

Jacksonville State University
College of Arts and Sciences
Updated June 27, 2006

PHS 201 COLLEGE PHYSICS I

COURSE DESCRIPTION

This course is the first half of a two-semester sequence that introduces basic concepts in physics. Beginning with mechanics and motion, we develop methods for mathematically describing the way objects move and predicting their future movement. The course proceeds to study wave motion with springs, strings, water, sound, and light. This course does not count toward the Physics major or minor.

TEXT

College Physics, (6th ed.) by Serway and Faughn

COURSE OBJECTIVES

- To learn the concepts of motion, mechanics, energy, matter, sound and heat.
- To learn the interrelationships between the concepts.
- To learn the fundamental mathematical basis of science.

COURSE OUTLINE

Topic	Reading
Introduction	Ch. 1
Velocity Acceleration	Ch. 2.1 – 2.2 Ch. 2.3 – 2.4
Constant Acceleration Free Fall Vectors	Ch. 2.5 – 2.6 Ch. 2.6 – 2.7 Ch. 3.1 – 3.3
Projectile Motion More Projectile Motion Force and Mass	Ch. 3.4 – 3.5 Ch. 3.5 Ch. 4.1 – 4.3
Newton Second Law Newton's Third Law Exam 1	Ch. 4.5 Ch. 4.4 Ch. 1 – 3
Friction Forces Work and Kinetic Energy	Ch. 4.6 Ch. 4.6 Ch. 5.1 – 5.3
Potential Energy Conservation of Energy Heat as Energy	Ch. 5.4 – 5.5 Ch. 5.6 – 5.7 Ch. 11.1 – 11.2
Power Momentum and Impulse Conservation of Momentum	Ch. 11.3, 5.8 Ch. 6.1 – 6.2 Ch. 6.3
Momentum and Energy Angular Motion Exam 2	Ch. 7.1 – 7.3 Ch. 4 – 6, 11.1 – 11.3
Centripetal Acceleration More Rotational Motion Gravitation; Torque	Ch. 7.4 – 7.6 Ch. 7.6 Ch. 7.7; Ch. 8.1
Equilibrium	Ch. 8.2 – 8.4

Rotational Inertia	Ch. 8.5
Rotational KE and Angular Momentum	Ch. 8.6 – 8.7
Springs	Ch. 13.1 – 13.2
Harmonic Motion	Ch. 13.3 – 13.4
Exam 3	Ch. 7-8
More Harmonic Motion	Ch. 13.4 – 13.5
Waves	Ch. 13.6, 13.8 – 13.10
More Waves	Ch. 13.11 – 13.12
Sound	Ch. 14.1, 14.7, 14.11
Standing Waves	Ch. 14.8, 14.10
Comprehensive Final Exam	

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PHS 211L ELEMENTARY LAB TECHNIQUES I

COURSE DESCRIPTION

This laboratory accompanies your physics course. It is designed to give you hands-on experiences with the topics discussed in lecture. In groups, you will conduct experiments and analyze data to gain greater insight into the concepts of physics.

TEXT

Physics Lab I Manual, by Dr. Laura Weinkauf

COURSE OBJECTIVES

To learn the methods of science and scientific inquiry.
To learn the mathematical and statistical basis of the concepts.
To learn real-world applications of the concepts.
To learn and apply laboratory safety procedures.

COURSE OUTLINE

Lab 1: Introductory Matters
Lab 2: Motion Graphs
Lab 3: Vectors
Lab 4: Projectile Motion
Lab 5: Newton's Second Law
Lab 6: Inclined Plane
Lab 7: Energy
Lab 8: Collisions
Lab 9: Centripetal Acceleration
Lab 10: Simple Harmonic Motion
Lab 11: Standing Waves