

Syllabus

PHY2048 - Physics I with Calculus Spring 2008

Instructors

Prof. Rick Field – Ph. 392-5702, email: phy2048@phys.ufl.edu

Office: NPB 2043

Prof. Peter Hirschfeld – Ph. 392-8749, email: phy2048@phys.ufl.edu

Office: NPB 2165

Office hours posted on course website.

Only e-mails to phy2048@phys.ufl.edu will receive a response. E-mail to the instructor's direct accounts will be ignored.

Textbook (pay careful attention or it will cost you)

The textbook for the course is Fundamentals of Physics, **8th Edition.**, by: Halliday, Resnick, Walker, Wiley (2007). This is a relatively new edition of the book. Do NOT run out and buy this until you have read more below (or it will cost you \$)!

Homework in this course is graded and will count towards your final grade. The homework is done online, using the WileyPLUS system. Access to the online homework system requires a WileyPLUS access code.

There are two options for purchasing the textbook/WileyPLUS access code:

1. Purchase Halliday Resnick and Walker Fundamentals of Physics 8/e Parts 1& 2 with Wiley Plus at a local book store. Make sure it says "with WileyPLUS" The ISBN number for this 2 volume set, bundled with the homework system access, is 978-0-470-18216-1. This bundle of the text and WileyPLUS is unique to the University of Florida. If you purchase the textbook elsewhere it will not come with the access code and it will cost you more (approximately double) to buy the access code separately. **DO NOT THROW OUT THE CARD THAT IS PACKAGED WITH THE BOOK. IT CONTAINS THE CODE THAT YOU WILL NEED TO ACCESS THE ONLINE HOMEWORK. IF YOU THROW THIS OUT YOU WILL HAVE TO PURCHASE A NEW ACCESS CODE AT A STEEP COST TO YOU! KEEP IT IN A SAFE PLACE FOR THE ENTIRE SEMESTER.** Used books do not come with an access code and buying the WileyPLUS access code separately is the same price as the new books so, unfortunately, it will not save you \$ to purchase used books.

2. You can purchase an **online only** version of the text containing the WileyPLUS access code at <http://www.wiley.com/college/buywileyplus> This contains the access code and

the online book parts 1-4 for both semesters (PHY2048/2049) at the same cost as purchasing the hardcopy book (Parts 1 and 2) for only one semester (PHY2048); however, you do not get a paper copy of the book, and what you are buying is a license to the site for 18 months after which period you may no longer have access.

What do the instructors recommend? Because this is a foundational course for science and engineering, it is likely that you will find the hard copy text an important and useful reference for your future courses and in your career for many years to come. We therefore recommend purchasing the hardcopy text (parts 1 & 2) now and parts 3 & 4 for PHY2049 when you take part II of this sequence.

Homework

To get onto the online homework system you will need to enter the access code that came with the hardcopy textbook (option 1 above) or to have purchased the access code with the on-line text (option 2 above). Have your access code ready when you first access the system. Your initial access to the online homework system depends on when you registered for the course as described below.

When you first go to the URL: before doing anything click the “Browser Check” link on the right pane. This will check to see that your browser is configured properly to use the system, and if it is not guide you through the steps to do so. For a brief tutorial on the “Browser Check” and on entering your access code into the system see Lecture 0.

If you pre-registered for the course: you should have gotten an e-mail message to your Gatorlink account that gives you the WileyPLUS URL, your login name (your Gatorlink e-mail address) and a password to log onto the WileyPLUS system. You **do not** need to click “Register”. Instead click “Go to Login” and use the log-in and password you were sent to get onto the system and follow instructions for entering your access code (scroll down the entry page to locate where the code must be entered). Once you have access to the site bookmark it for easy return (or just use the URL e-mailed to you). You should also change your password using the “My Profile” link at the top of the page to change your password to something more secure.

If you did not pre-register: you must be registered on the WileyPLUS system by us. In that case send an e-mail (from your Gatorlink e-mail account) including your name and UFID with a note saying that you need to be enrolled on the WileyPLUS system to phy2048@phys.ufl.edu. Then await the e-mail from WileyPLUS giving you the URL, your username & password. If you do not get this within 1 day of e-mailing us, e-mail us again.

Do not delay in logging-on/registering on the system. Not getting your homework in because you waited to the last minute and had trouble registering will not excuse you from the resulting zero on the homework assignment. **Detailed homework solutions will be uploaded to the “Class Section Documents” section of the WileyPLUS site immediately after the due date/time.** Note that the **first online homework assignment is due Sunday, January 13th at 10 PM.** The course Schedule Page gives the assigned problems and due dates. Once the due date/time (generally Sunday/10 pm) has passed no further input of answers for credit will be accepted. It is your responsibility to get your

homework in on time. Last minute computer/local server problems will not excuse you from this responsibility. Waiting to the last minute to submit your homework is like playing Russian Roulette with your homework credit.

