

Physics (PHY)

PHY 121 Technical Physics

IAI – P1 900L

3 Hours

Prerequisites: None

4 hours weekly (2-2)

A general study of physics emphasizing applications to the technical fields and introducing the laws of motion and equilibrium and their relation to work, energy, and power. Also included are the principles of mechanics as they are applied to solids and fluids and the principles of heat, electricity, and magnetism.

PHY 155 College Physics I

IAI – P1 900L

5 Hours

Prerequisites: MAT 111 or 2 yrs. H. S. algebra and 1 yr. H. S. Trigonometry

6 hours weekly (4-2)

An introduction to physics. Classical mechanics and topics chosen from heat, sound, and materials science. This is the first in a non-calculus sequence for science, mathematics, pre-med, chemistry, and other majors requiring college physics.

PHY 156 College Physics II

5 Hours

Prerequisites: PHY 155

6 hours weekly (4-2)

A continuation of PHY 155. Electricity and magnetism along with topics selected from optics and modern physics; the final course of the non-calculus college physics sequence.

PHY 201 Statics

IAI – EGR 942

3 Hours

Prerequisites: MAT 131 with a grade of "C" or higher and concurrent enrollment in PHY 155 or PHY 205

3 hours weekly (3-0)

A rigorous course in statics for engineering, mathematics, physics, and other majors requiring a calculus-based mechanics course. Vector algebra is used to study particles, rigid bodies, and systems in equilibrium. A programmable calculator is strongly recommended for the course. This course is currently offered in the fall semester.

PHY 202 Dynamics

IAI – EGR 943

3 Hours

Prerequisites: PHY 201

3 hours weekly (3-0)

A continuation of PHY 201. Methods of elementary classical mechanics as applied to particles and rigid bodies in nonequilibrium situations. Vector algebra is used extensively and some vector calculus is introduced. A programmable calculator is strongly recommended for the course. This course is currently offered in the spring semester.

PHY 203 Mechanics of Solids

IAI – EGR 945

3 Hours

Prerequisites: PHY 201 with a minimum grade of “C” or higher

3 hours weekly (3-0)

This course is a continuation of Statics (PHY 201). It contains the following topics: stress and strain, mechanical properties of materials, the different types of loading – axial, torsion, bending, transverse shear and combined loadings, plane stress and plane strain transformations (Mohr’s Circle), deflection and design of beams and shafts and column buckling.

PHY 205 University Physics I

IAI – P2 900L, IAI – PHY 911

5 Hours

Prerequisites: MAT 131

6 hours weekly (4-2)

PHY 205 is the first course in a standard two-semester calculus-based physics sequence that is offered at virtually all universities and colleges for engineering majors. PHY 205 covers mechanics, heat, and thermodynamics. Physics background is strongly recommended.

PHY 206 University Physics II

IAI – PHY 912

5 Hours

Prerequisites: PHY 205, MAT 201, or consent of instructor

5 hours weekly (4-2)

PHY 206 is the second course in a standard two-semester calculus-based physics sequence that is offered at virtually all universities and colleges for engineering majors. PHY 206 covers electricity, magnetism, electromagnetic waves, optics, and an introduction to relativity and quantum physics.

PHY 214 Introduction to Circuit Analysis

IAI – EGR 931

3 Hours

Prerequisites: MAT 202 with a grade of “C” or higher and concurrent enrollment in PHY 206

3 hours weekly (3-0)

Topics include basic concepts of electrical current, voltage, power and energy; units; independent and dependent sources; resistance R; Ohm’s Law; Kirchhoff’s Laws; simple resistive circuits; delta-to-wye equivalents; resistive circuit analysis methods (node-voltage, mesh-currents, source transformations, Thevenin and Norton equivalents, and superposition); operational amplifiers; capacitance C and inductance L; transient responses of RC, RL and RLC circuits; sinusoidal steady state RLC circuits (analysis in time domain and frequency domain, and power).

PHY 224 Electric Circuit Analysis Laboratory

IAI – EGR 931L

1 Hour

Prerequisites: PHY 214 or concurrent enrollment

2 hours weekly (0-2)

The experiments in this laboratory course are designed to explore the theoretical and analytical material in PHY 214 (Introduction to Circuit Analysis). The objective of this course is to enhance students' understanding of analytical principles developed in PHY 214 by engaging them in real-time applications of these principles in the laboratory. In addition students will develop laboratory practice for testing and evaluating electrical circuits.