

# PHYSICS (PHYSICS)

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## **PHYSICS 1050 Principles of Physics 5 Credits**

Mechanics, waves, fluid dynamics, heat, electricity, magnetism, light and optics. This course emphasizes the use of physics principles in analyzing physical systems.

**Components:** Laboratory, Discussion, Class

**GE:** Natural Science

**Prereqs/Coreqs:** P. MATH 15 or MATH 1530 or mathematics proficiency level of 15 or above

## **PHYSICS 1350 Introductory Physics I 5 Credits**

Mechanics, thermodynamics, and wave properties for science and pre-professional students, including an introduction to experimental techniques and experiments. This course is the first semester of a two-semester sequence; students looking for a one-semester algebra-based physics course should take PHYSICS 1050.

**Components:** Discussion, Laboratory, Class

**GE:** Natural Science

**Prereqs/Coreqs:** P. MATH 1530 or MATH 2450 or math proficiency level of 30 or above

## **PHYSICS 1450 Introductory Physics II 5 Credits**

A continuation of PHYSICS 1350 including topics and experiments in electricity and magnetism, optics, atomic physics, and nuclear physics.

**Components:** Discussion, Laboratory, Class

**Prereqs/Coreqs:** P. PHYSICS 1350

## **PHYSICS 1640 Physics for Video Games 4 Credits**

Key physics concepts that show up in simple video games. 2D motion with and without acceleration, inertia and force, center of mass, collisions and explosions, relative velocity. Concepts will be illustrated in hands-on laboratory exercises and their application will be demonstrated by coding simplified versions of classic arcade games. No prior coding experience is necessary, students will be taught elementary coding and examples will be provided to teach important techniques.

**Components:** Laboratory, Class

**GE:** Natural Science

**Prereqs/Coreqs:** P. MATH 15 OR MATH 1530 OR mathematics proficiency level 15+ OR COMPUTER 1430

## **PHYSICS 2240 General Physics I 4 Credits**

Calculus-based course in mechanics and wave properties for students of engineering, mathematics, and science, including an introduction to experimental techniques and experiments.

**Components:** Laboratory, Class

**GE:** Natural Science

**Prereqs/Coreqs:** P. MATH 2640 with a C- or better or GENENG 1500 with a C- or better

## **PHYSICS 2340 General Physics II 4 Credits**

Electricity, magnetism, and optics for students of engineering, mathematics, and science, including an introduction to experimental techniques and experiments.

**Components:** Discussion, Laboratory, Class

**Prereqs/Coreqs:** P. PHYSICS 2240 with a "C-" or better; MATH 2740 with a "C-" or better

## **PHYSICS 3140 Modern Physics 4 Credits**

An introduction to special relativity, kinetic theory, quantum physics, the Schrodinger equation in one and three dimensions, a brief introduction to nuclear physics, energy bands of crystalline solids, the physics of semiconductors and its application to semiconducting devices.

**Components:** Laboratory, Class, Discussion

**Prereqs/Coreqs:** P. PHYSICS 2340 with a "C-" or better; CHEMISTRY 1450 or 1240 C: MATH 3630

## **PHYSICS 4940 Independent Study in Physics 1-4 Credits**

Study of special topics and/or developments of special projects having department approval.

**Components:** Independent Study