Discussion Section Quizzes

In most weeks a quiz will be administered during the last 10 minutes of your discussion section. The quizzes will test how well you learned the concepts and methods of the homework problems. The grade you receive on the homework set is directly tied to your performance on the quiz as follows. In any given week you will have homework that must be submitted online by 10 pm, Sunday night. (Note that you are encouraged to work and submit the homework well before the time it is due so you can get help when you need it). The quiz in your next discussion section will be closely related to ONE of the homework problems selected at random from the most recently due set. The problem may be restructured to provide guidance, allow awarding of partial credit and discourage memorization of only the formula for the solution. The particular problem given in each discussion section is chosen at random so sometimes it will be one of the easier problems from the HW set and sometimes it will be a harder problem (different sections will get different problems).

Your score for the homework/quiz for that week is obtained by multiplying your homework score by the fractional credit (out of 1) you got for the associated quiz problem. If you scored 100% on the homework and you get a 1 on the quiz you did your job that week and get the full homework credit towards your homework*quiz grade. If you scored 100% on the homework but only get 0.5 on the quiz you get 50% of the credit towards your grade. If you scored 50% on the homework and 0.5 on the quiz you get 25% of the credit. Note that if you score 100% on the homework and get a zero on the quiz you get NO homework credit for that week.

We are telling you exactly what you must learn for this portion of your grade: the methods for solving a set of homework problems. You know what the possible problems are going to be for the quiz in a given week. In return we expect you to learn how to do these problems *on your own without any notes or other help*. In doing the online homework you can get help in discussion section, office hours, from tutors and from other students. However, in the end you must learn the methods needed to do the problems on your own. The quizzes will give partial credit so if you set up the problem correctly but make an algebraic mistake you will get most of the credit for the problem and its associated homework.

You will be permitted no more than 2 documented (e.g. medical note) absences from the discussion sections, with make-ups for missed quizzes to take place at the first opportunity determined by your TA. The documentation must be provided to your TA within 2 weeks of the missed quiz or a rational reason that it will be delayed must be e-mailed along with the projected receipt date of the documentation to both your TA and to the course e-mail address (phy2048@phys.ufl.edu) within those 2 weeks.

To provide a measure of forgiveness for illnesses and other challenges that life throws at you, 10% of the problems will be dropped in evaluating your final grade. All scores will be computed to at least 5 significant figures (effectively no rounding). The homework*quiz portion of the course will count for 25% of the course final score.

Exams

There will be 3 in-term exams and a cumulative final exam. The date and time for each exam, and the chapters it covers are listed on the Course Schedule Page. **These exams will not take place in your lecture hall in the physics building. Room assignments for where you must go to take the exams will be announced during class in the days leading up to the exam and posted on the course web page.** Exams are multiple choice with your answers bubbled in on Scantron sheets. Mark your answers carefully. What you mark will determine your score (independent of your having meant otherwise). To each in-term exam you may bring a single formula sheet on 8½ x 11 inch paper (both sides) and you should bring a calculator (calculators may not be shared and may not have electronic communications capability), #2 pencils, an eraser and your picture ID (preferably your UFID). Scrap paper will be provided. To the final you may bring two additional (3 total) formula sheets. Unless superseded by a valid excuse a missed exam will result in a zero. Valid excuses are officially sanctioned UF events, medical excuses or family emergencies. Acceptable excuses will require a coach's, doctor's or instructor sanctioned note with a verifiable contact phone number. The documentation must be provided to your instructor within 2 weeks of the missed exam or a rational reason that it will be delayed must be e-mailed along with the projected receipt date of the documentation to the course e-mail address (phy2048@phys.ufl.edu) within those 2 weeks. A valid excuse will allow you to take the cumulative make-up exam to replace the zero on the missed exam. There will be one cumulative make-up exam (covering material from all three exams) given on Wednesday, April 23rd. The grade on this make-up exam will replace the missed exam. The three in-term exams and the final exam be equally weighted and count for 70% of the course final score.

Practice exams will be uploaded to the Class Section Documents section of the WileyPLUS site.

Student response system (HITT)

You should each purchase the HITT remote transmitter associated with the in-class student response system (the same system is also used by chemistry so you may already have the remote). This transmitter will let you respond to questions posed during class. Your response will be recorded. Simply responding will get you 1 point credit for the question while responding correctly will get you 2 points credit. To get the credit you must register on the system. For that click <http://www.phys.ufl.edu/~hitt/> at your earliest opportunity and follow the instructions on that page. **It is your responsibility to ensure that your remote is functioning properly and that you are sending on the correct channel (see web site above for link to instructions for setting the remote channel). It is recommended that you set the channel at the start of each lecture.** Lights on the remote will indicate that your answer has been recorded on the system. If your response is not registered you must bring this to the attention of the instructor **at the end of THAT class**, by giving the instructor a slip of paper with your name UFID and remote number. You

will only get the 1 point per problem for responding but to account for such and other issues there will be a 10% forgiveness applied at the end of the semester (your averages will be counted out of the total number of points possible less 10% of those). To get credit in subsequent classes you must get the problem resolved (fresh batteries, new remote, ...) before the next class. The student response grade will count as 5% of your course final score.

