

**Course title:** Introductory Physics: Waves

**Meeting time:** TuTh, 9:30-10:45 Phys. 1201; F 9:00-9:50, Chem. 0115; Honors section meeting F 4:00-4:50, Phys. 0360.

**Professor:** Chris Lobb, room 1365, Center for Nanophysics and Advanced Materials (Entrance is in the plaza between the Math and Physics buildings.)

[lobb@squid.umd.edu](mailto:lobb@squid.umd.edu)

Office phone: (301) 405-6130

Home phone: (202) 546-0818 (Call between 9 am and 10 pm. Leave a message and phone number if I'm not in; I will return your call.)

**Teaching Assistant:** TBA

**Office Hours:** After class the first week, TBA in subsequent weeks.

**Texts:** *The Physics of Vibrations and Waves*, 6th ed., by H. J. Pain. Recommended books: The introductory texts that you used in Physics 171 and 272.

**Web Site:** [www.elms.umd.edu](http://www.elms.umd.edu)

**Grading:**

- Homework will be posted at elms and will count for approximately 20% of the grade. Homework will be assigned roughly weekly. Homework is due *in the beginning of class*, on days to be announced. You are responsible for obtaining assignments and knowing when the homework is due. Note that changes and corrections to the homework assignment may be made in any class. Late homework will be accepted only if serious problems arise.
- There will be two hour exams, which will each count for approximately 20% of the course grade. The final exam will cover the entire course, and will count for approximately 30% of the course grade. No notes or books will be allowed in the exams. Absence from exams will be dealt with according to standard university policies.
- Unannounced in-class quizzes will count for 10% of the grade. These quizzes will be administered using clickers, so you must bring your clickers to every class, including Fridays. If you don't have your clicker or miss the class, you will lose credit for that quiz.

**Tentative course outline:** 1. Simple and Damped Harmonic Motion, Introduction to Complex Variables [Chs. 1 and 2 ]; Driven Harmonic Motion and AC Circuits [Ch. 3]; Transverse Waves [Ch. 5]; Longitudinal Waves [Ch. 6]; Waves on Transmission Lines [Ch. 7]; Electromagnetic Waves [Ch. 8]; Fourier Methods [Ch. 10]; Wave Optics [Ch. 11 and 12]; The Schrödinger Equation [Ch. 13].

**Exam schedule:** (If there is a snow day during one of the exams, the exam will be given on the next Tuesday or Thursday that the university is open.)

Tuesday, March 1  
Thursday, April 14

First Hour Exam  
Second Hour Exam

**Office hours:** To be arranged to fit your schedules. For the first two weeks of class, I will be in my office for one hour after class. You are *always* welcome to call or drop by.

**Honor section:** Honors students are required to attend a one-hour meeting each week. More information will come to you via e-mail; please reply promptly so that the meeting can be scheduled.

**Advice:**

- The only way to learn anything is to do it; just listening to me, or reading the book, is insufficient.
- Do derivations yourself, do the homework, keep up with the class, ask questions, and come to office hours.
- Avoid the temptation to use online or printed solutions. And, while it is useful for some people to compare their work to others, solve the problems first on your own. *You learn physics by solving problems, not by copying them.*

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“...I haven’t got brains enough to be a pilot; and if I had I wouldn’t have strength to carry them around, unless I went on crutches.’

‘Now drop that! When I say I’ll learn a man the river, I mean it. And you can depend on it, I’ll learn him or kill him!’”

-Mark Twain, *Life on the Mississippi*