Physics 270
Sections 0101-0106
General Physics:
Electrodynamics, Light, Relativity and Modern Physics

Syllabus
Spring 2015

Course description: PHYSICS 270 is the third semester of a three-semester calculus-based general physics course designed primarily for engineering students. Electrodynamics, Maxwell's equations and electromagnetic waves, geometrical optics, interference, diffraction, special theory of relativity, and modern physics.

Pre-requisites: PHYS 161, PHYS 260-261

Co-requisite: PHYS 271

Instructor: Dr. Sergio Picozzi

3102 Physics Building
301 – 405 – 6088
sergio.picozzi@gmail.com (preferred)
spicozzi@umd.edu
Office Hours: By appointment
Lecture Times and Location

MWF 1:00 – 1:50pm, PHY 1412

Discussion Sessions

Discussion sessions will be conducted by the Teaching Assistants, and consist in a forum where students can ask questions about the course material and where problems will be worked out with student participation.

Teaching Assistants:

Xi Chen  
daphne2012hust@gmail.com
Monica Gutierrez Galan  
monicag@umd.edu
Shih-Han Hung  
shung@umd.edu
Brittany Wheatley  
badelew@terpmail.umd.edu

For schedules and venues of discussion sessions please consult TESTUDO.

Textbook

Required: Physics for scientists and engineers, 3rd edition Volumes 3, 4, 5 by Randall D. Knight (Addison-Wesley/Pearson). This textbook is also available as a single-volume hardcover.

In addition to the textbook, you will need a copy of the “Physics 271 Laboratories” manual, which is a University of Maryland custom book published by Wiley.

Note: if you want to buy a used copy of this, it must not have been written in!

To summarize: the required materials for PHYS 270/271 are the textbook, and the labs manual.

Lectures

Students are required to attend lectures, where the course material will be presented and exams will be administered.

Years of experience have convinced me that the most effective way to teach introductory physics is by working out in full detail problems from the textbook (or from other sources, when available) in front of the class. Concepts and principles will emerge and will be elucidated along the way while solutions are worked out. In a nutshell, my approach consists in “teaching by doing”.

Preparation

Students are responsible for all material covered in lectures. It is the students’ responsibility to record accurately and to be aware of the specific lectures’ contents. This is one of the reasons why attendance is necessary.

Laboratory

See Lab Schedule chart-PHY 3220

Lab includes experiments on mechanics, vibrations, waves, heat, electricity and magnetism. PHYS270 and PHYS271 (lab) must be taken in the same semester and the grade for the courses will be combined into a single grade for both. To pass, students must complete passing work in both PHYS270 and PHYS271.
Homework

Homework will be done through *Mastering Physics*. Problems will be assigned from the text by the instructor.

You must submit your answers for the homework problems over the internet using the Mastering Physics web site (see below).

There are several advantages to electronic homework submission:
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(2) If you give a wrong answer, you can go back and try again to see if you can get the correct solution.
(3) You are graded only on your final answers and get your score when you are done.

Why You Need to do the Homework: The principal way that you can understand Physics is by learning how to solve problems. The homework can be expected to be challenging, it counts a great deal towards your final grade and it enables you to succeed on your exams.

The plan is to assign homework sets nearly on a weekly basis. Assignments will be given well in advance of the due date. As a rule of thumb, you can expect an assignment referring to a given chapter to be due shortly after that chapter has been covered in class.

Getting started in electronic homework submission: To turn in your homework, you need to go to:

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Registering and Gaining Access to Mastering Physics: In order to turn in your homework, you will need to register at the Mastering Physics website http://www.masteringphysics.com/. To register, you need two things - an access number and the class ID. When you buy (new or used copy of) your textbook you will need to purchase a Mastering Physics access key number. The easy way to do this is to simply buy it on line from the above MP website.

Your class ID is: MPPICOZZI126516A

Exams

There will be three in-class midterm exams plus one cumulative final exam. All exams are closed-book and closed-notes. On exam day, bring a pocket calculator (graphing calculators are strongly discouraged) and writing tools (pens or pencils). Paper will be provided.

Moreover, you should prepare and bring a formula sheet containing only equations and values of fundamental constants, but no problem solutions.
Late Submissions and Make-ups

Turning in late homework is not allowed under any circumstances. It is your responsibility to check Mastering Physics frequently to make sure you do not miss any due date.

