

**Course Name:** Physics                      **Level:** Advanced                      **Points:** 5

**Texts/Instructional Materials:**  
Modern Physics

**Syllabus:**

- 1<sup>st</sup> Quarter:**
- I. Introduction to physics
    - A. The scientific method
    - B. Matter and energy
    - C. The wave/particle duality
    - D. High energy physics
  - II. Measurement and problem solving
    - A. Metric system
    - B. Making and recording measurements
    - C. Problem solving
  - III. Velocity and acceleration
    - A. Velocity
    - B. Acceleration
    - C. Newton's laws of motion
    - D. Gravitation

Assessment includes daily assignments of questions and problems from the text and worksheets, lab reports and examinations on each major section.

- 2<sup>nd</sup> Quarter:**
- IV. Concurrent and parallel forces
    - A. Composition of forces
    - B. Resolution of forces
    - C. Friction
    - D. Parallel forces
  - V. Two-dimensional and periodic motion
    - A. Circular Motion
    - B. Rotary Motion
    - C. Harmonic Motion
  - VI. Conservation of energy and momentum
    - A. Work, machines and power
    - B. Energy
    - C. Momentum

Assessment includes daily assignments of questions and problems from the text and worksheets, lab reports, examinations on each major section and mid-year examination.

- 3<sup>rd</sup> Quarter:**
- VII. Molecular forces
    - A. The structure of matter
    - B. The solid phase
    - C. The liquid phase
    - D. The gaseous phase
  - VIII. Heat measurements