

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

Texts/Instructional Materials:
Modern Physics

Syllabus:

- 1st 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.

- 2nd 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.

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