

SYLLABUS FOR PHY 241: University Physics III

Spring 2013

INSTRUCTOR: Dr. Gary B. Adams

OFFICE: PSH-551 PHONE: 727-6511 (Physics Desk: 965-3561)

E-MAIL: gary.adams@asu.edu

WEB PAGE: <http://www.public.asu.edu/~gbadams>

CLASSES:

OFFICE HOURS: (Tentative)

PHY 101	9:00-10:15	TTH	PSF-101	2:30- 4:30	MW	PSH-551
PHY 101	10:30-11:45	TTH	PSF-101	2:00- 3:00	TTH	PSH-551 T and PSH-352 TH
PHY 241	1:30- 2:20	MWF	PSF-101	2:30- 3:30	F	PSH-551

NOTE: All Office Hours are open to all of my students.

I. INTRODUCTION

PHY 241 is the third part of a four-semester sequence in introductory physics offered to engineering and other science and pre-professional majors who have the appropriate background in mathematics. The prerequisite for PHY 241 is PHY 131. Differential and integral calculus will be used regularly throughout the course.

PHY 241 covers the subjects of thermodynamics and kinetic theory, physical and wave optics, photons and matter waves, and concludes with an introduction to solid state physics and relativity. A detailed list of topics can be found on the lecture schedule which accompanies this syllabus.

The recommended textbook is University Physics, by Young and Freedman, Thirteenth Edition, (Addison Wesley, 2012), but many other choices are possible. See our Textbook Options webpage for more information. Reading assignments are keyed to this textbook. At the bookstore, the textbook should come packaged with Mastering Physics. Mastering Physics is required. If you buy a used textbook, then you must buy Mastering Physics separately at the bookstore or online at the Mastering Physics (MP) web site. Also required is a Turning Point transmitter (available at the bookstore) or Turning Point ResponseWare software.

II. COURSE FORMAT AND POLICIES

A. General

The course during this semester commences on MON Jan. 7 and concludes on MON Apr. 29. A schedule of lectures and examinations is distributed with this syllabus. Homework assignments will be posted only on your MP homepage.

Lectures are on MWF from 1:30-2:20 in PSF-101. Students are responsible for any information imparted to the class during lectures. Minimal preparation for lecture is to do the reading assignment, which is available on our class webpage. To more fully prepare for lecture, take an advance look at the homework problems which will be assigned for that lecture. A small number of Multiple Choice questions will be asked during each lecture. These may cover the reading assignment, or may check your comprehension of some topic that I have just covered in lecture. You are expected to record your response to these questions using your Turning Point transmitter. You must register your Turning Point transmitter in order for your responses to be graded. A guide to Turning Point, including instructions for registering your transmitter, can be found at the course web site. **YOU MUST USE ONLY THE TRANSMITTER THAT YOU REGISTER AND NO OTHER.** Use of another student's transmitter is a case of academic dishonesty, just exactly like cheating on a test. Any and all students involved in any such incidents will automatically receive an E for the course, and may be referred to the Dean for further sanctions.

Recitation sections occur weekly as scheduled, beginning at 12:00 PM WED Jan. 9; the last recitation meetings are on FRI Apr. 26. This results in 15 recitation meetings for each section. The purpose of recitation is to give the student an opportunity in a small class environment to learn essential concepts and problem-solving strategies. Each recitation period will open with a graded group exercise.

Help-Study Sessions are for the students' benefit, but participation is optional. Beginning TUE Jan. 22, the Physics Learning Center (PSF-186) will be staffed by volunteer faculty and Teaching Assistants several hours each day between 9:00 and 4:50. Teaching Assistants associated with this course, and your instructor, will keep some of their office hours in the Learning Center.

An **e-mail** account is available for every student enrolled at ASU. Instructions for obtaining an e-mail account can be obtained at the ASU Computer Commons. Important class information will be disseminated regularly through e-mail. The student will be responsible for receiving it. If you currently have a working ASU email account, then you need do nothing. If you have not recently used your ASU email account, then double-check to make sure that your email is properly being redirected to your favorite email address.

B. Turning Point

You will use your Turning Point transmitter to answer Multiple Choice questions during the lecture period. Your answers will be graded, and your Turning Point grade will count 5% of your overall class grade. For the first week, Turning Point questions will be considered practice questions, as you learn to use your Turning Point transmitters. Beginning MON Jan. 14, Turning Point questions will be graded. You are always encouraged to discuss Turning Point questions with your neighbors in lecture, but when answering, always think for yourself. A correct answer will be counted as 3 points, an incorrect answer will be counted as 2 points, and no answer will be counted as zero points; so the penalty for an incorrect answer is very small. There are expected to be about 100 Turning Point questions over the course of the semester, so the maximum possible Turning Point score will be about 300 points. The final Turning Point grade will be determined as a percentage out of 270 points (or ~90% of all possible points should the number of possible TP points change.) Your maximum Turning Point grade is 100%, i.e. more than 270 points will not be counted as extra credit. Since only 90% of all possible TP points are required for a perfect Turning Point score, no opportunity is provided to make up missed Turning Point questions. USING SOMEONE ELSE'S TRANSMITTER, OR ALLOWING SOMEONE TO USE YOUR TRANSMITTER, WILL RESULT IN AN AUTOMATIC FAILING GRADE FOR THE COURSE. It is your responsibility to make sure that your transmitter is in working order, and that your response is recorded. See the Turning Point page on our class web site for tips.

