Physics

The following learning targets represent the major concepts studied and assessed in this course.

Semester 1:

Unit 1: Introduction to Mathematical Concepts

- Demonstrate how to use laboratory equipment and procedures properly.
- Demonstrate how to use science and engineering design to solve real world problems.
- Explain how the principles of physics influences my everyday life.

Unit 2: Linear Motion

- Compare the effects of one dimensional forces on an object's motion.

Unit 3: Projectile Motion

- Compare the effects of two dimensional forces on an object's motion.

Unit 4: Forces and Newton's Laws

- Compare the effects of three dimensional forces on an object's motion.
- Use mathematical representations to describe and predict forces that act a distance.

Semester 2:

Unit 5: Momentum

- Mathematically support the claim that there is a conservation of momentum in a system
- Use mathematical representations to describe and predict forces that act a distance.

Unit 6: Energy

- Use mathematical models to calculate the change in energy of the components in a system.
- Explain that energy can be a combination of motion and relative position of particles.
- Refine a design that involves the conversion of energy.
- Describe the interaction between two objects through electric or magnetic fields and the changes in energy due to the interaction.

Unit 7: Waves

- Explain how waves behave in different media.
- Evaluate the use of wave and particle models to describe light
- Explain information about electromagnetic radiation interacting with matter.
- Analyze claims regarding the effects different frequencies of electromagnetic radiation have when absorbed by matter.