

**University of Maryland - Department of Physics**  
**Fall 2019      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).*

**Corequisite:** *PHYS274 (Math Methods I)*

**Instructor:** Prof. Carter Hall, PSC 2114, Phone: 5-6103, e-mail: [crhall@umd.edu](mailto:crhall@umd.edu).

**TA:** Nitzan Hirshberg, [njh@terpmail.umd.edu](mailto:njh@terpmail.umd.edu).

**Office Hours:** You are welcome to stop by my office without an appointment, (however I may not be available); visit me during my regular office hours on Thursdays from 9:00 am to 11:00 am; or make an appointment to meet with me outside of office hours.

**Schedule:** 3 meetings weekly: Tues. and Thurs. H..... 12:30 pm to 1:45 pm and Friday 11:00 am to 11:50 am (PHYS 1410)

**Optional Texts:**

- Our primary “text” will be the typeset lecture notes by David Morin of Harvard University, linked on the course website. These notes follow our course material very well; however they do not contain any problems. I will also post my handwritten lecture notes on the course website.

- Two other texts may be useful, particularly for extra practice problems:

- Vibrations and Waves, by A. P. French, paperback ISBN: 978-0-393-09936-2.
- Waves and Oscillations, Walter Fox Smith (2010), ISBN: 978-0-19-539349-1.

**Website:** <http://www.physics.umd.edu/courses/Phys273/Hall-Fall-2019/>

**ELMS:** Course grades will be post on ELMS; all other course info will be posted on the course website linked above.

**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. Twelve homework assignments will be collected at the beginning of class each Friday (except for the first week and exam weeks, see attached schedule). 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. Your lowest homework grade will be dropped.

Note that:

1. No make-up homework will be accepted, except by prior arrangement with a valid excuse, or in other exceptional cases (such as a medical emergency) in accordance with university policy.
2. Homework will not be accepted electronically; you must submit a hard copy version in class on Friday.
3. Some problems require a printer. If your printer is not working, you may sketch the result onto paper by hand. Printer trouble will not be accepted as a valid excuse for late homework.

**Technology:** In-class use of smart phones, tablets, laptop computers, etc, is discouraged. If you have an educational reason for using a device during class, please come see me.

**Exams:** We will have two in-class mid-term exams and a final exam. The final exam will take place on Monday December 16th, from 1:30 pm to 3:30 pm in PHYS 1410.

**Honors Section:** Information concerning the honors section (273H) will be distributed to enrolled students.

**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-.

**Academic Integrity.** All university policies regarding student rights and obligations, including academic integrity (cheating), are available at: <http://www.ugst.umd.edu/courserelatedpolicies.html>