

# Physics (PHY)

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**PHY 110. Conceptual Physics. 3.0 Credits.** Class-3.0. Clinical-0.0. Lab-0.0. Work-0.0

This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of motion, forces, energy, heat, electricity, magnetism, and the structure of matter and the universe. Upon completion, students should be able to describe examples and applications of the principles studied.

Corequisites: Take PHY 110A

**PHY 110A. Conceptual Physics Lab. 1.0 Credit.** Class-0.0. Clinical-0.0. Lab-2.0. Work-0.0

This course is a laboratory for PHY 110. Emphasis is placed on laboratory experiences that enhance materials presented in PHY 110. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in PHY 110.

Corequisites: Take PHY 110

**PHY 131. Physics-Mechanics. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-2.0. Work-0.0

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields. Credit by exam for PHS 151 can be obtained by request upon completion.

Prerequisites: Take one: MAT 121 or MAT 171, minimum grade of C

**PHY 132. Physics-Electricity & Magnetism. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-2.0. Work-0.0

This algebra/trigonometry-based course is a study of fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, waves, electricity, magnetism, circuits, transformers, motors, and generators. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

Prerequisites: Take PHY 131, minimum grade of C

**PHY 151. College Physics I. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-2.0. Work-0.0

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the comprehensive articulation agreement general education core requirement in natural sciences/Mathematics.

Prerequisites: Take MAT 171 or MAT 271, minimum grade of C

**PHY 152. College Physics II. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-2.0. Work-0.0

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Prerequisites: Take PHY 151, minimum grade of C

**PHY 251. General Physics I. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Prerequisites: Take MAT 271, minimum grade of C

Corequisites: Take MAT 272

**PHY 252. General Physics II. 4.0 Credits.** Class-3.0. Clinical-0.0. Lab-3.0. Work-0.0

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

Prerequisites: Take MAT 272 and PHY 251, minimum grade of C