

SYLLABUS FOR PHY-111: General Physics I
Spring 2004

INSTRUCTOR: Dr. Gary B. Adams

OFFICE: PSF-430 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 111	1:40-2:55	TTH	PSF-173	Check Web Page for Updates	
PHY 111R	3:40-4:30	T	PSH-355	3:00-5:00 M	PSF-462
PHY 111R	4:40-5:30	T	PSH-355	2:40-3:30 W	PSF-462
PHY 111R	12:40-1:30	TH	PSH-355	1:40-2:30 W	PSF-352 (Help Study)
PHY 111R	11:40-12:30	F	PSH-360		
PHY 111R	3:40-4:30	F	PSH-360	(tentative)	

I. INTRODUCTION

PHY-111 is the first part of a two-semester sequence in introductory physics offered to students who are not majoring in physics or engineering. This sequence is intended for students in pre-medicine, pre-architecture, pre-dentistry, pre-law, construction, psychology, life sciences, manufacturing technology, aerospace technology, physical therapy, pre-optometry, pre-veterinary medicine, etc. WE WILL ASSUME YOU HAVE A GOOD WORKING KNOWLEDGE OF ALGEBRA, GEOMETRY, AND TRIGONOMETRY.

PHY-111 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 include: Rotation, Elasticity and Simple Harmonic Motion, Waves and Sound, Fluids, and Heat and Thermodynamics. The textbook is *Physics, 6th Edition*, with EGradePlus, by John D. Cutnell and Kenneth W. Johnson (Wiley, 2004). EGradePlus is required. If you buy a used textbook, then you must buy EGradePlus separately at the bookstore. Also required is a PRS (Personal Response System) transmitter.

The associated laboratory, PHY-113, is an essential part of the introductory physics experience. We STRONGLY recommend that you take the lab concurrently with the lecture section, even if your curriculum is one of the few that does not require it.

II. COURSE FORMAT AND POLICIES

A. General

The course during this Semester commences on Tue., Jan. 20 and concludes on Tue., May 4. A schedule of lectures and examinations is distributed with this syllabus. A schedule of reading and homework assignments will be posted on the class web site.

Lectures are on TTH from 1:40-2:55 in PSF-173. Students are responsible for any information imparted to the class during lectures. Minimal preparation for lecture is to do the **REQUIRED READING** for that day; this required reading is available in pdf format on the course website. To fully prepare for lecture, you should also do the suggested reading, which can be found with the **HOMEWORK SCHEDULE** on the course web site, and 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 required reading, 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 PRS (Personal Response System) transmitter. You must register your PRS transmitter in order for your responses to be graded. A guide to PRS, 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 Tue., Jan. 20. The last recitation meeting will be on Fri., Apr. 30. The purpose of the recitation section is to give the student an opportunity in a small class environment to learn essential concepts and problem-solving strategies. Each recitation period (except the first Tue., Thur., and Fri.) will open with a short quiz.

Help-Study sessions are for the students' benefit, but participation is optional. Beginning Mon., Jan. 26, the Help-Study Hall (PSH-352) will be staffed by volunteer faculty and Teaching Assistants several hours each day between 8:40 and 3:30. 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. Exam and term grades will be published by e-mail or web page as soon as they are available. 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 Feb. 3, then you should send the instructor a message at the address gary.adams@asu.edu. The subject of the message should be "PHY 111 e-mail" and the body of the message should include your name and your RECITATION SECTION by TIME and by LINE NUMBER. Your e-mail address will be copied from your message and added to the class list.

B. PRS (Personal Response System)

You will use your PRS transmitter to answer Multiple Choice questions during the lecture period. Your answers will be graded, and your PRS grade will count 5% of your overall class grade. For the first two weeks, PRS questions will be considered practice questions, as you learn to use your PRS transmitters. Beginning Tue. Feb. 03, PRS questions will be graded. You are always encouraged to discuss PRS 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 PRS questions over the course of the semester, so the maximum possible PRS score will be about 300 points. The final PRS grade will be determined as a percentage out of 250 points (or ~85% of all possible points should the number of possible PRS points change.) Your maximum PRS grade is 100%, i.e. more than 250 points will not be counted as extra credit. Since only 85% of all possible PRS points are required for a perfect PRS score, no opportunity is provided to make up missed PRS questions. USING SOMEONE ELSE'S TRANSMITTER, OR ALLOWING SOMEONE TO USE YOUR TRANSMITTER, WILL RESULT IN AN AUTOMATIC FAILING GRADE FOR THE COURSE.

