Syllabus for
Physics with Calculus 2 - Electromagnetism
PHY 2049, Summer C 2011

Class Hours: Monday, Wednesday, Friday: 1001 New Physics Building
Period 4 (12:30pm–1:35pm)

Instructor:

Pradeep Kumar
NPB 2160
Tel: 392-6690
Home page: http://www.phys.ufl.edu/~kumar
Email: pkumar at ufl.edu
Office Hours: M 3PM - 4PM or make an appointment.

Discussion Sections Leaders:

Jesus Escobar
NPB 2042
392-4034
email: jescobar at phys.ufl.edu
Office hours: T5 and R5

Patrick Hearin
Office NPB 2o60
Phone: 392-7003
Email: phearin at phys.ufl.edu
Office Hours: R-6,7

Discussion Schedules:

Sections	Time	Room (NPB)	Leaders
8280	W 2 (9:30-10:35AM)	1220	
8701	R 2 (9:30-10:35AM)	1101	
8702	F 5 (2:00-3:05PM)	1220	
8703	F 3 (11AM -12:05PM)	1216	
8704	F 2 (9:30-10:35AM)	1220	

Exam Schedule: All summer exams are in class and during the class time. The summer class periods can be 75 minutes long. We can cover upto 15 problems in each exam. You are allowed a formula sheet, a calculator and pencils and erasors. Please make sure that any cell phone or any communication device is well out of sight. No hats are allowed in the exams.

Midterm 1	**Monday June 6**	**ch (21-27)**
Midterm 2	**Monday, July 11**	**ch (28-33)**
Makeup	**Monday, July 25**	**All**
Final	**Friday, August 5**	**All**

Textbook:

The textbook is *Fundamentals of Physics, 9/e* Vol. 2 by Halliday, Resnick & Walker with Wiley Plus (required). There are two options for purchasing the textbook/WileyPLUS access code:

1. Purchase Halliday Resnick and Walker Fundamentals of Physics 9/e, Volume 2 with Wiley Plus at a local book store. Make sure it says "with WileyPLUS" The ISBN number for this set, bundled with the homework system access, is 9780470900925. 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, the book is likely to be considerably more expensive AND you have to pay for 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! KEEP IT IN A SAFE PLACE FOR THE ENTIRE SEMESTER. Used books that do not come with an access code will probably leave you worse off (though some used books packaged with a new access code may be available). We have gone to some trouble to negotiate this good-value deal for the package.

2. You can purchase an online only version of the text containing the WileyPLUS access code at Buy Wiley Plus. This contains the access code and the online book for the course and is offered at a specially discounted rate of $30.

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 using option 1.

You may find the access URL useful:
http://edugen.wiley.com/edugen/class/cls221169/

Course Web Page: http://www.phys.ufl.edu/courses/phy2049/sum11/
Includes announcements, schedule, homework assignments, exam solutions, etc.

Grading: Your final grade is based on several activities:

- **Wileyplus homework assignments (performed online at home, worth 15%)**
- **Discussion quizzes (administered during Discussion sections, worth 15%)**
- **Two midterm exams (during regular lecture period, each worth 20%)**
- **One final exam (2 hours, rooms & time announced later, worth 25%)**
- **A during- class feedback HITT system. The total performance is worth 5% points.**

Grading scale: A: 85%; A$^-$: 79%; B+: 72%; B: 65%; B$^-$: 59%; C+: 52%; C: 45%; C-: 40%; D+: 35%; D: 30%; D-: 25%.

HITT:

In class questions will be posed for student feedback using the H-ITT remote system (RF transmitters are used, IR are no longer supported), allowing immediate feedback to the students and instructors on the understanding of course concepts. Simply responding to a posed question will get you 2 point credit for the question, while responding correctly will get you 5 points credit. We drop the lowest 20% of the questions, i.e. there is a 20% forgiveness to account for routine illnesses, technical problems with your remote, failure to click the answer on time, having a dead battery in your remote, etc.