The formula for estimating your course grade as we go along can be found on the course website on the General Course Info Page.

General

Prerequisites and preparation: Differential and integral calculus, with a good working knowledge of trigonometry and elementary algebra. The course will rely heavily on this level of math (see text, Appendix E). Vectors will be used extensively, with concepts to be developed in class as needed. If you are not competent at this level you should consider taking the appropriate refresher course(s) before taking this class.

Homework: Working the weekly problem sets is the most important element of the course. It is critical that you do them, not only for receiving homework grade credit, but because you cannot understand physics without working out problems. In fact, the assigned (graded) homework constitutes a minimal set; you would do well to do additional problems beyond these (the odd numbered end of chapter problems have answers at the back of the textbook and the ones labeled SSM have detailed solutions available to you on the WileyPLUS system). If you don't conscientiously work problems, you are very unlikely to pass the discussion section quizzes, in-class exams, or ultimately, the course. **Work on the assigned, as well as some extra problems.**

You may find solutions to more of the problems on-line. Solutions can be helpful when you really get stuck, but over reliance on these will lead to disaster. It would be like learning to drive by watching a driving instruction video. Until you get behind the wheel yourself and practice, you won't really learn.

While you can simply log onto the WileyPLUS system and work out the problems given there, another approach is recommended. The problem numbers given in the Schedule correspond to the end of chapter problems as they appear in the text. Apart from small changes in the parameter values, these are the problems you will get on the HW system. It is recommended that you work the assigned end of chapter problems, to your satisfaction, and then redo them (with the new parameters, as given) on-line. You must click the **Submit Answer** button for the system to record your response. The HW system will provide you with instant feedback on whether or not your answer is correct, and you will be permitted five tries (until the due date/time) to get the answer right, and receive credit (pending your quiz score). Each time you try again, however, some parameter(s) of the problem will change. Unfortunately the system is a little primitive in that for multi-part problems you will also have to redo those parts that you already got correct. The extra practice will help you internalize the methods.

Lecture Attendance: You are encouraged to come and gain the benefit of the explanations, worked examples, demonstrations and tricks of the trade. Note that you

cannot get the student response credit if you are not there to respond (**students caught sharing transmitters will both lose the entire SRS credit for the semester**). Classes will begin and end on time; please come on time and do not leave early; doing so in a large class can be quite disruptive. Please do not read non-course related material during class and PLEASE turn off all electronics (radios, cell phones, mp3 players) other than a calculator. If you wish to use a laptop for note taking purposes you must register your name with one of the instructors during lecture. No other laptop use is allowed.

Course Grade: Your course letter grade will not be based on a curve but rather on the following fixed scale: 90% or higher an A, 89.99-80% B+, 79.99-70% B, 69.99-60% C+, 59.5-50% C, 49.99-45% D+, 44.99-40% D, and less than 40% E. The advantage of the fixed scale is that you are not competing with other students to “get ahead of the curve.” Everyone who works hard can do well in the class. It is possible that the entire class can receive A’s (all scores would be 90% or better). Those who do not do the work will score accordingly.

How to succeed in this course: (1) It is expected that a successful student will invest at least twelve hours studying and problem-solving per week outside of class. Do not expect a good grade if you are not prepared to work this much. (2) **Read the assigned chapters before coming to lecture.** The importance of this cannot be overemphasized. (3) Work as many problems as possible on a weekly basis; the assigned (graded) ones represent the minimum recommended set. Go to instructor’s and discussion leaders’ office hours for individual help (this can be highly effective and should be regarded as free tutoring; make use of it!). To maximize the availability of this help you can go to any Instructor or Section Leader’s office hours. These will be posted on the course page, once they are established. (4) Keep up on a regular basis; cramming doesn’t work for learning physics.

Honor Code: The UF Honor Code applies to all aspects of this course. It is required that you report any possible infractions to your instructor immediately.

Students with disabilities: Students requesting classroom accommodation for disabilities must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

Other Resources:

1. Fundamentals of Physics: Student Solutions to Accompany the 7th Edition, David Halliday, Robert Resnick, Jearl Walker Wiley, 2004.
2. R.C. Davidson, Mathematical Methods for Introductory Physics with Calculus, Saunders College Publishing, 1994.
3. R.P. Feynman, R. B. Leighton and M. Sands, The Feynman Lectures on Physics, Addison-Wesley, 1966.

The World Wide Web is a wonderful resource. Here’s one useful site

<http://www.physics.uoguelph.ca/tutorials/tutorials.html> There are many more.

