

Physics 275 Syllabus – Spring 2013
Professors Douglas Hamilton and Suresh Tonwar

Version: 23 January 2013

Where: PHY 3104

Required Texts:

- (1) "Physics 275 Lab Manual" – Fourth Edition - June 2010
- (2) Either a) "Introduction to Error Analysis" by John R. Taylor
 or b) "*Data Reduction and Error Analysis for the Physical Sciences*"
 by P. R. Bevington and D. K. Robinson

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 students 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 is to understand the theory and applications of error analysis.

Prerequisites: The prerequisites for the course are Physics 174 and Physics 171 (or 161).

Co-requisite: You must be simultaneously enrolled in Physics 272 in order to receive credit for a CORE physical sciences laboratory.

Lab section	Day	Time	Instructor	TA
0201	Monday	1-4:50 PM	Tonwar	Michael Schaubert
0301	Tuesday	2-5:50 PM	Tonwar	Steve Cowen
0101	Wednesday	2-5:50 PM	Hamilton	Steve Cowen
0401	Thursday	2-5:50 PM	Hamilton	Michael Schaubert

Instructors:

Prof. Douglas Hamilton
email: dch@umd.edu
Office: 3201 Computer & Space Sciences Bldg.
Phone: 301-405-6207

Prof. Suresh Tonwar
email: tonwar@umd.edu
Office: PHY4333
Phone: 301-405-6068

Teaching Assistants	email	office
Steven Cowen	scowen@umd.edu	PHY4110
Michael Schaubert	mjarret@umd.edu	

Office Hours: Please make an appointment by email or phone.

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 try to make that lab up by going to another section that week with approval by that section's instructor.

Grading:

40%	Spreadsheet Lab Reports
10%	Homework
25%	First Practical Exam
25%	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.

Lab Reports: Each week, before you leave the lab, you must submit to ELMS an Excel spreadsheet lab report of all the work you completed up to that point. It is recommended that you also email a copy of the report to yourself or save it on a memory stick. If you need to make revisions to this report, or finish some parts, you will have until 11:59 pm on the following Sunday to submit a revised version along with any assigned homework.

Homework: Homework will be a combination of problems appearing in the Lab Manual and problems passed out in class. You will turn in your homework along with any revisions to your lab report by submitting an Excel spreadsheet to ELMS no later than 11:59 pm on the following Sunday. In some of the homework assignments, you will see that there are problems labeled with an H. These are optional, hopefully interesting, problems, which are intended "for Hotshots only" and do not count towards your grade. If you like thinking about physics problems, and are looking for something a bit more challenging, please try them. We made these problems just for you. **No credit will be given for late homework unless you have been seriously ill.**

General Comments:

You are expected to arrive in class having thoroughly read the write-up in the lab manual for the week's experiment. This is absolutely necessary for a fruitful lab experience.

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 homework solutions or let someone else copy yours. That is cheating and is strictly forbidden. It is also self-defeating since 50% of your grade will come from in class tests. The right way to proceed is to first work through the report and problems yourself and to arrive at a definite answer. With this preparation,

you can then discuss intelligently with your classmates and see if you have missed something essential. Of course, you can always ask one of your instructors.

In Case of Bad Weather: If the University is closed during a scheduled lab, class will be cancelled. The revised schedule will be communicated to you via email.

Academic Integrity: 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>.

Semester Schedule (as of Jan. 23, 2013)

<u>Week of</u>	<u>Experiment</u>
Jan. 28	Experiment 1 - <i>Introduction, Review, and Diagnostics</i>
Feb. 4	Experiment 2 - <i>Dice</i>
Feb. 11	Experiment 3 - <i>Decay</i>
Feb. 18	Experiment 4 - <i>Position, Velocity and Acceleration</i>
Feb. 25	Experiment 5 - <i>Free fall of a mass</i>
March 4	Experiment 6 - <i>First Review (Experiments 1-5)</i>
March 11	First Practical Exam
March 18	Spring Break
March 25	Experiment 7- <i>Standing Waves</i>
April 1	Experiment 8 - <i>Mass and Spring Oscillator</i>
April 8	Experiment 9 - <i>Anharmonic Motion</i>
April 15	Experiment 10 - <i>Measuring g with a Pendulum</i>
April 22	Makeup Lab
April 29	Experiment 11 – <i>Second Review (Experiments 7-10)</i>
May 6	Second Practical Exam
May 9	<i>Last day of classes (Thursday)</i>