

**Course Name:** General Physics

**Duration:**  1 Semester  Full Year

**Grade Level:**  9th  10th  11th  12th (check all that apply)

### Are there any prerequisites for the course?

Science Prerequisite: None.

Math Prerequisite: Algebra.

### WHAT this course is about:

General Physics is a traditional introductory physics course, deliberately kept at a low level of math. Algebra is required but will be taught alongside the physics content. The emphasis during first semester is on the first principles of physical science: motion, force, conservation laws. Multiple lab activities will be used, including video analysis and hands-on project work. The emphasis during second semester is on modern applications, such as music theory, engineering, and optics. .

### WHY take this course:

Physics is the second oldest science, after astronomy. All physical sciences use the concepts that are developed in this class, and all other quantitative sciences can be reduced to problems in physical quantities. In any physics course the student learns how to see the world in a new way, a way that allows the student to understand, explain and predict anything that has mass or energy. General Physics is unique because it covers many topics superficially, leaving in-depth treatment for future course if the student chooses to pursue the topic.

### WHAT you'll learn:

- Determine strategies of what helps you learn and develop conceptual understanding.
- Conceptual understanding at the high school level with various topics in physics.
- Analytical and critical thinking, with emphasis on problem solving skills.
- The proper role and limitations of mathematical models of behavior.
- Hands-on approaches to learning, including science and engineering practices.

### WHAT you'll do:

- Hands-on science and engineering investigations, from guided activities to open inquiry.
- Engage in an I do, we do, you do approach to learning.
- Have options for deepening practice and understanding physics concepts
- Work collaboratively with others in a variety of thinking, processing, and hands-on activities

## **WHERE this could take you:**

General Physics is perfect for students who want to be introduced to the subject, but do not want the significant challenge of an AP class. Regardless of future choices, students will have learned the foundations of all physical science.

## **OPTIONAL Course Outline (“scope and sequence”, sequence chart, etc.)**

### *Year at a Glance for General Physics*

- Accelerated motion
- Forces and Newton’s Laws
- Energy and Momentum
- Rotation
- Waves
- Optics
- How Engines work
- Applied Physics Projects