SYLLABUS FOR PHY-131: University Physics II

SECOND SUMMER SESSION, 2013

INSTRUCTOR: Dr. Gary B. Adams

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OFFICE HOURS: 10:40-11:40 AM Daily (except for examination days)
in the Help-Study Room PSF-186

I. INTRODUCTION

PHY-131 is the second part of a three-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-131 is the second semester of calculus, or, in terms of its ASU course number, MAT-271; the third semester of calculus, MAT-272, is a corequisite for the course. Since a working familiarity with basic integral calculus will be assumed, the student who has not had this course or its equivalent should withdraw from the class. Differential and integral calculus will be used regularly throughout the course.

PHY-131 covers the subject of electricity and magnetism from the electrostatics of Coulomb's law through electrodynamics, as contained in Ampere's and Faraday's laws. Some DC and AC circuit analysis is done, but only to illustrate the physical properties of simple circuit elements and the concept of resonance in physical systems. The course concludes with a discussion of Maxwell's equations and a brief introduction to electromagnetic waves. A detailed list of topics can be found on the Lecture Schedule which accompanies this syllabus.

The textbook is Physics for Scientists and Engineers, by Serway and Jewett, Eighth Edition, (Brooks/Cole, 2010.) You may use either the expanded edition or Volume 2 only. Reading assignments are keyed to this textbook. At the bookstore, the textbook should come packaged with WebAssign. Enhanced WebAssign is required. If you buy a used textbook, then you must buy Enhanced WebAssign separately at the bookstore or online at the WebAssign website. 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 Summer Session commences on Wednesday, July 3 and concludes on Tuesday, Aug 13. A schedule of lectures and examinations is distributed with this syllabus.

Lectures occur daily from 8:35 until 9:55 in PSF-173. Students are responsible for any information imparted to the class during lectures. Minimal preparation for lecture is to do the reading assignment for that day, which is distributed with this syllabus. To more fully prepare for lecture, also take an advance look at that lecture's homework problems. 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, 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 daily from 10:10 - 10:50, in either PSA-302 (line number 40599) or PSF-366 (line number 41338), or from 11:50 - 12:30 (line number 40843). The recitations are conducted by graduate Teaching Assistants. During the recitations, the TA's will review material from prerequisite classes, outline homework strategies, demonstrate problem-solving techniques, go over test problems from previous summers, etc. Recitations will not meet on PHY131 test days, which are July 15 and 24, and Aug. 2 and 13.

Most recitations will begin with a short **quiz** similar to one of the HW problems which is due on that day. Quiz days are indicated with a "Q" alongside the date on the Lecture Schedule which accompanies this syllabus.

The **Help-Study** Hall (PSF-186) will be staffed by faculty and Teaching Assistants from 10:40 to 11:40 and again from 12:40 to 3:40 each day except examination days. Help-Study Sessions are for the students' benefit, and taking advantage of these Sessions has made a significant difference in

the success of many students, but participation is completely optional. Teaching Assistants associated with this course will inform their respective recitation sections of the hours during which they will be present in the Help-Study Hall, and they will not otherwise keep office hours. When visiting the Help-Study Hall you may of course ask questions of any member of the course staff on duty. Students who find it impossible to attend the Help-Study sessions because of other commitments can arrange office appointments with the instructor or TA's.

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. Use of this resource is optional to Summer Session students in PHY-131, but highly recommended. Useful class information will be disseminated through e-mail. If you currently have an ASU e-mail account, then you need do nothing. If you DO NOT currently have an e-mail account at ASU, or if you do not receive an e-mail from the instructor by July 17, then you should send the instructor a message at the address *gary.adams@asu.edu*. Please sign your name to the message. Your e-mail address will be copied from your message and added to the class list. Here are the e-mail addresses for the Summer Session 131 TA's:

Jeffrey Hyde	Jeffrey.Hyde@asu.edu
Jayden Newstead	Jayden.Newstead@asu.edu
Henry Lamm	Henry.Lammiv@asu.edu

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 three lectures, Turning Point questions will be considered practice questions, as you learn to use your Turning Point transmitters. Beginning TUE July 9, 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. Correct answers will receive 3 points and incorrect answers will receive 2 points; so there is a very small penalty for an incorrect answer. You will need a small hand calculator to answer some quiz questions; please bring one to each lecture. There are expected to be about 60 Turning Point questions over the course of the session, so the maximum

possible Turning Point score will be about 180 points. The final Turning Point grade will be determined as a percentage out of 162 points (or ∼90% of all possible points should the number of possible Turning Point points change.) Your maximum Turning Point grade is 100%, i.e. more than 162 points will not be counted as extra credit. Since only 90% of all possible Turning Point points are required for a perfect Turning Point score, no opportunity is provided to make up missed Turning Point questions. USING SOMEOME 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 Turning Point 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

The assigned homework problems can be found only at the WebAssign website (www.webassign.net). There is one problem set for each lecture. Due to the time constraints of a six-week session about half as much homework is assigned as during a normal fifteen-week session; however, in general the summer assignments consist of only the more challenging problems on each topic. In addition, between one and three ungraded HW problems will be assigned for each lecture; these problems are available only in lecture and the answer will always be given when the problem is assigned. The next day's recitation quiz will often be related to one of these ungraded HW problems. You may wish to do some of the simpler problems from your selected text in preparation for the assigned problems.

