Online Courses for High School Students
1-888-972-6237

Physics (Credit Recovery)

A diagnostic driven credit recovery course is designed to give an expanded opportunity for students who did not succeed the first time in the course.

Students are given the opportunity in each learning unit to demonstrate their knowledge in that area of study. If they demonstrate competency in their unit assessment they will be presented with the following unit. If they do not demonstrate competency then they are required to do the entire unit.

Requirement:
For a student to take a credit recovery course, they must have already taken the class unsuccessfully and have the appropriate seat time.

Semester A

Students begin their exploration of physics by reviewing the International System of Units (SI), scientific notation, and significant digits. They then learn to describe and analyze motion in one- and two-dimensions. Students learn about gravity and Newton's laws of motion before concluding the course with an examination of circular motion, energy, and simple machines. Students apply mathematical concepts, such as graphing and trigonometry, in order to solve physics problems.

Prerequisite: Physics (Student must have taken Physics unsuccessfully and have the appropriate seat time).
Labs: All labs must be provided and administered by the home district.
Course Length: One Semester
Materials: https://ideal.accelerate-ed.com/materials/233768192/course

Module 1:

- History of Science
- Physics-The Basic Science
- The Scientific Method
- Writing a Laboratory Report
- Technology in Science
- Error and Significant Figures

Module 2:

- Measurements in Experiments
- Mathematics as the Language of Physics
- 1D Vectors and Displacement
- Velocity
- Acceleration
- Free Fall Acceleration

Module 3:

- 2D Vectors
- Two-Dimensional Vector Addition
- Projectile Motion- Part 1
- Projectile Motion- Part 2
- Relative Motion
- What is a Force?

Module 4:

- Net Force & Newton's First Law
- Newton's 2nd Law
- Newton's 3rd Law
- Normal Force & Apparent Weight
- Force of Friction
- More Challenging Force Problems

Module 5:

- Pressure
- Newton's Law of Universal Gravitation
- Circular Motion
- Centripetal Force
- Work
- Energy

Module 6:

- Power
- Momentum and Impulse
- Conservation of Momentum
- Collisions
- Torque
- Simple Machines

Semester B

Physics B CR continues the student's exploration of mechanics while also guiding them through some other important topics of physics. Students begin by exploring simple harmonic motion, wave properties, and optics. Students then learn the basics of thermodynamics and fluids. Afterwards, the students explore the principles of electricity and magnetism. Finally, students explore the area of physics known as Modern Physics, which includes topics such as the photoelectric effect, nuclear science, and relativity. This is a trig-based course. It is assumed students know and can use trigonometry.

Module 7:

- Simple Harmonic Motion
- Measuring Simple Harmonic Motion
- Wave Properties
- Interactions of Waves
- Sound Waves
- Fundamental Frequencies and Harmonics

Module 8:

- Light and Color
- Reflection & Mirrors
- Refraction & Lenses
- Temperature
- Thermal Equilibrium and Thermal Expansion
- Heat

Module 9:

- Calorimetry & Specific Heat
- Phase Changes & Latent Heat
- Heat, Work, & Thermodynamic Processes
- First Law of Thermodynamics
- Second Law of Thermodynamics
- Fluids

Module 10:

- Electrical Charge
- Coulomb's Law and Electric Fields
- Electrical Energy
- Electric Circuits and Ohm’s Law
- Series Circuits
- Parallel Circuits

Module 11:

- Introduction to Magnetism
- Magnetism from Electricity
- Magnetic Force
- Electromagnetic Induction
- Quantization of Energy & The Photoelectric Effect
- Waves as Particles

Module 12:

- Atomic Structure
- Atomic Spectra
- The Nucleus
- Radioactivity
- Fission and Fusion
- Special Relativity