

PHYSICS

Cascade Campus
Jackson Hall (JH), Room 210
503-978-5209

Rock Creek Campus
Building 7, Room 202
503-614-7500

Southeast Center
Mt. Scott Hall (MSH), Room 103
503-788-6147

Sylvania Campus
Science Technology Building (ST), Room 312
503-977-4174

DESCRIPTION

Physics is the root discipline of science that describes the natural universe at its most fundamental level. Physics is relevant to a broad range of academic pursuits including chemistry, biology, engineering, medicine and liberal arts. Physics allows students to view the world with a new understanding and appreciation of its order and beauty.

Physics is offered at three different levels: conceptual physics (PHY 101, PHY 102, PHY 103) algebra based (PHY 201, PHY 202, PHY 203) and calculus based (PHY 211, PHY 212, PHY 213). An introductory astronomy series is also offered (PHY 121, PHY 122, PHY 123). See the Course Description (PHY prefix) section of this catalog for individual Physics courses and course prerequisites.

COURSE DESCRIPTIONS

PHY 101 Fundamentals of Physics I 4.00 Introduction to Physics. Includes mechanics, vectors, energy, simple machines, satellite motion, and the theory of special relativity. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHY 102 Fundamentals of Physics II 4.00 A conceptual study of physics. Topics include properties of matter, heat and thermodynamics, and atomic and nuclear physics. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHY 103 Fundamentals of Physics III 4.00 A conceptual study of physics. Topics include waves and sound, electricity and magnetism, and light and optics. Prerequisite: WR 115, RD 115, and MTH 20 or equivalent placement test scores.

PHY 121 Elementary Astronomy 4.00 Introduces the contents of our solar system, including the earth, its moon, the other planets and moons; asteroids, comets, and meteors. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHY 122 Elementary Astronomy 4.00 Introduces stellar astronomy, including our sun, properties of stars, and stellar evolution. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHY 123 Elementary Astronomy 4.00 Introduction to star clusters, the contents of our galaxy; other galaxies, including active galaxies, and cosmology. Algebra recommended. Prerequisite: WR 115, RD 115 and MTH 20 or equivalent placement test scores.

PHY 196 Observational Astronomy 1.00 Designed to teach use of telescopes and binoculars in conjunction with star atlases and catalogs in locating and identifying astronomical objects in night skies. An introduction to clock drives, astrophotography, and photoelectric photometry will be provided. Prerequisite: PHY 123.

PHY 201 General Physics 4.00 Introductory physics (algebra based) for science majors, pre-medical, pre-dental, pre-chiropractic and pre-physical therapy students. Topics include mechanics including statics, forces and motion energy, collisions, circular motion and rotational dynamics. Prerequisite or concurrent: MTH 111A, B or C and their prerequisite requirements.

PHY 202 General Physics 4.00 Topics include mechanical properties of matter, heat, waves, sound and light. Algebra-based physics. Prerequisite: PHY 201 and its required prerequisites.

PHY 203 General Physics 4.00 Topics include electricity, magnetism and radioactivity. Algebra-based physics. Prerequisite: PHY 201 and its prerequisite requirements.

PHY 211 General Physics (Calculus) 5.00 Topics include concepts in mechanics and their relationship to practical applications for science and engineering majors. Prerequisites: MTH 251 and MTH 252 and their prerequisite requirements. Prerequisite/Concurrent: MTH 252.

PHY 212 General Physics (Calculus) 5.00 Topics include concepts in fluid mechanics, waves, thermodynamics and optics. Prerequisites: PHY 211 and its prerequisite requirements.

PHY 213 General Physics (Calculus) 5.00 Topics include concepts in electromagnetism together with their relationship to practical applications. Prerequisites: PHY 211 and its prerequisite requirements.