Your H-ITT remote must be registered for PHY2049 – see further important information here in order to receive proper credit:

http://www.phys.ufl.edu/~hitt/

We will practice using the remotes during the first week of classes and start using the remotes for credit on the Friday of week 1 (May 13).

Homework:

Weekly web-based homework is assigned and graded through the Wiley Plus system. (http://www.wileyplus.com/) If you purchased the textbook for PHY2048 for the Fall 2010 or Spring '11 semesters, you may already have a Wiley PLUS code valid for this semester's PHY2049 (use the same username and password as your previous semester). If you do not have a Wiley Plus code from a previous semester, then you have the other option: you can purchase a book through the Wiley website

http://edugen.wiley.com/edugen/class/.....

I am told that while the book arrives later via mail, you get instant online access. I believe that if you purchase book at the Bookstore, you may be handed webassign, which we are *not* using currently.

Collaboration on homework is accepted and encouraged, but each student must do his/her own assignment. The numbers used on each homework problem are randomized for every student. Homework will be due Tuesdays and Fridays except right after the Monday exam. There will be no extensions or make-ups for the homework. Since homework submission occurs over the network using one's computer, and because network disruptions, computer viruses, etc. may occur, *you are strongly advised not to wait until the last minute to work on your homework.*

Your initial access to the online homework system depends on when you registered for the course. If you preregistered, you should have gotten an e-mail message to your Gatorlink account that give you your login name (your Gatorlink address) and password to log onto the system at http://edugen.wiley.com/edugen/class/...../. If you did not receive an e-mail with this information, go to the above URL, click "Register" and follow the instructions there. To property get credit for your efforts your login name must be your Gatorlink e-mail address (including @ufl.edu). To access the online homework you will need to enter your access code.

Summer session moves faster than the regular session. Typically 6-8 problems (some may contain multiple parts) are assigned from your textbook per homework set, and a total of 16 sets will be assigned. Each question or part may be worth 1 to 4 points. You get 10 tries at submitting a correct answer for each question. Tolerance is typically set to 2% accuracy for a correct answer.

The publisher has provided an information page that you can reach by clicking here.

Quizzes:

A total of 8 quizzes will be given in the Discussion sections. We will drop the lowest two scores.

Exams:

Each midterm exam covers material since the last exam, while the final exam is comprehensive of the entire course material. For an excused absence in either of the exams, you may be allowed to take a cumulative makeup at the end of the semester. You must make arrangements to take the makeupwell before the actual exam.

The format of all exams will be multiple choice problems (about 12-15 for all exams) using bubble sheets (ScanTron) for submitting answers. The order of problems and answers is scrambled—each student receives a unique exam sheet and must mark on his/her ScanTron sheet the 5 digit exam code (upper right corner of exam sheet) in scantron spaces 76-80. This is so that the computer knows the exact order of questions and answers for that exam. You must also bubble-in your name and your 8 digit UFID. You must bring and have it ready to show, a photo-ID when turning in your bubble sheet and your exam sheet to the instructors (the exam sheet must have your name on it and be placed into the correct alphabetically labeled slot in a wooden box).

Exams are closed book, but one 8.5"x11" formula sheet (one sided, handwritten, no magnifying glass and absolutely no derivations or solutions) is often allowed for midterms and for the final exam. The formula sheet must not contain anything other than formulae. In particular, a formula sheet containng text of questions and their solutions will be considered as cheating and taken away. The formula sheet should be in your handwriting and readable with normal vision. No magnifying glasses are allowed. A calculator is recommended (simple ones will do arithmetic, log, exp, powers, roots). Please bring a pencil, eraser, sharpner, and spare batteries for your calculator for exams.

The final exam, while cumulative, is organized in a specific way. Thus, out of the 15 problems, 10 will be selected from the previous midterm exams, 5 from each. These problems will be related in the sense that they may have different numbers or they might switch the given/asked pair in a specific setting. The last 5 problems will be from the material covered between Exam II and final.

