PHYS-110: DESCRIPTIVE PHYSICS

Effective Term
Fall 2026

CC Approval
12/05/2025

AS Approval
12/11/2025

BOT Approval
12/18/2025

SECTION A - Course Data Elements

Send Workflow to Initiator
No

CB04 Credit Status
Credit - Degree Applicable

Discipline

Minimum Qualifications	And/Or
Physics/Astronomy (Master's Degree)	

Subject Code
PHYS - Physics

Course Number
110

Department
Physics

Division
Science and Engineering (SE)

Full Course Title
Descriptive Physics

Short Title
Descriptive Physics

CB03 TOP Code
1902.00 - Physics, General

CIP Code
40.0801

CB08 Basic Skills Status
NBS - Not Basic Skills

CB09 SAM Code
E - Non-Occupational

Rationale
Add instructional methods and update text

SECTION B - Course Description

Catalog Course Description
A nonmathematical descriptive introduction to physics for non-science majors. Numerous slides and demonstrations will be used to illustrate the fundamental laws and applications of mechanics, heat, electricity, optics, atomic and nuclear physics.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit
No

Repeatability
Not Repeatable

Grading Options
Letter Grade or Pass/No Pass

Allow Audit
Yes

Requisites

SECTION D - Course Standards

Is this course variable unit?
No

Units
3.00

Lecture Hours
54.00

Outside of Class Hours
108

Total Contact Hours
54

Total Student Hours
162

Distance Education Approval

Is this course offered through Distance Education?
Yes

Online Delivery Methods

DE Modalities	Permanent or Emergency Only?
Entirely Online	Permanent
Hybrid	Permanent
Online with Proctored Exams	Permanent

SECTION E - Course Content

Student Learning Outcomes

	Upon satisfactory completion of the course, students will be able to:
1.	Demonstrate understanding of the physics underpinning much of our currently used technology.
2.	Demonstrate understanding of the scientific method.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1.	Use Newton's Laws to predict and explain the motion of an object.
2.	Describe the motion of objects as related through the concepts of position, displacement, speed, velocity and acceleration.
3.	Discuss the type of energy present in a system and use conservation of energy to solve problems.
4.	Explain the requirements for a complete circuit in terms of a model of electric charge.
5.	Describe color perception based on the wave nature of light and its interactions.
6.	Describe properties and structure of atoms.

Course Content

1. Mechanics/About Science
    a. The Study of Motion
    b. Newton's Laws of Motion
    c. Nonlinear Motion
    d. Vectors, Torque, and Mechanical Equilibrium
    e. Work, Power, and Energy
    f. Momentum
    g. The Law of Gravitation
2. Properties of Matter
    a. The Atomic Nature of Matter
    b. Solids
    c. Liquids
    d. Gases
    e. Fluids in Motion
3. Heat
    a. Temperature, Heat, and Expansion
    b. Transmission of Heat
    c. Change of State
4. Sound
    a. Vibrations and Waves
    b. Sound
    c. Musical Sounds
    d. Shock Waves and the Sonic Boom
5. Electricity and Magnetism
    a. Electricity at Rest
    b. Current Electricity
    c. Magnetism
    d. Electromagnetic Interactions
    e. Electromagnetic Radiation
6. Light and Quantum Theory
    a. The Wave and Quantum Nature of Light
    b. Light Emission and Color
    c. The Behavior of Light: Reflection and Refraction
    d. The Behavior of Light: Scattering, Diffraction, Interference, and Polarization Lenses
    e. Optical Instruments
    f. The Atom and the Quantum
    g. The Special Theory of Relativity
7. Nuclear Theory
8. Radioactivity
9. Nuclear Fission and Fusion

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Discussion	Discussion of class topics.
Lecture	In class lecture.
Observation and Demonstration	Physical or video demonstrations as appropriate.

Online Adaptation

Types	Examples of learning activities
Lecture	Online lecture.
Discussion	Discussion of class topics.
Other	Observation and demonstration in video format.

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
Chat Rooms
Discussion Boards
E-mail Communication
Telephone Conversations
Video or Teleconferencing

Student-Initiated Online Contact Types

Chat Rooms
Discussions
Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Exams/Tests	Exams on course material may include for example essay, short answer, multiple choice, matching questions.
Quizzes	Quizzes on course material.
Projects	Individual or group projects.
Homework	Homework problems from book or other questions about the class content.

Assignments

Reading Assignments

Reading assignments from the textbook, published articles, library books, or reputable online sources.

Writing Assignments

Examples of writing assignments may include research papers, discussion posts, personal reactions, note taking, and short answer explanations.

SECTION F - Textbooks and Instructional Materials

Material Type

Textbook

Author

Hewitt, Paul

Title

Conceptual Physics

Edition/Version
13th

Publisher
Pearson

Year
2022

ISBN #
9780137394975

SECTION G - Diversity, Equity and Inclusivity

How does your course and/or course outline of record reflect strategies for accommodating and engaging diverse student populations, advancing equitable outcomes, and fostering inclusion for all students?
Multiple types of activities and content delivery are included. Courses include policies for flexible deadlines and/or lowest scores dropped. In class, students are referred to student support services.

Course Codes (Admin Only)

CB00 State ID
CCC000305476

CB10 Cooperative Work Experience Status
N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status
Y - Credit Course

CB13 Special Class Status
N - The Course is Not an Approved Special Class

CB23 Funding Agency Category
Y - Not Applicable (Funding Not Used)

CB24 Program Course Status
Program Applicable

Allow Pass/No Pass
Yes

Only Pass/No Pass
No