

FD '00
PM

PHYSICS 151 - FALL 2000

Title: College Physics I

Lecture: MWF 9:00 - 9:50

Text: Physics, 2nd ed., Hecht

Instructor: Dr. Jack F. McMillan

Office Hours: Thurs. 11:00 - 12:00 Rm. 24

Phone: 735-4813

Objectives:

Physics 151 has several objectives. First, to introduce you to basic concepts of mechanics, heat and thermodynamics, energy, and wave motion. As physics is a basic science, literacy in it is essential in your future endeavors. Secondly the course will develop the ability to solve problems and extract information from the text. Quantitative skills will be sharpened through problem solving. The course will enable you to understand natural laws and give you an appreciation of how things work. Lastly, the course provides the foundation for understanding some of the complex technology vital to our society.

Content of Course:

Chapter	Key topics, concepts
1.	scientific notation, units, significant figures, graphs
2.	speed, velocity, vector notation, vector addition
3.	acceleration, two-dimensional motion
4.	Newton's laws of motion
5.	centripetal force, universal law of gravitation
6.	work, energy, kinetic energy, potential energy
7.	momentum, elastic and inelastic collisions
8.	moment of inertia, rotational kinetic energy, angular momentum, torque
9.	density, pressure, Bernoulli equation, continuity equation
10.	Hooke's law, stress, strain, elastic moduli, frequency of oscillation
11.	transverse / longitudinal waves, decibel scale, standing waves
12.	temperature scales, thermal expansion, gas laws
13.	heat, specific heat, phase transitions, conduction
14.	laws of thermodynamics, engines and cyclic processes

Homework:

Homework assignments are given for each chapter. These assignments are not graded, but are checked to ascertain if you are understanding the concepts. Solutions will then be available to allow you to check on the correct solution techniques.

Quizzes:

A quiz will be given at the beginning of each chapter to ensure that you read the material before classtime. Each quiz will consist of 4 multiple choice questions and will graded on a 0 - 10 point scale.

Tests:

There will be 3 in-class tests, each worth 100 points, and the final exam (150 points). All missed exams must be taken or a grade of zero will be entered for that exam. However, only medical emergencies (with doctor's note) or death/severe illness in immediate family will be accepted as reasons to miss an exam.

Grades:

Your grade will be determined by the quizzes and exams. The quizzes will count for 60% and the exams for 40%. To determine your final grade, use the formula:

$$\text{grade} = (\text{sum of quizzes}) \times 60 / 140 + (\text{sum of tests}) \times 40 / 450$$

The letter grade is then found by

$$90 - 100 = A$$

$$80 - 89 = B$$

$$70 - 79 = C$$

$$60 - 69 = D$$

$$00 - 59 = F^*$$

* assigned on discretion of instructor