Physics (PHYS)

Courses

**PHYS 1010. Elementary Physics (PS). 3 Hours.**
Fulfills General Education Physical Science requirement for students not majoring in Physics, other Sciences, or Engineering. Covers the basic concepts of physics in an historical perspective, providing many practical examples that demonstrate the role of physics in their everyday life. PHYS 1015 lab course recommended but not required. Prerequisite: ACT Math Placement score 23 or higher; OR MATH 1010 or MATH 1000 (Grade C or higher in either class). FA, SP, SU.

**PHYS 1015. Elementary Physics Lab (LAB). 1 Hour.**
Lab portion of PHYS 1010. Lab fee required. Offered upon sufficient student need. Corequisite: PHYS 1010.

**PHYS 1040. Elementary Astronomy (PS). 3 Hours.**
Fulfills General Education Physical Science requirement intended for students not majoring in Physics, other Sciences, or Engineering. Covers a general study of the solar system, including the formation of the solar systems and a brief description of its parts. Also covers a brief history of astronomy and a general study of the known universe. Course fee required. Corequisite: PHYS 1045. FA, SP.

**PHYS 1045. Elementary Astronomy Lab (LAB). 1 Hour.**
Lab portion of PHYS 1040. Lab fee required. Corequisite: PHYS 1040. FA, SP.

**PHYS 2010. College Physics I (PS). 4 Hours.**
Fulfills General Education Physical Science requirement for students majoring in some Science programs, and pre-Medical, pre-Dental, and other pre-professional programs. Covers the basics of mechanics, heat, and sound. First course in a two-semester sequence required for further study in science fields. Prerequisite: MATH 1060 or MATH 1080 (Grade C or higher), or equivalent placement score taken within 2 years prior to enrollment in this course. Corequisite: PHYS 2015. FA.

**PHYS 2015. College Physics I Lab (LAB). 1 Hour.**
Lab portion of PHYS 2010. Lab fee required. Corequisite: PHYS 2010. FA.

**PHYS 2020. College Physics II. 4 Hours.**
Second course in a two-semester sequence required for further study in science fields for students majoring in some Science programs, and pre-Medical, pre-Dental, and other pre-professional programs. Covers the basics of electricity, magnetism, light, and modern physics. Uses lecturers, videos, and demonstrations. Prerequisite: PHYS 2010 (Grade C or higher). Corequisite: PHYS 2025. SP.

**PHYS 2025. College Physics II Lab. 1 Hour.**
Lab portion of PHYS 2020. Lab fee required. Prerequisite: PHYS 2015 (Grade C or higher). Corequisite: PHYS 2020. SP.

**PHYS 2210. Physics/Scientists Engineers I (PS). 4 Hours.**
Fulfills General Education Physical Science requirement for students majoring in physical science, engineering, and some biological/plant sciences. First course in an intensive two-semester sequence. Covers basic principles of physics, emphasizing mechanics with the objective of developing students' capacities to analyze problems in physics and to express solutions in mathematical form utilizing mathematics up to and including calculus. Successful completion satisfies prerequisite for ENGR 2000. Prerequisite: MATH 1210 (Grade C or higher) or MATH 1220 (can be concurrently enrolled). Corequisite: PHYS 2215. FA.

**PHYS 2215. Physics/Scientists Engineers Lab (LAB). 1 Hour.**
Lab portion of PHYS 2210. Lab fee required. Corequisite: PHYS 2210. FA.

**PHYS 2220. Physics/Scientists EngineersII. 4 Hours.**
Second course in a two-semester sequence required for students majoring in physical science, engineering, and some biological/plant sciences. Covers basic principles of physics, emphasizing electricity and magnetism; optics, and relativity with the objective of developing students' capacities to analyze problems in physics and to express solutions in mathematical form utilizing mathematics up to and including calculus. Successful completion of this series satisfies Physics requirements for Physical Science and Engineering. Prerequisite: MATH 1220; and PHYS 2210. Corequisite: PHYS 2225. SP.

**PHYS 2225. Physics/Scientists Engineers II Lab. 1 Hour.**
Lab portion of PHYS 2220. Lab fee required. Prerequisite: PHYS 2215. Corequisite: PHYS 2220. SP.

**PHYS 2710. Introductory Modern Physics. 3 Hours.**
For students majoring in Physics and some Engineering fields, also recommended for Chemistry and other Science majors. Includes relativity; wave-particle duality; and an introduction to quantum physics, atomic physics, and nuclear physics. Prerequisites: MATH 2280; and PHYS 2220/2225. Offered upon sufficient student need.
PHYS 2990. Seminar in Physics. 0.5-3 Hours.
For students wishing instruction that is not available through other regularly scheduled courses in this discipline. Occasionally, either students request some type of non-traditional instruction, or an unanticipated opportunity for instruction presents itself. This seminar course provides a variable credit context for these purposes. As requirements, this seminar course must first be pre-approved by the department chair; second, it must provide at least nine contact hours of lab or lecture for each credit hour offered; and third, it must include some academic project or paper (i.e., credit is not given for attendance alone). This course may include standard lectures, travel and field trips, guest speakers, laboratory exercises, or other non-traditional instruction methods. Note that this course is an elective and does not fulfill general education or program requirements. Prerequisite: Instructor permission.

PHYS 3400. Classical Mechanics. 3 Hours.
Study of Newtonian Mechanics, work and energy, systems of particles, Lagrange’s and Hamilton’s equations, harmonic oscillators, accelerated reference frames, and rigid body rotations. Offered upon sufficient student need. Prerequisite: PHYS 2220 (Grade C or higher).

PHYS 3710. Intermediate Modern Physics. 3 Hours.
For students majoring in Physics and Physical Science education. Includes a basic study of relativity and wave-particle duality, as well as an introduction to quantum physics, atomic physics, and nuclear physics. Prerequisite: MATH 1220 (Grade C or higher) AND PHYS 2220 (Grade C or higher). Offered upon sufficient student need.

PHYS 3720. Modern Physics II. 3 Hours.
Second course in a two-semester sequence for students majoring in Physics and Physical Science education. Continuation of Physics 3710 with an emphasis on applications of quantum mechanics and relativity. Prerequisite: PHYS 3710 (Grade C or higher). SP (odd).