

Physics

Course Overview and Syllabus

Course Number: SC3211WA

Grade level: 9–12

Prerequisite Courses: Chemistry, Algebra

Credits: 1.0

Course Description

Combining scientific inquiry with advanced mathematics, SC1117 is a stimulating, two-semester high school-level course that will challenge students to understand and explain how energy, matter, and motion are all related. Engaging lessons introduce theories and experiments and encourage students to develop the knowledge and understanding necessary to support conclusions with numerical results. Inspiring students to relate knowledge to real-world applications, the course connects basic principles to more complex ideas in many fascinating areas: thermal energy, vibrations and waves, light and refraction, sound, electricity, and magnetism.

Course Objectives

Throughout the course, you will meet the following goals:

- ✓ Apply mathematical formulas to show the relationships among position, velocity, acceleration, and time
- ✓ Depict the motion of an object using diagrams, graphs, and vectors
- ✓ Explain how energy is stored, conserved, and utilized
- ✓ Use mathematical relationships to calculate and apply Newton's Laws
- ✓ Examine the characteristics and behaviors of waves, sound, light, electricity, and magnets

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course. Throughout the course, you are expected to spend approximately 5–7 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, email, chat, and system announcements. 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
Quiz	20%
Test	30%
Exam	20%
Assignment	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:** Thermodynamics
- Unit 5:** Energy in the Earth
- Unit 6:** Waves, Sound, and Light
- Unit 7:** Electricity and Magnetism
- Unit 8:** Nuclear and Modern Physics