Physics (PHY)

Courses

PHY-103. Concepts of Physics. 4 Credits.
LECT 45 hrs LAB 30 hrs
This is a one-semester examination of the basic concepts of kinematics and dynamics, conservation of energy, heat and selected topics in electricity, magnetism and modern physics.
Prerequisites: MAT-007 or passing score on algebra section of Basic Skills Placement test
Additional Fees: Course fee applies.

PHY-111. Technical Physics I. 4 Credits.
LECT 45 hrs LAB 45 hrs
This is the first course of a two-semester applied physics course covering particle kinematics, Newton's laws, oscillatory motion, conservation of energy, heat and the gas laws.
Prerequisites: ENR-119, ENR-124 AND MAT-110, OR MAT-110 AND ENR-132 OR MAT-123
Additional Fees: Course fee applies.

PHY-112. Technical Physics II. 4 Credits.
LECT 45 hrs LAB 45 hrs
This is the second course of a two-semester applied physics course covering the essentials of electricity and magnetism, and selected topics from fluid mechanics, wave theory and optics.
Prerequisites: PHY-111
Additional Fees: Course fee applies.

PHY-118. Meteorology. 4 Credits.
LECT 45 hrs LAB 45 hrs
This course is an introduction to meteorology. Topics include observing the weather, clouds and precipitation, winds and the circulation of the atmosphere, air masses and fronts, cyclones and anticyclones, historic weather events, hurricanes, thunderstorms and tornadoes, atmospheric stability, weather maps and weather forecasting, radar and Doppler radar, air pollution, climate and seasons. Laboratory work includes the analysis and understanding of weather maps, the measurement of meteorological variables as well as Internet activities.
Prerequisites: MAT-016 or MAT-120 or equivalent Math placement basis
Additional Fees: Course fee applies.

PHY-125. General Physics I - Lecture. 3 Credits.
LECT 45 hrs
This is the first course of a two-semester sequence in general physics. Topics include kinematics and dynamics of translational and rotational motion, conservation of energy, conservation of momentum, fluid statics and dynamics, and heat.
Prerequisites: MAT-123
Corequisites: PHY-126.

PHY-126. General Physics I Laboratory. 1 Credit.
LAB 45 hrs
This is the first course of a two-semester sequence in laboratory physics for students who are enrolled concurrently in General Physics I (PHY-125). Laboratory experiments demonstrate concepts covered in the accompanying lecture course, while introducing techniques of observation, data recording, data analysis and formal communication of experimental results.
Corequisites: PHY-125
Additional Fees: Course fee applies.

PHY-127. General Physics II - Lecture. 3 Credits.
LECT 45 hrs
This is the second course of a two-semester sequence in general physics. Topics include vibratory and wave motion, electricity, magnetism, optics and essentials of modern physics.
Prerequisites: PHY-125 and PHY-126
Corequisites: PHY-128.

PHY-128. General Physics II Laboratory. 1 Credit.
LAB 45 hrs
This is the second course of a two-semester sequence in laboratory physics for students who are enrolled concurrently in General Physics II (PHY-127). Experiments demonstrate concepts covered in the accompanying lecture course, while continuing to develop laboratory skills introduced in PHY-126.
Prerequisites: PHY-126 and PHY-125
Corequisites: PHY-127
Additional Fees: Course fee applies.

PHY-130. Engineering Physics I. 4 Credits.
LECT 60 hrs
This is the first course of a three-semester, calculus-based physics sequence. Topics include particle kinematics in one and in two dimensions, work and energy, impulse and momentum, rotational motion, kinematics and dynamics of rigid bodies and elements of thermodynamics.
Prerequisites: MAT-131
Corequisites: MAT-132.

PHY-133. Engineering Physics II. 4 Credits.
LECT 60 hrs
This is the second course of a three-semester, calculus-based physics sequence. Topics include simple harmonic motion, waves, electromagnetic theory and applications, Maxwell's equations in integral form.
Prerequisites: PHY-130 and MAT-132
Corequisites: MAT-230 and PHY-134.

PHY-134. Laboratory for Engineering Physics II. 1 Credit.
LAB 45 hrs
This is the first course of a two-semester laboratory sequence designed for students who are enrolled concurrently in the Engineering Physics lecture sequence. The course emphasizes fundamental physics principles through experimentation, principles of experiment design, instrumentation, techniques of observation, data recording, data analysis and formal communication of experimental results. Experiments study selected mechanical, electrical and magnetic phenomena.
Prerequisites: PHY-130
Corequisites: PHY-133
Additional Fees: Course fee applies.

PHY-232. Engineering Physics III. 3 Credits.
LECT 45 hrs
This is the final course of a three-semester, calculus-based physics sequence. Topics include geometric optics, Maxwell's equations in differential form, electromagnetic radiation and fundamentals of physical optics, the development of the Schroedinger Equation approach to quantum mechanics and selected applications of quantum theory to the understanding of atomic and nuclear structure.
Prerequisites: PHY-133 and MAT-230
Corequisites: PHY-233.

PHY-233. Laboratory for Engineering Physics III. 1 Credit.
LAB 45 hrs
This course is a continuation of the Engineering Physics laboratory sequence. The course continues to develop professional laboratory technique through experiments on selected topics in geometric optics, physical optics and modern physics.
Prerequisites: PHY-134
Corequisites: PHY-232
Additional Fees: Course fee applies.