**Honors Physics**

The high school honors physics course of study is designed to give a foundation for successful completion of college physics. The class gives an understanding of the many branches of physics while giving an introduction to the many physics related careers that are available

 **Course Prerequisites**: Algebra II with a B or higher

 **Course Co-requisite**: Advanced Math or Calculus unless already completed.

1. **General Objectives and Sequential Time frame:**

**Students study a variety of topics that include:**

 Introduction to the study of Physics (1.0 week) 1

 Measurement and Problem Solving (1.0 week) 2

 Velocity and Acceleration

 Velocity (1.0 week) 3

 Acceleration (1.0 week) 4

 Laws of Motion (1.0 week) 5

 Gravitation (1.0 week) 6

 Concurrent and Parallel Forces

 Composition of Forces (1.0 week) 7

 Resolution of Forces (1.0 week) 8

 Friction (1.0 week) 9

 Parallel Forces (1.0 week) 10

 Two-Dimensional and Periodic Motion

 Circular Motion (1.0 week) 11

 Rotary Motion (1.0 week) 12

 Harmonic Motion (1.0 week) 13

 Conservation of Energy and Momentum

 Work, Machines, and Power (1.0 week) 14

 Energy (0.75 week) 14.75

 Momentum (1.0 week) 15.75

 Phases of Matter

 Solid Phase (0.5 week) 16.25

 Liquid Phase (0.5 week) 16.75

 Gaseous Phase (0.5 week) 17.25 End of 1st Semester

 Heat Measurements

 Units of Temperature and Heat (1.0 week) 1

 Thermal Expansion (1.0 week) 2

 Heat Exchange (1.0 week) 3

 Change of Phase (0.5 week) 3.5

 Heat Engines

 Heat and Work (1.5 week) 5.0

 Heat Transfer Mechanisms (1.0 week) 6.0

 Waves

 Nature of Waves (0.5 weeks) 7.5

 Wave Interactions (1.0 week) 8.5

 Sound Waves (1.5 weeks) 10

 Nature of Light

 Reflection (0.5 week) 10.5

 Refraction (1.0 week) 11.5

 Diffraction (0.5 week) 12

 Electrostatics

 Electric Charge (1.0 week) 13

 Potential Difference (1.0 week) 14

 Direct Current Circuits

 Sources (1.0 week) 15

 Series and Parallel Circuits (1.0 week) 16

 Introduction to Alternating Current

 Magnetism (0.5 week) 16.5

 Joules Law (0.5 week) 17.0

 Power (0.5 week) 17.5

 Electromagnetism (0.5 week) 18

* 1. **t include:**

**Textbook used**:

**Grading Scale:**

25% homework,  25% labs,  25% Test,   25% quiz

**Supplies needed:**

pen/paper, notebook, spiral notebook for lab reports, Scientific calculator,