C. Homework

A list of assigned homework problems will be made available on your MP homepage as the semester proceeds. There will be one assignment for each lecture. A guide to using MP can be found on the course web site. Due dates for MP homeworks are available on the Assignment List at the MP web site. In general, assignments made on MON are due by 11:59 PM the following MON, assignments made on WED are due by 11:59 PM the following TUE, and assignments made on FRI are due by 11:59 PM the following THU, but the official due dates are always the ones found at your MP site. Assignments submitted after the due hour has passed will receive 20% credit (credit goes from 100% to 20% gradually during the first hour after the due date).

For working on our MP homework, you are encouraged to work on your own as

much as possible. You are of course allowed to work in study groups and to get help from myself, your TA, tutoring centers, etc.; but, if you get too much help on an assignment, then you can expect to have difficulties with the tests and quizzes. As much as possible, try to do the assignments on your own, using the provided hints and feedback.

A total of approximately 1900 homework points will be possible. The final homework grade will be determined as a percentage of 1710 points (or ~90% of all possible points should the number of total HW points change.) Your maximum homework grade is 100%, i.e. more than 1710 points will not be counted as extra credit. 760 HOMEWORK POINTS ARE REQUIRED FOR A PASSING GRADE IN THE COURSE.

D. Graded Group Exercises

Almost every recitation (including the first) will begin with a graded group exercise. There will be 15 recitations over the course of the semester; there will be approximately 15 graded group exercises worth 10 points each. Your three lowest graded group exercise score will be dropped. Since 20% of the scores will be dropped THERE ARE NO MAKE-UP GROUP EXERCISES FOR ANY REASON. Exception: once (AND ONLY ONCE) during the semester, you may arrange with your TA to attend an alternate 241 recitation; a list of 241 recitations for our class can be found on our course website. Group exercises will be distributed at the beginning of recitation. Your TA will assign groups of three or four students, and groups will be rearranged once or twice as the semester proceeds. Exercises will be the same for all groups in a given recitation. Exercises will be solved as a group, but each student will write up his or her own solution; solutions will be graded individually.

E. Quizzes

There will be three quizzes; for the quiz dates see the lecture schedule which accompanies this syllabus. Quizzes will be given in the final 15-20 minutes of the lecture period on the scheduled dates. Quizzes will consist of 2-3 problems similar to problems already covered in the MP homework. Your two best quiz scores will count as 15% of your overall grade. THERE WILL BE NO MAKE-UP QUIZZES for any reason. If you miss one of the three quizzes FOR ANY REASON, that quiz automatically becomes your dropped quiz; if you take all three quizzes, then your lowest quiz score will automatically be dropped.

F. Examinations

The three tests will cover material as indicated in the lecture schedule. Each test will consist of 4-6 problems and 6-8 multiple choice (MC) questions. The MC questions are either conceptual or require a briefer calculation than in the problems. The problems may be similar to homework, but they may also represent applications of principles in entirely different circumstances. Your two best test scores will count as 40% of your overall grade. The final exam will consist of 30-40 MC questions; it will be comprehensive, and it will count as 20% of your overall grade for the class. For the test dates, see the lecture schedule. All three tests, as well as the final exam, will be given in PSF-101, with assigned seating.

Examinations are governed by the following policies:

- * THERE WILL BE NO MAKE-UP TESTS for any reason. If you miss one of the three tests FOR ANY REASON, that test automatically becomes your dropped test.
- * In figuring your test average, the lowest of the three test scores will automatically be dropped.
- * Academic dishonesty on an examination will result automatically in a failing grade for the course and referral to the Dean for further sanctions. Cheating in any form will not be tolerated!
- * The use of hand calculators is permitted. However, YOUR CALCULATOR MAY NOT CONTAIN STORED PHYSICS EQUATIONS.
- * Test paper (including scratch paper) will be provided. Bring only your pencils and calculators.
- * An equation sheet will be provided with your tests and your quizzes; the current equation sheet will be available on our class webpage.
- * Partial credit will be given. Arithmetical errors will be treated charitably, but for answers that do not make physical sense (wrong dimensions, deviation by several orders of magnitude, etc.) no credit will be awarded. In general, you must get the PHYSICS right to receive any partial credit. Wrong physics = no credit.
- * In the event of a fire alarm occurring during an examination, students will be asked to close their examination booklets, gather their belongings and leave the room as expeditiously as possible, leaving their examination booklets on the tables where they were working. The booklets will be gathered and graded as they are. Unless the alarm proves to represent a bona fide emergency, there will be no make-up examination.

* If a student believes there to have been an error in grading his or her test, the complaint should be PUT IN WRITING, stapled to the relevant page of the test, and handed to the course instructor. The problem will be regraded by the individual who graded it originally. If the student is not satisfied with the grader's response, he or she may appeal to the course instructor. In this event, the instructor reserves the prerogative to regrade the entire examination. Simple errors, such as point addition, can be corrected by contacting the student's recitation section instructor.

G. Final Grades.

The final course grades will be determined with the following weights:

Turning Point (total points out of 270): 5%

Homework (total points out of 1710): 14%

Graded Group Exercises (drop 3): 6%

Quizzes (drop 1): 15%

Tests (best 2 of 3): 40%

Final Examination: 20%

A MINIMUM OF 760 HOMEWORK POINTS IS REQUIRED FOR A PASSING GRADE IN THE COURSE.

The scale for final letter grades will ultimately be determined by the overall class performance. However, any student who earns 90% of all possible points can expect to receive an A. The plus-minus grading system will be used. For information on HOW TO FIGURE YOUR FINAL GRADE please see the course web page.

H. Withdrawal

Withdrawal policies are established by the University (see the Spring 2013 General Catalog). The deadline for course withdrawal is Mar. 31. Other deadlines are also given in the Catalog.