

PHYSICS (PHYS)

PHYS 1100 Credits: 4

Physics 1 Total Hours: 120

This course is the first half of a standard 1st year calculus-based physics course (PHYS 1200 is the second half). The course covers mechanics, including vectors, kinematics, dynamics, energy, momentum, rotational motion, oscillations, waves, and sound. In the laboratory, students will develop measurement, analysis and lab report writing skills.

Pre-requisite(s): Physics 12 with a minimum 'C+' grade or equivalent; Precalculus 12 with a minimum 'C+' grade or equivalent; MATH 1100 Calculus 1 taken prior or concurrently

PHYS 1110 Credits: 3

Introduction to Astronomy Total Hours: 60

This course offers a survey of astronomy designed primarily for non-science students, with a strong emphasis on active learning outside the classroom. It covers the development of astronomy, naked-eye observations of the night sky, modern observational equipment and techniques, the solar system, stellar evolution, galaxies, the Hubble expansion, the Big Bang, dark matter, dark energy, and startling new theories of the origin and destiny of the universe. Students will conduct lab activities involving night-sky observations, as well as introductory experiments in some of the basic physics that astronomers use to explore the cosmos.

Pre-requisite(s): Precalculus 11 with a C or VCC MATH 0861/0871 with a C or 72% on the VCC Intermediate algebra assessment or equivalent

PHYS 1170 Credits: 3

Mechanics 1 Total Hours: 60

This course is designed for engineering students. It covers Newton's laws, kinematics, statics, and dynamics for particles and systems of particles, static and rotational equilibrium, analysis of structures, planar motion of rigid bodies, as well as Thermodynamics. The emphasis of this course will be on solving problems.

Pre-requisite(s): Physics 1 (PHYS 1100) and Calculus 1 (MATH 1100), both with a minimum 'C-' grade

PHYS 1190 Credits: 3

Physics of Music Total Hours: 60

This course surveys the physics concepts related to music and is aimed primarily at non-science students. The course covers the propagation of sound, as well as the production and perception of music. Physics concepts will be illustrated using demonstrations and hands-on laboratory activities. Students will have the opportunity to perform simple physics experiments on actual musical instruments.

Pre-requisite(s): Precalculus 11 with a C or VCC MATH 0861/0871 with a C or 72% on the VCC Intermediate algebra assessment

PHYS 1200 Credits: 4

Physics 2 Total Hours: 120

This course is the second half of a standard 1st year calculus-based physics course (PHYS 1100 is the first half). Topics include electricity and magnetism, geometric optics, physical optics and quantum physics (including radioactivity). Students will perform laboratory experiments connected to these topics and to familiarize themselves with operating lab instruments such as linear power supplies, digital multi-meters, function generators and oscilloscopes. Students will also learn proper breadboarding and printed wiring board assembly techniques.

Pre-requisite(s): PHYS 1100; MATH 1200 taken prior or concurrently