Honors Physics

Honors Physics is designed for the 11th or 12th grade student who has an interest in how the physical world works, and/or whose career interests require a thorough understanding of Physics. This course is intended to prepare the student for an introductory non-calculus based physics course taken in college. Topics include: kinematics, dynamics, energy, momentum, and (time permitting) angular motion. This course is offered for one semester, and students attend class for one block a day. Students should read their textbooks independently keeping pace with the course topics. Students are expected to do homework when it is assigned. Quizzes and tests are given for each unit. The tests and quizzes contain a variety of question types including short answer and essay. There will also be several labs in this course that enhance the topics being discussed.

By the end of HN Physics, students will know:

- **Kinematics -** the students will be able to describe the motion of objects in a scientifically literate manner using descriptions, equations, diagrams, and graphical methods.

- **Dynamics -** the students will be able to describe the causes of motion in a scientifically literate manner using descriptions, equations, diagrams, and graphical methods.

- **Energy -** the students will develop a thorough understanding of energy, and use the the Law of Conservation of Energy to explain phenomena and solve problems.

- **Momentum -** the students will develop a thorough understanding of momentum, and use the Law of Conservation of Momentum to explain phenomena and solve problems.

- **Angular Motion** - (Time Permitting) the students will use analogies from translational motion to develop a thorough understanding of rotational kinematics and dynamics. They will use this information to solve more complex physics problems.

Students may choose to take AP Physics 1 after completion of HN Physics, but HN Physics is **NOT** a prerequisite for AP Physics 1. Students should discuss whether they should schedule AP Physics 1 instead of HN Physics with the AP Physics instructor prior to scheduling.