

PHYS 201 COURSE SYLLABUS Fall 2010

Course Director: Prof. Roberto Ramos (rcr32@drexel.edu, Disque-624)

Textbooks: UNIVERSITY PHYSICS: by H. D. Young and R. A. Freedman, 12th ed.
Pearson/Addison Wesley, **with required access to Mastering Physics Online**
PHYSICS Lab Manual by R. Ramos and S. Tyagi, Pearson/Addison Wesley.

Course Website: http://www.physics.drexel.edu/~lowtemp/phys201_fall2010/

PHYS 201 is a calculus-based, introductory physics course on Waves and Modern Physics. This course will take you on a journey from understanding periodic motion and wave properties of both matter and light, to modern and contemporary physics, where energy is quantized and moving objects can be represented as a wave of probability amplitudes. You will find yourself on unfamiliar ground and your conventional understanding of matter will often be wrong. Hence, it is important to attend lectures, read the textbook, and do the homework early. After all, **no student can claim to be a modern engineer and scientist without a solid background in modern physics and quantum mechanics.**

1. The course week starts with the Monday lecture. (1:00 – 1:50pm, Disque-103, Sec. A; 2:00-2:50 pm, Disque 108, Sec. B)

2. Homework Assignments via MasteringPhysics.com. All homework assignments are to be completed online (MasteringPhysics.com). The **access code is required** for PHYS 201 and is bundled with the textbook package available at the Drexel bookstore.

IMPORTANT If you procured a used textbook without the access code, you must obtain a MasteringPhysics access code (around \$50.00) online. **You can also purchase access codes at www.mypearsonstore.com.** Otherwise, you will be unable to submit homework. Lack of an access code is no excuse for not submitting homework on time. The course ID's for Mastering Physics are given below:

Section A: **MPRAMOS14875**

Section B: **MPRAMOS13223**

Homework will be given out on Fridays and are due two weeks later. If you have problems with Masteringphysics, contact the Student Help Hotline 1-877-672-6877 M-F 12-8pm EST. Click on the “support” tab on the main page of Masteringphysics.com and this phone number as well as Chat Options (for Registration problems) become available.

3. Lab Experiments and the Lab Manual. The laboratory component of PHYS 201 is required and you cannot pass the course without it. Labs begin on Week 2 for even-numbered lab sections and on Week 3 for odd-numbered lab sections, and are scheduled every other week. The Physics Laboratory Manual (Ramos and Tyagi) is required and is part of the textbook bundle available at the Drexel Bookstore. If you do not have this bundle and had been using the old Serway textbook or had procured a used textbook outside of the Drexel bookstore, please look for instructions in the course website by the end of Week 1.

4. Recitation. Participation at recitation sessions is required and will be checked. You must bring your scientific calculator! Prior to coming to recitation, you must attempt to solve the problems scheduled for that particular meeting (See Schedule of Lectures and Recitation Problems below). **Beginning Week 2, at the beginning of recitation, you must show your**

written solutions – to be checked but not graded by your recitation TA. You will then be grouped and asked to discuss your solutions within that group.

Problem Solving: Ability to solve problems is critical to becoming an engineer or scientist. This means exercising critical thinking and not solving problems mindlessly and hiding behind the math. I have not met any scientist or engineer who will not agree. As such, the best strategy in homework and recitation is to first understand the problem, then independently attempt solving it and then discussing/presenting your solutions to your peers. You are encouraged to work and collaborate in groups – find or make a friend to work with, except during exams. Cheating is not tolerated and can lead to suspension or expulsion.

5. Exams. There will be **two midterms and one final.** There are **no make-up exams.** If you miss an exam, for whatever reason, you must immediately contact your instructor.

6. Grading Scheme:	Two Quizzes	30%
	Homework	14%
	Four LABS	16%
	Lecture Attendance	5%
	Recitation Participation	5%
	Final Exam	30%
	Total	100%

7. Schedule of Lectures and Recitation Exercises/Problems

Week-1 (9/20/10).

Lecture: Chapter 13: secs.1-6

Periodic Motion

Recitation Problems: CH-13 : 4, 11, 13, 19, 31, 65

Week-2 (9/27/10)

Lecture: Chapter 15: secs. 1- 8

Mechanical Waves

Recitation Problems: CH-15 : 8, 16, 21, 39, 45, 29, 52

Week-3 (10/04/10)

Lecture: Chapter 32 : secs. 1-6

Electromagnetic Waves

Recitation Problems :CH-32 : 8, 13, 16, 26, 39, 49, 45

Week-4 (10/11/10)

11/11/2010 is Columbus Day (University Holiday)

Lecture: Chapter 33: secs.1-6 11/12/2010 is Midterm 1

The Nature of Light

Recitation Problems : CH-33 : 3, 47, 19, 22, 59 , 24, 36

Week-5 (10/18/10)

Lecture: : Chapter 33: secs.1-6 ; Chapter 35: secs. 1-5

The Nature of Light/Interference

Recitation Problems : CH-33 : 25, 33, **CH-35:** 4, 8, 14, 28, 33

Week-6 (10/25/10) 10/29/10 is the LAST DAY to Withdraw from the Course

Lecture: Chapter 36: secs. 1-7

Interference/Diffraction

Recitation Problems: CH-35: 58 **CH-36:** 1, 6, 9, 13, 26, 29

Week-7 (11/01/10)

Lecture: Chapter 37: secs. 1-5

Diffraction Gratings/Special Relativity

Recitation Problems :CH-36 : 20, 29 **CH-37:** 1, 2, 4, 13, 15, 23

Week-8 (11/08/10)

Lecture: Chapter 38: secs. 1-9

Photons, Electrons and Atoms

Recitation Problems : CH-38: 3, 12, 13, 15, 39, 37

Week-9 (11/15/10)

Lecture: Chapter 38: secs 1-9; Chapter 39: secs. 1-5

Photons, Electrons and Atoms/Wave Nature of Particles

Recitation Problems : CH-38: 24, 25, 43 **CH-39:** 5, 9, 24, 38, 48, 35, 70

Week-10 (11/22/10)

11/24/10 (Wed) – Thanksgiving Holiday begins

Lecture: Chapter 39: secs. 1-5

Wave Nature of Particles

Recitation Problems : CH-39: 24, 38, 48, 35, 70

Week-11 (11/29/10)

12/01/10 (Wed) – Last PHYS 201 lecture

Lecture: Chapter 39: secs. 1-5

Quantum Mechanics

Recitation Problems : CH-40: 5, 39, 22, 12

Note: Changes may be made to the Syllabus whenever considered appropriate.