

# Physics 275 Syllabus - Spring 2009

## Professors George Goldenbaum & Douglas Roberts

### Official Course Description:

PHYS275 (PermReq) Experimental Physics I: Mechanics, Heat and Fields; (2 credits)

Grade Method: REG/P-F/AUD.

Prerequisites: (PHYS 171 or PHYS 161) and PHYS 174. Corequisite: PHYS 272.

Methods

and rationale of experimental physics. Intended for physics majors and science and engineering students who desire a more rigorous approach. Experiments chosen from the areas of mechanics (from PHYS 171), gas laws, heat, and static electromagnetic fields. Theory and applications of error analysis. CORE Distributive Studies Physical Sciences Laboratory Course only when taken concurrently with PHYS 272.

### What the course is about:

Physics 275 is the second course in the introductory Physics lab sequence PHYS 174-275-276. The course is intended for physics majors and also for science and engineering students who desire a more rigorous introduction to experimental science. Experiments are mainly chosen in the general area of mechanics. A major component of the course concerns understanding error analysis, both learning how to do it and appreciating what a useful tool it is. The Lab meets for four hours each week in Room 3203 of the Physics Building. Roughly three hours of this time will be spent working on the lab and one hour in discussion during the lab.

Web Site: To get the latest information on Physics 275, check the web sites at:

<http://elms.umd.edu>

<http://www.physics.umd.edu/courses/Phys275/index.html>

Lab sections:

Lab section	Day	Time	Instructors	Teaching Assistant
0201	Monday	1-4:50PM	Goldenbaum	Steve Cowen
0301	Tuesday	2-5:50PM	Roberts	Steve Cowen
0101	Wednesday	2-5:50PM	Goldenbaum	Steve Cowen
0401	Thursday	2-5:50PM	Roberts	Steve Cowen

Course Instructors:

Prof. George Goldenbaum

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Office hours by appointment

Prof. Douglas Roberts  
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Office hours by appointment

### **Required Texts:**

"Physics 275 Lab Manual" - Second Edition--June 2007  
"A Practical Guide to Data Analysis for Physical Science Students" by Lyons.  
Recommended Text: "Introduction to Error Analysis" by Taylor.

### **Arriving late to class:**

Classes at Maryland begin right on the hour. It is important that you arrive on time so that you can get instructions for the lab and have time to finish. If you arrive more than 10 minutes late, you may not be allowed into the lab and will have to make it up during another section.

### **Making Up Missed Labs:**

You should make every effort not to miss your regularly scheduled lab. If you miss your regular lab section, you should make that lab up by going to another section that week or by scheduling a makeup lab with the TA before your next lab.

### **Grading:**

50% Spreadsheet Lab Report  
10% Homework  
20% First Practical Exam  
20% Second Practical Exam

Missing one Lab (and not making it up ) will cost one letter grade in your final grade. Missing one homework set will cost one-half of a letter grade in your final grade. Final grades will be computed based upon the above weightings. Standard grading will be followed (A is 90-100, B is 80-90, etc.) unless the class's distribution of scores is unusual, in which case a non-standard curve will be used. Lab reports in EXCEL spreadsheets should be submitted to elms/Blackboard before leaving the lab. Homework is assigned at the end of each Lab. You will turn your homework and any **revisions** to your lab by submitting an Excel spreadsheet file as an e-mail submitted to ELMS Blackboard. You can turn in your final report and homework anytime during the week, but by no later than 6 PM on the Sunday of the week in which you had the lab. Corrected homework should be available the following week.

No credit will be given for late homework unless you are seriously ill and provide a written note from your physician saying you were unable to perform the work.

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.studenthonorcouncil.umd.edu/whatis.html>.

### **General Comments on the Lab report and Homework:**

Finishing all the lab reports and Homework sets is very important. If you can't completely finish a lab and homework set, it is still important to turn in what you do have. When you are working on your report or homework, feel free to discuss among yourselves to try to figure out what is going on. By all means get together in small groups and discuss. However, do not use these discussions as an excuse to copy someone else's report or solution, or let someone else copy yours. That is cheating and is strictly forbidden. It is also very self-defeating since a large part of your grade (40%) will come from tests. The right way to proceed is first to work through the report and arrive at a definite answer on your own. With this preparation you can then discuss intelligently with your colleagues and see if you have missed something essential. Of course, you can always ask one of your instructors.

One final thing, if you miss something fundamental in a lab or test, you will may be assigned extra problems to solve until you master the concept.

### **In case of Bad weather:**

Winter in the Washington Metro area can bring large snowstorms that make travel dangerous. If the University is closed during a scheduled lab, class will be cancelled, and we will most likely reschedule the lab either for the following week or later in the semester. Closing is announced over local radio and TV as well as on the University's homepage. We will send an email concerning makeup dates when the University is closed

### **Important Dates for Spring 2009**

<b>Week beginning</b>	<b>Exercise</b>
Jan 26	1 - Review & 2 - Dice
Feb 2	3 - Decay
Feb 9	4 - Position, Velocity & Acceleration
Feb 16	5 - Free Fall
Feb 23	6 - Review for Exam 1
Mar 2	First Practical Exam
Mar 9	7 - Vibrating String
Mar 16	Spring Break
Mar 23	8 - Simple Harmonic Motion
Mar 30	9 - Anharmonic Motion
Apr 6	10- Measuring g with a Pendulum
Apr 13	11- Review for Exam 2
Apr 20	Second Practical Exam
Apr 27	Makeup Labs
May 4	Makeup Labs

\* Note: If classes are cancelled because of snow the Review and Exam will be postponed a week