Academic Honesty:

Students are reminded that they are to abide by the Honor Code of the University of Florida. Dishonesty in any form will not be tolerated; cheating during an exam or quiz will result in a failure for that exam/quiz and possible failure for the course.

Disabilities:

Students with disabilities that require any special arrangements for homework or exams must report such needs to the instructor at the start of the semester, during the first two weeks, along with supporting documentation from the Dean of Students Office.

Course Overview:

This course covers the laws of electricity and magnetism, which have been developed over the past several centuries but have recently led to a microelectronic revolution. Just consider all the fantastic discoveries that made communication via a cell phone

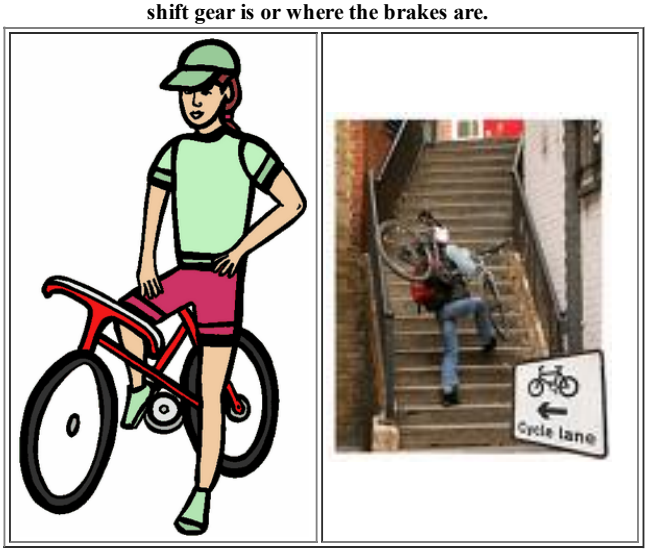
possible, or that allow a DVD player to work or the computer that is the cell phone, TV and a file cabinet.

This course assumes that you have studied Newtonian mechanics in a previous calculus-based physics course (i.e. PHY2048) and at least have co-registered in a vector calculus course (Calc 3). *If you need help with math background, get in touch with us ASAP.* This course moves fast so don't be bashful.

This is a challenging course, going beyond what you may have learned in high-school both in the physics concepts and in the mathematics. Do not underestimate the time it will take to learn the material and to solve problems.

The best way to succeed in this course is to attend lectures, ask questions, read the textbook (try reading it before the lecture!) and to do the assigned homework problems. Even better: try solving other additional problems (like the one before or the one after an assigned problem) from your textbook.

No one has ever learned how to ride a bike by reading the owner's manual. But the owner's manual does tell you where the shift gear is or where the brakes are.



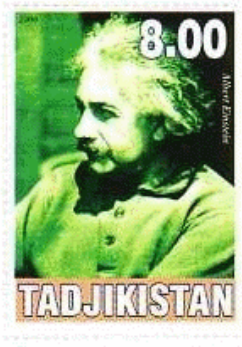
The analogy is rather interesting: If someone shows you a trick on a bike, you can say that

1. **The trick can be done, it is not impossible.**
2. **The person who showed you hte trick, knows how to do it.**
3. **Almost certainly, you can not do it yet. You really have to jump on the bike (and try and try, it is so frustrating in the beginning)**

But there is more. It is important to not have to focus on the act of riding if you want to enjoy the scenery or do any sightseeing. It is a bit like constantly looking at the maps while riding through some great sights. Actions such as which formula to use or looking up the formula in a formula sheet take up valuable time and are serious distractions from your ability to enjoy the scenery.

But if you practice a lot, you can ride without any conscious effort. Then you can enjoy the scenery.

Some clues about the impact of electromagnetism on the popular memory. Here is a collection of stamps from around the world, celebrating various scientists.



University of Florida ✦ Department of Physics