

PES 299**Internship for Personal Trainers**

Prerequisite: Concurrent enrollment in PE 298 and consent of program coordinator

15 lab hrs per week: 3 hrs credit

This course is designed to provide real-world experience. Students are supervised in Fitness Center arranged by the program coordinator.

Physical Science**PHYS 111 (IAI: P9 900L)****Physical Science**

Prerequisite: Placement into ENG 099 or higher

3 lectures, 2 lab hrs per week: 4 hrs credit

This is an introductory lab course focusing on everyday experiences in physics, chemistry, and astronomy. Basic ideas of motion, matter, and energy are explored and related to astronomy and the importance of scientific discoveries to our society.

PHYS 112 (IAI: PI 905L)**Earth Science**

Prerequisite: Placement into ENG 099 or higher

3 lectures, 2 lab hrs per week: 4 hrs credit

Earth Science is an introductory lab course which surveys topics in geology, meteorology, and environmental science. The geology portion includes rocks, streams, glaciers, earthquakes, plate tectonics, volcanism, and mountain building. The meteorology portion focuses on the atmosphere, weather and climate. Human influence on the environment is emphasized.

Applied Physics**APHYS 100****Applied Physics**

Prerequisite: AMATH 100 or MATH 090

2 lectures per week: 2 hrs credit

This course surveys the physical principles of mechanics and is intended for students in apprentice certificate programs. Topics include metric system measurements, motion, Newton's laws, forces and equilibrium, simple machine elements, conservation laws, rotational motion, matter, and heat.

Physics**PHYSI 101 (IAI: PI 900L)****Conceptual Physics**

Prerequisite: Placement into ENG 099 or higher; placement into Math 090 or higher or completion of Math 085 with C or better.

3 lectures, 2 lab hrs per week: 4 hrs credit

This course is a one semester conceptual study of the major topics and concepts of physics. Topics include description of motion, Newton's laws of motion and universal gravitational law, the planets and Kepler's laws, energy, impulse and momentum, fluid mechanics, temperature, heat and laws of thermodynamics, electricity and magnetism, wave motion, sound waves and acoustic music, EM waves and optics, introduction to modern physics and cosmology, and solid-state physics.

PHYSI 120 (IAI: PI 900L)**College Physics I**

Prerequisite: MATH 151 or equivalent with a grade of C or better

3 lectures, 2 lab hrs per week: 4 hrs credit

This lab course is the first of a two-semester college algebra-based sequence designed to meet the needs of life and health science, liberal arts, and pre-professional students. Topics include vector algebra, Newton's laws of motion, description of motion and motion with constant acceleration, projectile motion, circular motion, work and conservation of energy, impulse and linear momentum, torque and angular momentum, fluids, elasticity and oscillations, waves and sound, and thermal physics and thermodynamics.

PHYSI 130**College Physics II**

Prerequisite: PHYSI 120 AND MATH 151 or equivalent with a grade of C or better

3 lectures, 2 lab hrs per week: 4 hrs credit

This lab course is the second of a two-semester college algebra-based sequence designed to meet the needs of life and health science, liberal arts, and pre-professional students. Topics include electric forces and fields, electric potential, capacitors and dielectrics, electric current and circuits, magnetic forces and fields, electromagnetic induction, alternating current and circuits, electromagnetic waves and optics, reflection and refraction of light, optical instruments, interference and diffraction, quantum and particle physics and relativity.

PHYSI 210 (IAI: P2 900L; PHY 91 I)**University Physics I**

Prerequisite: MATH 171 with a grade of C or better

3 lectures, 3 lab hrs per week: 4 hrs credit

University Physics I is the first course in a three-semester calculus-based sequence designed for pre-engineering, science, and mathematics majors. Topics include measurement and vectors, motion in one dimension, motion in two and three dimensions, Newton's laws of motion and applications of Newton's laws, work and kinetic energy, conservation of energy and momentum, rotation and angular momentum, gravity, static equilibrium and elasticity, fluid mechanics, and oscillations.

PHYSI 220 (IAI: PHY 912)

University Physics II

Prerequisite: PHYSI 210 and MATH 172 with a grade of C or better
3 lectures, 3 lab hrs per week: 4 hrs credit

University Physics II is the second course in a three-semester calculus-based sequence designed for pre-engineering, science, and mathematics majors. Topics include temperature and kinetic theory of gasses, heat and the 1st law of thermodynamics, the 2nd law of thermodynamics, thermal properties, the electric field and Gauss's law, electric potential, capacitors, electric current and direct-current (dc) circuits, magnetic fields, sources of the magnetic field, magnetic induction (Faraday's and Lenz's laws), alternating current (ac) circuits, and Maxwell's Equations.

PHYSI 230

University Physics III (IAI: PHY 914)

Prerequisite: PHYSI 220 and MATH 173 with a grade of C or better
3 lectures, 3 lab hrs per week: 4 hrs credit

University Physics III is the third course in a three-semester calculus-based sequence designed for pre-engineering, science, and physical science majors. Topics include mechanical waves and acoustic (sound and hearing, intensity, and Doppler effect), superposition and standing waves, Maxwell's Equation and EM waves, properties of light, optical images, interference and diffraction, modern physics (relativity, waves and particles, quantum mechanics, applications of Schrodinger Equation, atoms, molecules, solid state physics, nuclear physics, and elementary particle physics.

Plumbing, Pipefitter/ Steamfitter

PLUMB 101

Fundamentals of Plumbing

Prerequisite: None

2 lectures per week: 2 hrs credit

This course covers the specifications, applications and maintenance of pipes, fittings and valves; simple pipe calculations and template development; tools used in piping; proper valve installation and maintenance; and consideration of safe working pressures of pipes and valves are covered.

PLUMB 102

Drains, Wastes, and Vents

Prerequisite: None

2 lectures per week: 2 hrs credit

This course is designed to acquaint students with the proper materials for sewer, soil, vent, and waste pipes; principles of drainage flow and proper venting; traps and installation of unit sanitation equipment, and joints and fittings used on drainage systems.

PLUMB 103

Plumbing and Pipefitting Heating

Prerequisite: None

2 lectures per week: 2 hrs credit

This course covers the principles of steam and hydronic heating, various types of steam systems in use, and proper sizing and tapping of steam units. The study of hydronics includes one-pipe, two-pipe, high temperature and pressure systems, heat loss calculations, and the design of hydronic systems.

PLUMB 104

Plumbing and Pipefitting Code

Prerequisite: None

2 lectures per week: 2 hrs credit

This course covers current plumbing rules and regulations governing installation of plumbing systems, rules and regulations pertaining to joints, traps, cleanouts, water distribution, fixtures, and drainage.

Political Science

POLSC 101 (IAI: S5 903)

Principles of Political Science

Prerequisite: Placement into ENG 099 or higher

3 lectures per week: 3 hrs credit

This course provides an introduction to the core concepts of political science. Students explore the questions political scientists ask, the means by which they answer those questions, and the types of answers that have emerged in response to contemporary problems.

POLSC 140 (IAI: S5 900)

Introduction to U.S. Government and Politics

Prerequisite: Placement into ENG 099 or higher

3 lectures per week: 3 hrs credit

This course introduces students to the core concepts in political science that allow for a better understanding of the principles and organization of government and politics in the United States at the national, state and local levels.

POLSC 152 (IAI: S5 902)

U.S., State, and Local Government

Prerequisite: Placement into ENG 099 or higher

3 lectures per week: 3 hrs credit

This course describes the politics, function, and decision-making process of state and local governments in the United States. Special emphasis is placed on the historical development of Illinois government and political culture. Current issues facing state and local government agencies are also described and discussed.