This document may be revised.

PHY 201 (lecture section 002)
College Physics I
Dillard University - Fall 2004

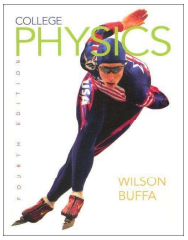
Meeting Times:

STERN 315 M W F 9:00a -- 9:50a	PHY 201 002	
(**STERN 123 M 4:00p – 5:50p**	PHY 201 901 L [with Dr. Darwish]	(You must be registered for one laboratory section.)
123 T 12:30p – 2:20p	PHY 201 902 L [with Dr. Foster]	
123 R 8:00a – 9:50p	PHY 201 903 L [with Dr. Foster])	

Instructor: **Rob Salgado** **Assistant Professor of Physics** Office: **Stern 307A** Voice: **(504)-816-4510**	E-mail: **rsalgado@dillard.edu** Instant-Messengers: AOL, MSN, Yahoo: **dillardphysics** (do *not* email here)	Office hours: **-to be announced**

a comment on PHY 201 002:

Dr. Foster (who teaches section 001) and I will try to coordinate the content and expectations of the two lecture sections. However, the two lecture sections are independent of each other.

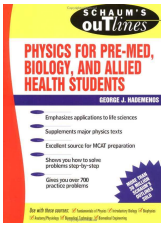


Catalog Description:

PHY 201 Elementary College Physics I. (3 credits for Lecture + 1 credit for Lab)
Treatment of physical principles (for all non-technical and life science majors) of kinematics, dynamics, heat and fluid mechanics, waves and sound. Classes meet three hours per week for lecture and two hours per week for laboratory.
[Prerequisite: Mathematics 122 or proficiency.]

Required Textbooks:

"College Physics (4th edition)" by Jerry Wilson and Anthony Buffa
(published by Prentice-Hall: ISBN: 0-13-082444-5 (4th edition))



"Schaum's Outline of Physics for Biology and Pre-Med, Biology, and Allied Health Students" by George J. Hademenos
(published by McGraw-Hill: ISBN 0-07-025474-5)

Electronic Materials:

I will maintain a website (for now: **`http://physics.syr.edu/~salgado/201/`**) that lists the assigned problems and solutions. I will also try to make available the whiteboard/PowerPoint notes and any computer source code (e.g., Python, Maple) that I use for simulations or computations.

Course Goals:

A. To introduce basic concepts in physics, drawing examples from everyday phenomena.
B. To develop physical intuition, mathematical reasoning, and problem solving skills.
C. To introduce students to research techniques [including laboratory experience and computer-based data acquisition and analysis].
D. To help prepare students planning to take standardized exams.

Course Requirements:

Come to class **ON TIME**. Attendance is **REQUIRED.**

"The University recognizes that a student may miss a class for legitimate reasons. In such cases these absences are excusable; however, the student must complete the Student Absence Form." An absence may be excused within 2 weeks of the absence using a form issued only by the Division of the Natural Sciences.

"A professor may drop a student with 3 or more unexcused absences from a course." (2003-2005 University Catalog, page 15)

Note that your attendance is recorded on the official midterm and final grade sheets.

"Academic dishonesty will not be tolerated." (2003-2005 University Catalog, page 15)

Come to class PREPARED and EQUIPPED, having read or written any assignments.

Treat each other with RESPECT. Limit all discussions to the PHYSICS topic under discussion.

Turn OFF all phones, pagers, radios, and other disruptive devices.

Course Procedure:

Three 50-minute lecture meetings and one 110-minute lab meeting per week.

Exams and Quizzes:

In order to encourage you to keep up with the work YOU must do to learn the subject matter, QUIZZES may be given at any time, without warning. [No makeups or extensions. This will be strictly enforced. Be on time.] After every two or three chapters, we will have an announced EXAM on these chapters. There is a cumulative one-hour MIDTERM and a cumulative two-hour FINAL.

There are **no** makeup exams or quizzes. There are **no** exceptions. If you are absent for an exam or quiz, you have one week to obtain a Division excuse form. ***Only if*** that excuse is valid, **your final exam will carry the weight of your missed exam or quiz**.

Otherwise, you will get no credit for the missed exam or quiz.

Homework:

Homework will be assigned periodically but will not be collected. We will discuss some of the homework in class. You are encouraged to consult the posted homework solutions and visit office hours to discuss the rest of the homework.

