

University of Maryland - Department of Physics
Fall 2013 Prof. Carter Hall Physics 273/273H

Title: *PHYS 273/273H Introductory Physics: Waves*. Oscillations and AC circuits using complex variables, Fourier series and integrals, waves on strings, sound; electromagnetic waves from Maxwell's equations in differential form; physical optics.

Prerequisites: *PHYS272 (Introductory Physics: Fields), and MATH241 (Calculus III – Multivariable Calculus)*. (MATH 340 is also acceptable.)

Corequisite: *MATH246 (Differential Equations) or MATH414*. (MATH 341 is also acceptable.)

Instructor: Prof. Carter Hall, Room 4211B, Phone: 5-6103, e-mail: crhall@umd.edu.

Office Hours: Mondays and Tuesdays, 10:00 am to 11:00 am, and by appointment. You are also welcome to come to my office without an appointment, however I may not be available.

Schedule: 4 meetings weekly: M,T,W,H..... 9:00 am - 9:50 am (PHYS 1204)

Optional Texts:

- Waves and Oscillations, Walter Fox Smith (2010), ISBN: 978-0-19-539349-1.
- Vibrations and Waves, A.P. French (1971), ISBN 0-393-09936-9.

Website: <http://www.physics.umd.edu/courses/Phys273/Hall-Fall-2013/>

Homework: The homework assignment will be posted on the course website each Thursday. It is the student's responsibility to check the website for the assignment each week. Homework will be collected at the beginning of class each Wednesday except for exam weeks, for a total of 12

homework assignments. The homework problems will be graded on a scale from zero to three: three points if completely correct, two points if mostly correct, one point if mostly incorrect, zero points for entirely incorrect or no answer. No make-up homework will be accepted, but the lowest two homework grades will be dropped when your final grade is calculated. Homework will not be accepted electronically. If you use a computer but you have trouble printing your results, you may copy them by hand.

Exams: We will have two in-class mid-term exams and a final exam. Each mid-term exam will take place over two class periods. The final exam will take place on Thursday December 19th, from 8:00 am to 10:00 am in PHYS 1204.

Undergraduate Peer Tutoring: A tutoring service is available to you provided by undergraduate students who have completed Phys 273. The service can be found in PHYS 1304 Monday through Friday, from 5 pm – 7 pm. The tutors will provide homework help and discuss course material with students at no cost. Please direct questions to Hannalore Gerling-Dunsmore at hannagd@terpmail.umd.edu .

Honors Section: Students enrolled in the honors section (PHYS 273H) will complete an independent study project, the topic of which will be approved by the instructor. The honors section will meet once a month to discuss the status of the student projects. Each honors student will write a final paper and prepare a final presentation to be given to the other honors students at the end of the semester.

Credit: *Phys 273:* Midterms 1 and 2 (20% each), Final exam (30%), homework (30%); *Phys 273H:* Midterms 1 and 2 (15% each), Final exam (25%), homework (25%), honors project (20%).

Grading Scale: A ten-point grading scale will be used to assign final letter grades, with the “-“ and “+” grades reserved for the lowest three and highest three points in each bracket. For example, 87% to 89% will be a B+, 83% to 87% will be a B, and 80% to 83% will be a B-.