The lowest of three scores in the midterm exams will be dropped. No make-ups will be given under any circumstances. If you happen to miss one exam, due to illness or any other reason, that is the score that will be dropped. You must take the final exam in order to pass this course.

Final Grade

The semester grade is based on the LECTURE/DISCUSSION (75%), PHYS 270, and the LAB (25%), PHYS 271. A passing grade must be earned in both PHYS 270 and PHYS 271 to receive a single passing grade in the course.

Course grade break-down:

15% Homework
40% Midterm exams (20% each of two)
20% Final exam
25% Labs (PHYS 271)

The final grade will be set at the end of the semester after all work is completed. In assigning the final grade, I will be following the University of Maryland’s grading policy, quoted below:

- A denotes excellent mastery of the subject and outstanding scholarship. (90-100)
- B denotes good mastery of the subject and good scholarship. (80-89)
- C denotes acceptable mastery of the subject and the usual achievement expected. (70-79)
- D denotes borderline understanding of the subject. It denotes marginal performance, and it does not represent satisfactory progress toward a degree. (60-69)
- F denotes failure to understand the subject and unsatisfactory performance. (< 60)

Students with disabilities

Accommodations will be provided to enable students with documented disabilities to participate fully in the course. Please discuss any needs with the instructor at the beginning of the semester so that appropriate arrangements can be made. Students who are registered with DSS, and who are planning to take examinations at DSS facilities, are required to let me have the pertinent authorization forms in editable electronic format at least one week prior to each exam date.

University Closure

In the event of a University Closure the department will do its best to accommodate students by scheduling make-up sessions or revision of the lab schedule.

Academic Integrity

All students will be expected to comply with the University of Maryland's academic integrity policies, including the code of academic integrity and the honor pledge. Failure to comply will result in a failing grade and will be reported to the Honor Council.
Physics 270 Sections 0101-0106  
Course Schedule  
Spring 2015 --- Prof. Sergio Picozzi

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**Examination Schedule**

Midterm 1: Friday 6 March, Chapters 32-33-34-35  
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Midterm 3: Monday 11 May, Chapters 38-39-40  
**Final Exam:** Saturday 16 May 6:30-8:30 pm, Cumulative
Dear Student:

In this course you will be using MasteringPhysics®, an online tutorial and homework program that accompanies your textbook. If you have joined a MasteringPhysics course before and can still log in:

Save time by following the guide for joining another course by following the guide for joining another course (available from www.masteringphysics.com > Tours & Training > Getting Started) instead of this page.

What You Need:

✓ A valid email address
✓ A student access code
   (Comes in the Student Access Code Card/Kit that may have been packaged with your new textbook or that may be available separately in your school’s bookstore. Otherwise, you can purchase access online at www.masteringphysics.com.)
✓ The ZIP or other postal code for your school: _______________
✓ A Course ID: __ MPPICOZZI126516A __ (Provided by your instructor)

1. Register
   - Go to www.masteringphysics.com and click Students under Register.
   - To register using the student access code inside the MasteringPhysics Student Access Code Card/Kit, select Yes, I have an access code. Click Continue.
   - OR—Purchase access online: Select No, I need to purchase access online now. Select your textbook, whether you want access to the eText, and click Continue. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process is a bit different from the steps printed here.
   - License Agreement and Privacy Policy: Click I Accept to indicate that you have read and agree to the license agreement and privacy policy.
   - Select the appropriate option under “Do you have a Pearson Education account?” Continue to give the requested information until you complete the process. The Confirmation & Summary page confirms your registration. This information will also be emailed to you for your records. You can either click Log In Now or return to www.masteringphysics.com later.

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3. Join Your Instructor’s Online Course and/or Open Self-Study Resources

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Support

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- System Requirements
- Answers to Frequently Asked Questions
- Registration Tips & Tricks video
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Physics 270  
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# Physics 270 Sections 0201-0207

## Course Schedule

Spring 2015 --- Prof. Sergio Picozzi

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   - OR– Purchase access online: Select No, I need to purchase access online now. Select your textbook, whether you want access to the eText, and click Continue. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process is a bit different from the steps printed here.
   - License Agreement and Privacy Policy: Click I Accept to indicate that you have read and agree to the license agreement and privacy policy.
   - Select the appropriate option under “Do you have a Pearson Education account?” Continue to give the requested information until you complete the process. The Confirmation & Summary page confirms your registration. This information will also be emailed to you for your records. You can either click Log In Now or return to www.masteringphysics.com later.

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- Additional contact information for Customer Support, including Live Chat