

SYLLABUS FOR PHY 121: University Physics I

Fall 2013

INSTRUCTOR: Dr. Gary B. Adams

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CLASSES:

OFFICE HOURS:

PHY 101 9:00-10:15 TTH PSF-101

To Be Determined - Start MON 8/26

PHY 101 10:30-11:45 TTH PSF-101

6 hours total - All on MWF

PHY 121 1:30- 2:45 TTH PSF-173

See Webpage for Latest Info

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

I. INTRODUCTION

PHY-121 is the first part of a three-semester sequence in introductory physics offered to engineering and other science and pre-professional majors. The prerequisite for PHY-121 is MAT-270. A working familiarity with basic differential and integral calculus will be assumed.

PHY-121 covers the subject of Newtonian mechanics including kinematics (the description of motion), and dynamics (the relation of motion to force and mass). Among the most important topics are Newton's Laws of Motion and the conservation of momentum and energy. Other topics are rotational kinematics and dynamics, Newtonian gravitation, and simple harmonic motion. A detailed list of topics can be found on the accompanying lecture schedule.

The textbook is *Physics for Scientists and Engineers*, by Serway and Jewett, Ninth Edition, (Brooks/Cole, 2013.) See our class webpage for a list of purchase options. 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 web site. Also required is a Turning Point transmitter (available at the bookstore) or Turning Point ResponseWare software (see our class webpage).

II. COURSE FORMAT AND POLICIES

A. General

The course during this semester commences on THUR Aug. 22 and concludes on FRI Dec. 6. A reading schedule and a schedule of lectures and examinations is distributed with this syllabus. A schedule of homework assignments will be posted on the class web site (available from my home page).

Lectures are on TTH from 1:30-2:45 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, 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. You are expected to record your response to these questions using your Turning Point transmitter or software. You must register your Turning Point transmitter or software in order for your responses to be graded. A guide to Turning Point, including instructions for registration, 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 9:00 AM MON Aug. 26. EXCEPTION: Recitations do not meet on FRI Sep. 20, nor the WED or FRI of Fall Break week (Oct. 16 and 18), nor the WED of Thanksgiving week (Nov. 27). The last recitation meetings are on FRI Dec. 6. This results in 13 recitation meetings for WED's and FRI's, and 12 recitation meetings for MON's. 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 either a graded group exercise or a quiz.

Help-Study Sessions are for the students' benefit, but participation is optional. Beginning MON Aug. 26, the Help-Study Hall (PSF-186) will be staffed by volunteer faculty and Teaching Assistants several hours each day between 9:00 and 6:00. Teaching Assistants associated with this course, and your instructor, will keep some of their office hours in the Help-Study Hall.

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 three lectures, Turning Point questions will be considered practice questions, as you learn to use your Turning Point transmitters. Beginning TUE Sep. 3, 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 70 Turning Point questions over the course of the semester, so the maximum possible Turning Point score will be about 210 points. The final Turning Point grade will be determined as a percentage out of 189 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 189 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 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

A list of assigned homework problems will be made available on the class web site as the semester proceeds. There will be one assignment for each lecture. All homework assignments are to be completed and turned in using WebAssign; a guide to using WebAssign can be found on the course web site. Due dates for WebAssign homeworks are available on the Assignment List at the WebAssign web site. In general, assignments made on TUE are due by 11:59 PM the following MON, and assignments made on THUR are due by 11:59 PM the following WED, but the official due dates are always the ones found at WebAssign. Assignments submitted more than 48 hours before the due date will receive 10% extra credit. Please see the "Tips" for using WebAssign on our class webpage for more information.

For working on homework, STUDY GROUPS ARE STRONGLY ENCOURAGED. The PHY121 WebAssign problems are designed to be done in study groups of 2-3 serious students. For most WebAssign problems, the numerical values will be randomized; so as a group you will be determining the right strategy rather than the actual answers.

A total of approximately 3300 homework points will be possible. The final homework grade will be determined as a percentage of 2970 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 2970 points will not be counted as extra credit. 1300 HOMEWORK POINTS ARE REQUIRED FOR A PASSING GRADE IN THE COURSE.

D. Quizzes and Graded Group Exercises

Every recitation will begin either with a graded group exercise or a quiz. There will be 13 (WED and FRI) or 12 (MON) recitations over the course of the semester; there will be eight to ten graded group exercises worth 10 points each and three to four quizzes worth 25 points each. Your lowest graded group exercise score will be dropped. The lowest of your three or four quiz scores will automatically receive half-weighting when averaged (*i.e.* will be regarded as being worth 12.5 points). THERE ARE NO MAKE-UP QUIZZES OR GROUP EXERCISES FOR ANY REASON, with the following EXCEPTIONS: once for group exercises and once for quizzes (AND ONLY ONCE EACH), you may arrange with your TA to attend an alternate 121 recitation; a list of 121 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. Quizzes will be similar to WebAssign problems or examples done in lecture, and will be on material already covered in the lectures and/or homework assignments. Quizzes will be announced on Blackboard a minimum of five days before the quizzes begin.

E. Examinations

The three tests will cover material as indicated in the lecture schedule. Each of the three tests will consist of about 15 multiple choice questions, and will be given online on computers provided by the physics department in the

Physics Testing Center (PSH-563), under the supervision of recitation TA's. The online tests have a 75-minute time limit and the testing center will be open from 9:00 AM - 7:15 PM on the test days; the test days are as indicated on our lecture schedule. For each of the three online tests, you will be required to sign up for a 90-minute period in which to take the online test; the sign-up form will be online. The final exam, on THU Dec. 12 from 12:10- 2:00 PM, will be 40 MC questions; it will be comprehensive, and it will be given in PSF-173 with assigned seating.

Examinations are governed by the following policies:

- * In figuring your test average, the lowest of the three MC test scores will automatically receive half-weighting when averaged (*i.e.* will be regarded as being worth half as much as the other two MC tests).
- * 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! You will be required to sign a statement of academic integrity for each test.
- * A full set of test rules is available at the course web site.
- * 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.
- * Your scratch paper will include any necessary constants and a few equations; before the test, a copy of the scratch sheet will be available on the class website.
- * In the event of a fire alarm occurring during an examination, students will be asked to gather their belongings and leave the testing room as expeditiously as possible. Those students whose testing was interrupted by the alarm will then be given the appropriate amount of extra time to finish their tests, or else given an entirely new test, once the exam is able to resume.

F. Final Grades.

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

Turning Point (total points out of 189): 5%

Homework (total points out of 2970): 14%

Group Exercises (drop 2): 5%

Quizzes: 6%

Tests: 50%

Final Examination: 20%

A MINIMUM OF 1300 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 80% of all possible points can expect to receive an A of some type (A-, A, or A+); students who earn 65-80% of all possible points can expect to receive some type of B, and students who earn 50-65% of all possible points can expect to receive a C or C+. For information on HOW TO FIGURE YOUR FINAL GRADE see the course web page.

G. Withdrawal

Withdrawal policies are established by the University (see the Fall 2013 General Catalog). The deadline for course withdrawal is Nov. 6. Other deadlines are also given in the Catalog.

Beginning Aug. 22, this information, plus course info updates, will be available on the internet at <http://www.public.asu.edu/~gbadams>