



**KENTUCKY STATE
UNIVERSITY**

PHYSICS (PHY)

PHY 130: Physic and Society

A lecture and discussion course about science topics in the news. Topics include terrorism, energy, nuclear energy and weapons, space flight, and global warming. The course will look at the science behind the issues to see why we are where we are today and the science between possible solutions and non solutions.

Prerequisite: Testing out of all or successful completion of all developmental courses

Credit Hours: 3

Contact Hours: 3

PHY 207: Physics In Biological Sci I

A study of rigid/body mechanics, gravitation, friction, elasticity, harmonic motion, sound, fluid mechanics, heat transfer, and kinetic theory, with particular attention to living systems. Included in the course are computer modeling and simulation exercises. (Three hours of lecture, two hours of laboratory per week)

Prerequisite: MAT 120

Credit Hours: 4

Contact Hours: 5

PHY 208: Physics In Biological Sci II

Continuation of PHY 207, with study of electricity, magnetism, electrical circuits, light, optical systems, molecular and atomic structure, and radiation. Included in the course are computer modeling and simulation exercises. (Three hours of lecture, two hours of laboratory per week)

Prerequisite: PHY 207

Credit Hours: 4

Contact Hours: 5

PHY 211: General Physics I

Prerequisite(s): MAT 131, or consent of instructor. Study of the calculus/ based description of rigid/body mechanics, harmonic motion, sound, thermometry, and heat transfer. Included in the course are computer modeling, simulation and programming exercises. (Four hours of lecture, two hours of laboratory per week)

Credit Hours: 5

Contact Hours: 6

PHY 212: General Physics II

Continuation of PHY 211. Electricity, magnetism, electrical circuits and devices, optics, atomic and molecular physics, kinetic theory and radiation physics are studied. Included in the course are computer modeling, simulation and programming exercises. (Four hours of lecture, two hours of laboratory per week)

Prerequisite: PHY 211 or MAT 132

Credit Hours: 5

Contact Hours: 6

PHY 305: Elec Circuits/Electronics

Comprehensive electrical engineering principles for engineering and science majors. Topics include: Circuit analysis, power systems, electronic, digital logic, and instrumentation.

Prerequisite: PHY 212, MAT 132

Credit Hours: 3

Contact Hours: 3

PHY 311: Statics

The analysis of gravitational, elastic, and frictional forces in static rigid bodies and structures. Included in the course are computer modeling, simulation and programming exercises. (Three hours of lecture per week)

Prerequisite: PHY 211 and MAT 132

Credit Hours: 3

Contact Hours: 3

PHY 320: Engineering Thermodynamics

Equations of state, energy, enthalpy, and entropy of several fundamental physical systems; includes laws of thermodynamics applied to these systems and to common engines. Included in the course are computer modeling, simulation and programming exercises.

Prerequisite: PHY 211 and MAT 132

Credit Hours: 3

Contact Hours: 3

PHY 331: Introduction to Robotics

Introduction to robotics including the design, building, and programming simple robots. Included will be the basic science, engineering, and mathematics needed to design and build a simple robot. Students will also be introduced to the topic of project management. The course is a combination lecture/laboratory course that will meet five hours per week for three credit hours.

Credit Hours: 3

Contact Hours: 5

PHY 340: Engineering Electromagnetics

Corequisite: MAT 231. Electric and magnetic forces; fields and potentials accompanying charge and current in vacuum/dielectrics/conductors. Motion of charged particles, electromagnetic waves, electrical circuits and devices. Included in the course are computer modeling, simulation, data acquisition, virtual instrumentation and programming exercises.

Prerequisite: PHY 212

Credit Hours: 4

Contact Hours: 4

PHY 346: Advanced Physics Lab

A laboratory course where students perform advance experiments in physics. Topics include modern physics, optics, thermodynamics.

Prerequisite: PHY 211, 212

Credit Hours: 0

Contact Hours: 1

PHY 350: Electrical Circuits I

Fundamental laws and principles for linear circuits whose elements consist of passive and active components used in present day engineering practice. Determination of sinusoidal steady state responses using algebra of complex numbers (Lecture 3 hours; laboratory 3 hours)

Credit Hours: 4

Contact Hours: 5

PHY 361: Modern Physics

PHY 320 is recommended. Corequisite: MAT 232. Kinetic theory of gases; bonding forces (liquids/solids); statistical thermodynamics; thermal, electrical, and magnetic properties; photon and electron characteristics; atomic and nuclear structures and radiations. Included in the course are computer modeling, simulation, data acquisition, virtual instrumentation and programming exercises.

Prerequisite: PHY 212

Credit Hours: 3

Contact Hours: 3

PHY 381: Undergrad Res Physics/Engineer

This course is designed to give pre-engineering majors an opportunity to conduct independent research. A formal oral presentation of the findings of the student is required. May be repeated for credit.

Prerequisite: Junior standing in pre-engineering, mathematics, or chemistry and permission of the instructor

Credit Hours: 1-4

Contact Hours: 1-4

PHY 390: Special Topics in Physics

Selected topics for individuals or small groups of students. For Applied Mathematics, Pre-Engineering. The course will be the senior exit activity using topics from the Engineering in Training Exam. The course may be repeated twice for credit.

Prerequisite: Permission of instructor

Credit Hours: 3

Contact Hours: 3

PHY 399: Undergrad Teaching Exper

Students earn course credit for undergraduate teaching experience including but not limited to (1) assisting students during laboratory sessions, (2) helping to set up laboratories or lecture/lab quizzes, or (3) conducting PLTL-Excel type workshops for students. Course may be repeated for credit.

Prerequisite: Consent of instructor

Credit Hours: 1

Contact Hours: 1