

## Physics (PHYS)

### **PHYS 1100 Applied Physics Mechanics** **3 Credits**

*Prerequisite: MATH 1001 or MATH 1180 or higher.*

This course introduces engineering technology students to the concept of motion, force, momentum, and energy. It emphasizes problem-solving techniques and application of algebra and trigonometry to physical situations. Laboratory work focuses on the correct reading of measuring instruments, the proper handling of measurements in calculations, and testing of physical theories using measured data.

(4 contact hours: 2 lecture, 2 lab)

### **PHYS 1200 Applied Physics Heat and Thermodynamics** **3 Credits**

*Prerequisite: MATH 1001 or MATH 1080 or higher.*

This course introduces engineering technology students to concepts of the mechanics of solids, fluid mechanics, heat, thermodynamics, and properties of gases. It emphasizes problem-solving techniques and applications of algebra and trigonometry to physical situations. Laboratory work focuses on the correct reading of measuring instruments, the proper handling of measurements in calculations, and the testing of physical theories using measured data.

(4 contact hours: 2 lecture, 2 lab)

### **PHYS 1440 Physics for Allied Health** **3 Credits**

*Prerequisite: MATH 0850.*

This course introduces students to basic concepts in physics using basic mathematics and critical thinking. Topics include measurements, motion, forces, energy, gas laws, fluids and electrical safety. This course is designed for students entering the health technologies, particularly respiratory therapy.

(3 contact hours)

### **PHYS 1500 Astronomy** **(TM) 4 Credits**

This introductory astronomy course is intended for students interested in the natural sciences. It introduces the basic concepts of astronomy including the Earth's position in the universe, theories of solar system and universe creation, basic Newtonian physics, light, the solar system components, our sun, telescope use, and galaxies.

(4 contact hours)

### **PHYS 1550 Everyday Physics** **(TM) 3 Credits**

*Prerequisite: MATH 0850 or one year high school algebra.*

This course introduces students to basic concepts in physics as they relate to everyday objects and experiences. It uses some basic mathematics to develop topics. Topics include motion, forces, fluids, heat, electricity, and magnetism. This course is designed for non-science majors.

(3 contact hours)

### **PHYS 1610 General Physics I** **(TAG, TM) 5 Credits**

*Prerequisite: MATH 1650 or permission of instructor.*

This is the first course in a two-course introductory physics sequence designed for students not majoring in engineering, physics, or chemistry. Topics, which are algebra/trigonometry-based, include vectors, kinematics, Newton's laws, energy, linear and angular momentum, rotational dynamics, fluids and thermodynamics. Students will complete experiments related to these topics in lab.

(7 contact hours: 4 lecture, 3 lab)

### **PHYS 1620 General Physics II** **(TAG, TM) 5 Credits**

*Prerequisite: PHYS 1610 or permission of instructor.*

This course is a continuation of PHYS 1610 General Physics I. Topics, which are algebra/trigonometry based, include electrostatics, capacitance, DC series and parallel circuits, electromagnetism, simple AC circuits, mechanical waves, geometric and physical optics, and modern physics. Students will complete experiments related to these topics in lab.

(7 contact hours: 4 lecture, 3 lab)

### **PHYS 2100 Applied Physics III** **2 Credits**

*Prerequisite: MATH 1001 (can be taken concurrently) or MATH 1101 (can be taken concurrently).*

This course introduces engineering technology students to the concepts of electrical physics, electricity and magnetism, basic electric circuits, electric power, basic measuring devices, and generators. It emphasizes problem-solving techniques and applications of algebra and trigonometry to physical situations. Laboratory work focuses on the correct reading of measuring instruments, the proper handling of measurements in calculations, and the testing of physical theories using measured data.

(3 contact hours: 1 lecture, 2 lab)

**PHYS 2410 Science and Engineering Physics I****(TAG, TM) 5 Credits**

*Prerequisite: MATH 2500 or permission of instructor.*

This is the first course in a two-course physics sequence designed for engineering and science majors. Topics, which are calculus-based, include vectors, kinematics, Newton's laws, energy, linear and angular momentum, rotational dynamics, simple harmonic motion, and thermodynamics. Students will complete experiments related to these topics in lab.

(7 contact hours: 4 lecture, 3 lab)

**PHYS 2420 Science and Engineering Physics II****(TAG, TM) 5 Credits**

*Prerequisite: MATH 2600, PHYS 2410; or permission of instructor.*

This course is a continuation of PHYS 2410 Science and Engineering Physics I designed for engineering and science majors. Topics, which are calculus-based, include electrostatics, including Gauss's law and electric potential; capacitance; DC circuits; electromagnetism, including the Biot law, Ampere's law, Faraday's law and Lenz's law; mechanical waves; and geometrical and physical optics. Students will complete experiments related to these topics in lab.

(7 contact hours: 4 lecture, 3 lab)

**PHYS 2900 Special Topics in Physics****1-5 Credits**

These specialized courses provide in-depth examinations of physics topics not covered in detail elsewhere in the curriculum. The courses emphasize the process of scientific investigation as well as the study of specific topics.

(1-5 contact hours)