Physics
1st Semester

CONTENT	DATE
ONE-DIMENSIONAL, TWO-DIMENSIONAL, AND CIRCULAR MOTION • Introduction to the Language of Physics • Scientific Method • Scalars and Vectors • Speed and Velocity • Acceleration and Acceleration Due to Gravity • Vectors • Projectiles • Mechanics • Project: Virtual Lab—Projectiles • Uniform Circular Motion • Project: Virtual Labs — Circular Motion	August 6 - October 9
FORCES AND MOTION • Newton's First and Second Laws • Newton's Laws and Free Body Diagrams • The Problems of Newton's Laws • Project: Virtual Lab — Newton's Laws • Gravity • Newton's Third Law and Conservation of Momentum	October 19 - November 13
CONSERVATION OF ENERGY AND MOMENTUM AND BEHAVIOR OF SYSTEMS • Work, Kinetic, and Potential Energy • Newton's Third Law and Conservation of Momentum • Project: Virtual Lab—Conservation of Momentum	November 16 - December 11
REVIEW AND FINAL EXAMS	December 14 - 18

Physics
2nd Semester

CONTENT	DATE
PROPERTIES AND APPLICATIONS OF WAVES	January 4 - February 26

- Characteristics of Waves
- Experiment: Wave Speeds
- Experiment: Pulses
- Wave Phenomena
- Experiment: Waves
- Sound Waves
- Project: Virtual Lab — Sound
- Project: Virtual Lab — Doppler Effect
- Project: Sound Resonance
- Wave Motion
- Special Project
- Speed of Light: Historical Calculations
- Properties of Light
- Experiment: Light Angles
- Mirrors
- Experiment: Convergence
- Lenses
- Project: Virtual Lab — Light
- Light Phenomena and Models of Light
- Project: Digital Transmissions
- Experiment: Light Observations
- Light and Sound
- Special Project

Physics
2nd Semester (Cont.)

CONTENT	DATE
ELECTRICITY AND MAGNETISM	March 1 - April 16

- Electric Charges
- Coulomb's Law
- Experiment: Static Electricity
- The Transfer of Charges
- Electric Fields
- Electric Potential
- Potential and Energy
- Electric Fields and Forces
- Sources of EMF
- Fluid Flow
- Project: Research and Report
- Special Project
- Resistance
- Ohm's Law
- Circuits
- Project: Virtual Labs — Circuits
- Fields and Forces
- Forces
- Electromagnetism
- Electromagnetic Induction
- Applications of Electromagnetic Induction
- Project: Electromagnetism
- Electron Beams
- Magnetic Fields and Forces
- Special Project

NUCLEAR CHANGES OF MATTER AND TECHNOLOGICAL APPLICATIONS — April 19 - May 7

- Bohr Model
- Nuclear Forces
- Fusion and Applications of Nuclear Energy
- Nuclear Reactions
- Nuclear Theory
- Radioactive Decay
- Report: Nuclear Energy

COURSE/PROJECT COMPLETION AND REVIEW — May 10 - 21

FINAL EXAMS — May 24 - 26