PHYSICS

PHYS 216 Newtonian Mechanics for Engineering and Science **3 Credits**
Grade Mode: Standard Letter, Audit/Non Audit
Prerequisite(s): MATH 161

Newtonian Mechanics for Engineering and Science, is the first semester of a two-semester sequence in introductory physics, intended to introduce students to the basic principles of Newtonian mechanics and harmonic motion. We will cover topics in mechanics, Newton's Laws, the concepts of energy and work, conservation of energy and momentum, rotational motion, gravity, harmonic motion and waves. The course is taught with lectures, recitations and in-class participation. The material is presented at a level that requires significant algebra and trigonometry, as well as some basic calculus.

PHYS 217 Electricity and Magnetism for Engineering and Science **3 Credits**
Grade Mode: Standard Letter, Audit/Non Audit
Prerequisite(s): PHYS 216 and MATH 162 and PHYS 226

Electricity and Magnetism for Engineering and Science is a continuation of the course on Mechanics, introduces concepts and laws by which electric, magnetic, and optical phenomena can be described and analyzed both quantitatively and qualitatively. This is an advanced physics course substantially based on calculus tackling electricity and magnetism; electromagnetic phenomena; basic laws of electricity and magnetism; science and engineering problems involving charges, electromagnetic fields, and electrical circuits. The course is taught with lectures, recitations and in-class participation.

PHYS 226 Experimental Physics and Engineering Laboratory I: Mechanics **1 Credit**
Grade Mode: Standard Letter
Prerequisite(s): MATH 161

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PHYS 227 Experimental Physics and Engineering Laboratory II: Electricity and Magnetism **1 Credit**
Grade Mode: Standard Letter

This course focuses on the description and application of the laws of electromagnetism to the solution of science and engineering problems. During most bi-weekly projects, students are introduced to a variety of sensors and their basic calibration, and students will program the computer-based data-acquisition and control framework. Using sensing, control and actuation these lab projects target experimental verification of the physics concepts while solving direct engineering problems.