COURSES

PHYSICAL SCIENCE

PH101 Our Physical World (w/Lab) 5.0 UNITS
Our Physical World is a course for those of you who have little to no previous physical science experience. You will develop a conceptual understanding of the themes of physics such as Newton's Laws, momentum, energy, gravity, and the mechanics of orbital motion followed by fluids, heat, and electricity. You will also explore the nature of sound and light as well as atoms and the source of atomic energy. Ample laboratory activities are included right within the weekly lessons.

PH103 Earth Science w/Lab 5.0 UNITS
This course includes three hours of lecture and three hours of laboratory per week. The student explores basic principles of geology, meterology, and astronomy. The geology portion includes rocks and minerals, erosion processes, plate tectonics, earthquakes, and geologic time. The meterology portion includes oceans, Earth's atmosphere, atmosperic moisture, pressure, wind, fronts, and storms. The astronomy portion includes the solar system, stars, galaxies, cosmology, and relativity. The student practices these principles in the laboratory. This course is not intended for science majors.

PH176 Physical Science w/Lab 5.0 UNITS
This course is a basic introduction to physical science and is intended for students with little or no science background. It will present an integrated approach to topics in physics and chemistry which will include the scientific method, laws of motion, energy, heat and temperature, electricity and magnetism, light, atoms, molecules, chemical reactions, and the atomic nucleus. Laboratory exercises will illustrate the practical applications of the course content.

PH177 Introduction to Geology w/Lab 5.0 UNITS
Introduction to Geology is a course directed toward geology, science education, renewable energy, and those of you who are non-science majors looking to fulfill general education requirements. You will learn about a range of topics such as the origins and development of landscapes, earthquakes, volcanoes, sustainability, glaciers, water composition and processes, floods, groundwater flow, and the interaction between humans and the planet. You must purchase a lab kit which includes hands-on science labs, virtual learning tools, and a customized digital curriculum. This kit includes labs and exercises ranging from analyzing nine minerals and eighteen rocks to plate techtonics, mapping, and Earth surface processes.

PH180 Descriptive Astronomy w/Lab 4.0 UNITS
Descriptive Astronomy is a course directed toward those of you who are physical science majors and those of you who might be non-science majors looking to fulfill general education requirements. Astronomy is more than simply a mapping of stars and planets into outlines of gods and magical creatures. It is the scientific study of the contents of the entire Universe; stars, planets, comets, asteroids, galaxies, and space and time, as well as its history. In addition to learning the scientific concepts of astronomy, you will gain stargazing tips and resources you will need to see the glories that light up the heavens helping you become a "backyard astronomer". You must purchase an astronomy lab kit that supports the learning experience containing an interactive manual, instructional videos, hands-on labs, and other digital assets such as NASA images and videos.

PH207 College Physics I w/Lab 5.0 UNITS
Prerequisiste: MA185/Plane Trigonometry. General Physics I is the first of two introductory, algebra-based physics courses most often taken by those of you who major in biology, environmental science, or who intend to become a health professional. PH207 is similar to PH208 in most respects; the most important distinctions between them are the level of mathematics used and a few dfferences in content. Knowledge of algebra and trigonometry is essential. Key concepts include kinematics, Newton's Laws, conservation of momentum and energy, rotational motion, and waves. Approximately 25% of instructional time is spent in hands-on laboratory work which provides you with opportunities to demonstrate the foundational physics principles and to apply the science practices. The two-semester PH207/227 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course which meets the college's requirements for associate degree programs and meets transfer requirements of area colleges and universities, but does not normally fulfill the requirement of engineering programs.

PH208 Engineering Physics I w/Lab 5.0 UNITS
Prerequisite: MA220/Analytical Geometry & Calculus I or concurrent enrollment. Engineering Physics is the first of two introductory, calculus-based physics courses required for those of you majoring in physics, engineering, chemistry, and biochemistry. PH208 is similar to PH207 in most respects; the most important distinctions between them are the level of mathematics used and a few differences in content. Knowledge of calculus and trigonometry are essential. Key concepts include kinematics, Newton's Laws, conservation of momentum and energy, rotational motion, and waves. Approximately 25% of instructional time is spent in hands-on laboratory investigations which provide you with opportunities to demonstrate the foundational physics principles and to appoly the science practices. The two-semester PH208/228 sequence is designed to meet the requirements of area physics and engineering programs. This is a transfer course which mets the college's requirements for associate degree programs and meets transfer requirements of area colleges and universities.

PH227 General Physics II w/Lab 5.0 UNITS
Prerequisite: PH207/General Physics I. General Physics II is the second of two introductory, algebra-based physics courses most often taken by those of you who major in biology, environmental science, or who intend to become a health professional. PH227 is similar to PH228 in most respects; the most important distinctions between them are the level of mathematics used and a few differences in content. Knowledge of algebra and trigonometry are essential. Key concepts include introductory electricity, circuits, magnetism, waves, sound, and optics. Approximately 25% of instructional time is spent in hands-on laboratory work with an emphasis on inquiry-based investigations which provide you with opportunities to demonstrate the foundational physics principles and to apply the science practices. The two-semester PH207/227 sequence is designed to meet the requirements of area pre-professional programs. This is a transfer course which meets the college's requirements for associate degree programs and meets transfer requirements of area colleges and universities, but it does not normally fulfill the requirement of engineering programs.

PH228 Engineering Physics II w/Lab 5.0 UNITS
Prerequisite: PH208/Engineering Physics I. Engineering Physics II is the continuation of Engineering Physics I. PH228 is similar to PH227 in most respects; the most important distinctions between them are the level of mathematics used and a few differences in content. Knowledge of calculus and trigonometry are essential. Key concepts include introductory electricity, circuits, magnetism, waves, sound, and optics. Approximately 25% of instructional time is spent in hands-on laboratory work with an emphasis on inquiry-based investigations which provide you will opportunities to demonstrate the foundational physics principles and to apply the science practices. The two-semester PH208/228 sequence is designed to meet the requirements of area physics and engineering programs. This is a transfer course which meets the college's requirements for associate degree programs and meets transfer requirements of area colleges and universities.

PH249 Statics **3.0 UNITS**

Prerequisite: MA220/Analytical Geometry & Calculus I and PH208/Engineering Physics I. Statics is typically the first course in engineering problem-solving, and it provides the foundation for many future engineering courses. Taking this course before transferring will quicken your way to a B.S. in Engineering. Statics will introduce you to the mechanics of rigid bodies in static equilibrium where you will solve practical engineering problems involving the loads carried by structural components using vector analysis (both 2D and 3D) applied to rigid body systems and subsystems. Content includes static equilibrium, force and moment resultants, free body diagrams, distributed loads, trusses, frames and machines, internal forces, shear and moment diagrams, and friction.