



Physics - Course Syllabus

Description:

This rigorous full-year course engages students in the study of matter and energy and their interactions. The components of this course include, motion, work, gravity, heat, waves, sound, light, electricity, circuits, magnetism, atoms, electronics, and applications of physics in the real world.

Textbook: Physics Concepts – Excel Education Systems, Inc 2019 ©

Course objectives:

Throughout the course, you will meet the following goals:

- Describe the nature of physics and its related fields.
- Explore the scientific method of inquiry and its applications.
- Understand the concepts and relationship between displacement, time/speed, and velocity
- Examine the causes of circular motion, including gravitation.
- Understand the concept of wave motion, including wave speed, frequency, wave length, amplitude, and energy, and discuss their relationships.
- Describe an electric field, including positive and negative charges, conductors and insulators, and the properties of conductors in electrostatic equilibrium.

Contents:

Semester A

- 1: Introduction to Physics
- 2: Vectors
- 3: Motion in a Straight Line
- 4: Force
- 5: Motion in Two Dimensions
- 6: Universal Gravitation
- 7: Momentum
- 8: Energy
- 9: Work, Power, and Simple Machines
- 10: Thermal Energy
- 11: The Fluid States
- 12: Waves and Energy Transfer

Semester B

- 13: Light
- 14: Geometric Optics
- 15: Diffraction/Interference of Light
- 16: Static Electricity
- 17: Electric Fields
- 18: Current Electricity
- 19: Electrical Circuits
- 20: Magnetic Fields
- 21: Electromagnetic Induction
- 22: The Nucleus
- 23: The Atom
- 24: Astrophysics
- 25: Relativity

Grading Scale

- A = 90-100%**
B = 80-89%
C = 70-79%
D = 60-69%
F = under 59%

Grade Weighting

- Quizzes..... 70%**
Mid-Term/Final Exams..... 30%
100%