20325
Credit hours: 3
Instructor: Dr. Kurt Teets

Course Curriculum

COURSE READINGS WILL BE DERIVED FROM THE WESTERN CANON. IN ADDITION AND TO THE EXTENT POSSIBLE, THE COURSE WILL PROVIDE INSTRUCTION ON THE HISTORICAL BACKGROUND AND PHILOSOPHICAL FOUNDATION OF WESTERN CIVIILIZATION AND THE AMERICAN DEMOCRACY. THIS COURSE OFFERS A COMPREHENSIVE SURVEY OF PHYSICS, COVERING A WIDE RANGE OF TOPICS INCLUDING MOTION, NEWTON'S LAWS, ENERGY, SOUND, HEAT, ELECTRICITY, MAGNETISM, AND OPTICS. EMPHASIZING A CONCEPTUAL UNDERSTANDING OF PHYSICS, THE COURSE INTEGRATES CRITICAL THINKING SKILLS AND REAL-WORLD APPLICATIONS.

STUDENT LEARNING OUTCOMES:
• STUDENTS WILL CRITICALLY EVALUATE EVERYDAY PHENOMENA USING THE SCIENTIFIC METHOD.
• STUDENTS WILL EXPLAIN THE BASIS OF PHYSICAL PRINCIPLES (SUCH AS CONSERVATION LAWS) AND HOW THEY APPLY TO EVERYDAY PHENOMENA.
• STUDENTS WILL INTERPRET INFORMATION CONVEYED IN DIAGRAMS AND GRAPHS.
• STUDENTS WILL PERFORM SIMPLE CALCULATIONS RELEVANT TO REAL WORLD PROBLEMS.

Goals

***NS-1**: The student will demonstrate an understanding of the scientific method, distinguishing between fact, scientific law, hypotheses, and theory; and recognizing the difference between scientific and non-scientific explanations.*

***NS-2**: The student will interpret data, given in problem form or obtained experimentally, in order to demonstrate problem-solving skills (critical thinking), develop testable explanations, or distinguish the difference between correlation and causation.*

***NS-3**: The student will demonstrate fundamental knowledge of the terminology, major concepts, and theories of at least one field within the physical sciences, and in the biological sciences.*

***NS-4:** The student will relate scientific discoveries and theories to broader areas of human concern.*

Objectives

- *Students will study the history of science, from Aristotle to Galileo to modern day*
- *Students will explain the basis of physical principles (such as conservation laws) and how*

They apply to everyday phenomena.

- *Students will implement rules of significant numbers to all measurements.*
- *Students will learn the structure of atoms, and properties and reactivity of substances*
- *Students will learn about wave properties*
- *Students will learn about electromagnetism*
- *Students will learn about the photoelectric effect*
- *Students will learn about emission spectra of atoms*
- *Student will study the quantum mechanical model of electrons*
- *Students will study ideas and laws of motion, from Aristotle to Galileo to Newton*
- *Students will study the laws of thermodynamics*
- *Students will study types of energy, and energy sources*

Student Expectations of the Course

Instructor will reply to emails with 48 College business hours
Instructor will post and maintain office hours
Instructor will provide a schedule of material to be covered on the syllabus
Instructor will communicate important information such as exam dates in a timely manner
Instructor will maintain updated gradebook in the Canvas LMS
Instructor will include a clear grading policy in the syllabus
Instructor will include contact information such as their email address and phone number
Instructor will return graded work in a timely manner
Instructor will post videos in the Canvas LMS on topics covered for students to watch at their leisure

How Student Performance Will be Measured

The student may be evaluated by the following methods:
Periodic exams online over lecture material
Periodic quizzes
Online extra credit quizzes
Completion of written homework assignments and/or online homework assignments in the Canvas LMS