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

EGrade Plus. (EXCEPTION: There may be four or five problems during the semester which have to be written up and handed in at recitation.) A guide to using EGrade Plus can be found on the course web site. Due dates are available on the Assignment List at the EGrade Plus web site. In general, assignments made on Tue. are due by 11 PM Fri., and assignments made on Thur. are due by 11 PM the following Tue., but the official due dates are always the ones found at the EGrade site (you have about a week to do each of the first two assignments -- this allows you to get accustomed to using EGrade). Assignments submitted after the due date has passed will receive no credit.

YOU SHOULD ALWAYS DO THE TEXTBOOK PROBLEMS ON PAPER BEFORE ATTEMPTING THE ONLINE VERSIONS, as the actual numerical values in the online versions will be randomized, and so will always be different from the numerical values in the textbook problems. While doing the textbook problems on paper, STUDY GROUPS ARE STRONGLY ENCOURAGED. For most people, talking about physics is an essential part of understanding physics and developing an accurate and useful physical intuition. However, you should always work alone when submitting your HW online. Remember, HW problems are practice for the tests; you are only hurting yourself by collaborating during the online submission process.

A total of approximately 500 homework points will be possible. The final homework grade will be determined as a percentage out of 425 points (or ~85% of all possible points should the number of total HW points change.) Your maximum homework grade is 100%, i.e. more than 425 points will not be counted as extra credit. 140 HOMEWORK POINTS ARE REQUIRED FOR A PASSING GRADE IN THE COURSE.

D. Quizzes

Quizzes will be given during the first 10-15 minutes of each recitation beginning Tue. 1/27. This results in 13 quizzes for each recitation section. The highest 10 quiz scores will be counted. Quizzes will be similar to simpler problems, and will be on material already covered in the lectures and/or homework assignments. Tue. quizzes will most likely come from material covered during the previous Tue. or Thur., Thur. quizzes will most likely come from material covered during the previous Thur. or Tue., and Fri. quizzes will most likely come from material covered during Tue. or Thur. of that week.

E. Examinations

The four tests will cover material indicated in the schedule by lecture numbers. Each test will consist of 2-3 problems and 14-15 multiple choice

questions. The 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. The final examination will consist of 40 multiple choice questions. The final will be comprehensive. For the test dates, see the lecture schedule which accompanies this syllabus. This instructor's old tests (from Fall 2003), with solutions, will be available at the Noble Library Copy Center beginning Wed., Jan. 28.

Examinations are governed by the following policies:

- * THERE WILL BE NO MAKE-UP TESTS FOR ANY REASON. The lowest score of all four tests will be deleted in the final course grade calculation. IF YOU MISS A TEST FOR ANY REASON, THAT TEST MUST BE YOUR DROP.
- * 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, along with a picture ID.
- * A short equation sheet will be provided for each test. It will NOT include any definitions, or fundamental physical principles (like Newton's Second Law). You will always find the current version of the equation sheet on the class web page.
- * No partial credit is given for multiple choice. For the problems, 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. Failure to give units is always at least 1 point off for each occurrence.
- * 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 examination, the complaint should be PUT IN WRITING and handed, together with the examination, 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:

PRS (total points out of 250): 5%

Homework (total points out of 425): 8%

Quizzes (best 10 of 13): 7%

Tests (best 3 of 4): 60%

Final Examination: 20%

A MINIMUM OF 140 HOMEWORK POINTS IS REQUIRED FOR A PASSING GRADE IN THE COURSE. The scale for final letter grades will ultimately be determined by overall class performance. However, any student who earns 90% of all possible points can expect to receive an A. For information on HOW TO FIGURE YOUR FINAL GRADE see the course web page. (This information will be available by Jan. 22.)

G. Withdrawal

Withdrawal policies are established by the University (see the Spring 2004 Semester Bulletin.) The deadline for unrestricted course withdrawal (guaranteed W) is Feb. 15. The deadline for restricted withdrawal (instructor-approved W) is Apr. 2. Other deadlines are also given in the Bulletin. The important point to remember is that after Feb. 15 (and before any other withdrawal deadline) one will receive either a W or an E depending respectively upon whether or not one is "passing" the course at that time as certified by the instructor. In particular, a cumulative homework score of less than 20% at the time of withdrawal will be interpreted as failing.

Beginning Jan. 22, this information, plus course information updates, and answers to even-numbered problems, will be available on the internet at

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