Physics I

Course Overview and Syllabus

Course Subject Code: 5211

Grade level: 9-12

Prerequisite Courses: None

Credits: 1.0

Course Description

This full-year course acquaints students with topics in classical and modern physics. The course emphasizes conceptual understanding of basic physics principles, including Newtonian mechanics, energy, thermodynamics, waves, electricity, magnetism, and nuclear and modern physics. Throughout the course, students solve mathematical problems, reason abstractly, and learn to think critically about the physical world. The course also includes interactive virtual labs and hands-on lab options, in which students ask questions and create hypotheses.

Course Objectives

Throughout the course, you will meet the following goals:

- Conduct investigations and evaluate experimental designs.
- Explain and demonstrate how Newton's first and third laws describe the motion of objects, using vectors to calculate the effect of forces on these objects.
- Apply mathematical formulas to show the relationships among position, velocity, acceleration, and time
- Explain how energy is stored, conserved, and utilized.
- Examine the characteristics and behaviors of waves, sound, light, electricity, and magnets

The course objectives are implemented throughout specific lessons, which include examples of scientific and scholarly texts as well as virtual labs and wet labs which allow for a real-world, hands on experience. The objectives focus on investigating, evaluating, and exploring the scientific principles which guide further research and understanding.

The lesson objectives are assessed through assignments, quizzes, unit tests, virtual and wet labs and cumulative exams.

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course. Students are expected to spend approximately five to seven hours per week online on:

- Interactive lessons that include a mixture of instructional videos and tasks
- Assignments in which you apply and extend learning in each lesson
- Assessments, including quizzes, tests, and cumulative exams

Communication

Your teacher will communicate with you regularly through discussions, e-mail, chat, and system announcements, and will provide you with hours of availability, contact policies, and any synchronous attendance requirements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Assignments	10%
Labs	10%
Lesson Quizzes	20%
Unit Tests	30%
Cumulative Exams	20%
Projects	10%

Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

Unit 1: One-Dimensional Motion and Forces
Unit 2: Two-Dimensional Motion
Unit 3: Work and Energy
Unit 4: Matter and Thermodynamics
Unit 5: Waves and Sound
Unit 6: Waves and Light
Unit 7: Electricity
Unit 8: Magnetism and Electromagnetism
Unit 9: Nuclear Physics

Standards Alignment

The course was designed to meet the requirements of the 2014 Oklahoma Academic Standards for science. The standards aligned to each lesson are available in the student portal in the lesson information panel.

Materials and Technology Requirements

All course materials are provided through the student portal. You will become familiar with them through an orientation video and the student handbook. These resources are available within the Student Organizer, where you can also check the status of your operating system, processor speed, plug-ins and connection speed.

Accessibility

The course is designed for accessibility to all students. The system provides features and accommodations to meet the needs of ELL and students with IEP's, 504 plans, and Section 508. These accommodations include addressing multiple learning styles, accommodations for assessments, video caption/transcripts, read-aloud and translation tools, and many other features/accommodations.