There are 25 homework assignments at an average of about six problems each. EACH ONLINE ASSIGNMENT IS DUE AT 10 PM ON THE SCHOOL DAY ON WHICH IT IS ASSIGNED with the exception of those problems assigned on FRI, which are due at 10 PM SUN night. The ungraded HW will not be collected or graded in any way; however, it will often be the subject of the recitation quiz on the following school day.

Working with others is ENCOURAGED as a means of improving one's understanding through questioning and explaining, but homework is designed for learning and those students who shortcut the HW can expect to do poorly on quizzing and testing. Forty percent of the available HW points are REQUIRED in order to qualify for a passing grade in the class.

LESS THAN 40% OF AVAILABLE HOMEWORK POINTS IS AN AUTOMATIC E

D. Quizzes

There will be 21 quizzes. Each quiz will be given at the beginning of a recitation period; the quiz days are indicated by a "Q" alongside the date on the LECTURE schedule distributed with this syllabus. Quizzes will be similar to one of the HW assigned with the previous day's lecture. The different recitations will have a slightly different version of the quiz for each day. There are six drops; i.e. the final quiz average will include your 15 best quizzes. THERE WILL BE NO MAKE-UP QUIZZES.

E. Examinations

The four tests will cover material as indicated in the 131 lecture schedule which accompanies this syllabus. There is no comprehensive final examination; however, physics is a cumulative subject and material which is offered late in the session usually requires mastery of earlier material. As a result, TEST 4, GIVEN ON TUESDAY, AUG. 13, SERVES THE PURPOSE OF A FINAL EXAM; YOU MUST BE PRESENT ON THIS DAY. Each test will consist of a multiple choice section with about 15 questions, which will be given online in the Physics Testing Center (PSH-563), and a written section, which will be given during the lecture period. The online section will be taken on computers provided by the physics department in PSH-563, under the supervision of recitation TA's; the online test has a one-hour time limit and the testing center will be open from 10 AM - 2 PM on the test days (if you are taking PHY132 this summer, note that 132 will not meet on the PHY131 test days). The written section will be roughly equivalent to two recitation quizzes, and will be taken at the beginning of the lecture hour in PSF-173; seating for these lecture quizzes will be assigned. The written problems may be similar to homework, but they may also represent applications of principles in entirely different circumstances. The multiple choice questions may cover conceptual questions as well as simpler problems. For the four summer test dates, see the lecture schedule which accompanies this syllabus.

Examinations are governed by the following policies:

(1) THERE WILL BE NO MAKE-UP TESTS. If you miss one of the first three tests then that test must be your drop. You must be present for the fourth test.

(2) Drop policy. Each student has the option of dropping any one MC and any one lecture quiz section, except that YOU CANNOT DROP BOTH SECTIONS OF TEST 4.

If you miss any of the first three test days, those two missed sections are automatically your two drops. You must be present for the test on Aug 13, which serves the purpose of an exam.

(3) 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!

(4) The use of hand calculators is permitted. However, your calculator MAY NOT contain stored physics equations.

(5) Test paper (including scratch paper) will be provided. Bring only your pencils and calculators.

(6) Formula sheets will not be used in tests. Understanding a concept of physics is tantamount to knowing its mathematical expression and how to apply it to a given physical situation. Non-trivial derivatives and integrals, numerical values of physical constants, and some case-specific formulas will be provided when their use is required.

(7) On the lecture quizzes, partial credit is 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.

(8) In the event of a fire alarm occuring 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.

(9) If a student believes there is an error in grading his or her lecture quiz, the complaint should be put in writing and handed, together with the test, 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 to the complaint, 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.)

F. Final Grades.

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

Turning Point: 5%

Homework: 8%

Quizzes: 7%

Lecture Quizzes 35%

MC Tests: 45%

A MINIMUM OF 40% OF AVAILABLE 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. Grade scales used during previous summers can be found at the course web site listed at the bottom of this page.

G. Withdrawal and Incompletes

Withdrawal policies are established by the University (see the 2013 ASU Calendar at http://www.asu.edu/calendar/academic.html.) The deadline for unrestricted course withdrawal is July 23. Other deadlines are also given in the Calendar.

Incompletes are an alternative offered by the University for students who are succeeding in a course, but who, because of unavoidable circumstances, are unable to complete the coursework in the allotted time. Students who are granted an incomplete must, in general, repeat the course from the beginning and complete all work within one year. You MUST have a passing grade at the time that you request an incomplete, else your request cannot be considered.

Beginning July 3, this information, plus updates, and other information of interest, such as grades, practice test solutions, etc. will be available on the internet at **http://www.public.asu.edu/~gbadams**