**UNIT 4: MOTION IN TWO DIMENSIONS (9 DAYS)**

Upon completion of this unit, the student should be able to:

1. Use the equations of motion in two dimensions to calculate range, time of flight, and vertical distance fallen for type 1 trajectory problems. (type 1 is horizontal trajectories)
2. Use the equations of motion in two dimensions to calculate range, time of flight, and vertical distance fallen for type 2 trajectory problems. (type 2 are at an angle trajectories)
3. Describe the shape of the path followed by a projectile in Earth’s gravitational field.
4. Differentiate between horizontal and vertical components of projectile motion.
5. Explain what is meant by independence of vectors and why it is important.
6. Explain the difference between enfilade and defilade fire (NAVY terms).
7. Construct position-time and velocity-time graphs from given data and use the graphs to analyze the motion of a projectile.

**Reference: Holt Physics (Serway/Faughn), Chapter 3.3**

**Homework: Problem Set, a textbook homework assignment.**

**Labs: Bulls Eye Lab (steely flying off desk to your calculated range on the floor), Analysis of Basketball Shot, Paper Rocket Shot Horizontally, Hot Wheels Jump**