Exam and quiz problems are generally based on homework problems, textbook problems, and textbook examples.

Most of the learning you do in this course is done by your doing homework problems outside of class!
You are encouraged to work on the homework with other students.
However, be sure that you can do the homework problems *by yourself* since you'll be working on quizzes and exams *by yourself*.
If you need help with your homework, please visit me (with your textbook and your notebook and with proof that you have tried the problems) during Office Hours… the sooner the better.

Grades (for the lecture portion), roughly weighted as follows:
25% QUIZZES (FORMAT: multiple-choice questions, a short problem, and vocabulary definitions)
25% REGULAR EXAMS (FORMAT: many conceptual and computational multiple-choice questions, two or three short problems)
20% MIDTERM EXAM (FORMAT: like a regular exam but cumulative)
30% FINAL EXAM (FORMAT: like two regular exams but cumulative)
Approximately A≥88%, B≥76%, C≥64%, D≥50%, F<50%. This class is not graded on a curve.
Borderline cases (between two letter grades): If your exams show an upward trend, your grade may be nudged upwards.

Sequence of PHY 201 topics and the learning objectives: (Homework will be assigned during each chapter.)

Ch 1 Units and Problem Solving
Distinguish "physics" from other disciplines. Discuss the importance of mathematics and units of measurement.

Ch 2 Kinematics
Ch 3 Motion in Two Dimensions
Distinguish velocity, acceleration, speed, and average velocity. Setup, algebraically- and geometrically-analyze, and physically-interpret simple constant-acceleration kinematics problems.

Ch 4 Force and Motion
Define and explain Newton's Laws of Motion. Distinguish mass from weight. Setup (with Free-Body Diagrams), algebraically- and geometrically-analyze, and physically-interpret simple statics and dynamics problems.

Ch 5 Work and Energy
Ch 6 Momentum and Collisions
Distinguish force, energy, work, power, momentum, impulse. Setup, analyze, and interpret simple problems involving energy-conservation and momentum-conservation.

Ch 7 Circular Motion and Gravitation
Setup, analyze, and interpret simple circular-motion problems. Define and explain planetary motion using Kepler's Laws of Planetary Motion and Newton's Law of Universal Gravitation.

Ch 8 Rotational Motion and Equilibrium
Distinguish rotational from translational kinematics and dynamics. Setup, analyze, and interpret rigid-body problems.

Ch 9 Solids and Fluids
Distinguish solids from fluids. Define and explain the concept of fluid pressure and Archimedes' Principle.

Ch 10 Temperature
Distinguish temperature from heat. Define and explain the Ideal Gas Law. Define and explain the concept of Absolute Zero.

Ch 11 Heat
Setup, analyze, and interpret problems involving specific heat and latent heat.
Distinguish convection, conduction, and radiation.

Ch 12 Thermodynamics
Define and explain the Laws of Thermodynamics.

Some advice:
Physics is a **challenging** subject that requires your dedicated attention, but rewards you with skills that you can apply in ***any*** discipline!
Physics is **cumulative**: For example, understanding Ch 8 requires you understand all of the chapters before it.
You must not fall behind! If you find yourself falling behind, you must get some help. Visit the LEARNING CENTER in Stern 301!
Physics is written and spoken in a **Mathematical** language.
At this stage, Algebra, Trig, Geometry and Pre-Calculus are more important than Calculus. *Review your basic mathematics NOW!*
Physics is about "understanding **relationships** between physical quantities", which we uncover by experiment and by mathematical reasoning.
Physics is **NOT about formulas** and merely plugging-in numbers.
Formulas are often only "special cases of expressions of those relationships".
"Knowing a formula without knowing when it applies" is generally useless.
The act of "plugging-in numbers" measures your ability to do Arithmetic or use a calculator.
The resulting number is only useful when you interpret it physically. *"The right number with wrong physics" is just plain wrong.*
YOU CAN understand and succeed in Physics only if YOU put in the required work.
Just attending lectures and labs is not enough. Just taking good notes is not enough.
Just reading the textbook is not enough. Just memorizing formulas and definitions is not enough.
Just doing the homework is not enough. Just reading the solutions is not enough.
There are no shortcuts. ***YOU HAVE TO DO IT ALL.***