PHYS 152: Physics of Sound and Music (Fall 2008)

Instructor: Daniel A. Steck
Office: 277 Willamette  Phone: 346-5313  email: dsteck@uoregon.edu
Office hours: TF 4:00-6:00, and by appointment (best to email first)
Teaching Assistants:
   Ellery Ames  office: WIL 216  office hours: M 2:00-3:00, W 2:30-3:30
   email: ellery@uoregon.edu
   Anthony Clark  office: KLA 135  office hours: Th 2:00-3:00, F 1:00-2:00
   email: aclark@uoregon.edu
Course home page: http://atomoptics.uoregon.edu/~dsteck/teaching/08fall/phys152
This is the primary web site for this course, where news, course notes, etc. will be posted. We will also use the Blackboard system, but only for grades and possibly for online homework.

Schedule: MW 4:00-5:15, 100 Willamette
Course reference number: 14329
Credits: 4
Prerequisites: no course requirements, but see below

Links: news, course notes, homework sets and keys.

Course overview

What exactly is sound? We will study fundamental concepts of harmonic motion, waves, resonance, and adding waves together, and we will apply them to many aspect of sound, including everything from producing, hearing, and recording sound to musical theory, sound effects, and sound quality (timbre).

Required Materials

Calculator: You will need a scientific calculator for this course, and you should plan to bring it to all classes and exams. At minimum, it should be able to calculate sin, cos, exp, and log functions, and of course handle basic arithmetic. Anything satisfying these criteria will do, but for example the Sharp EL531WBBK will work if you want a really cheap one, while the HP 50g will satisfy any cravings your inner nerd might have. There are plenty of choices at the UO bookstore.
i>clicker: You will also need to purchase an i>clicker from the UO bookstore. You will also need to register your clicker on the web at http://www.iclicker.com/registration/ (use your Blackboard user name, the same as your UO Duck ID, and the ID number on the back of the clicker when you register). Contact me immediately if you have problems registering your clicker. You will use this to respond to class polls and to take in-class quizzes (see the grades section below). You should bring your clicker to every class, and I will expect you to obtain and register one prior to the second class meeting.

Text: The (required) textbook for this course is Berg and Stork, The Physics of Sound, 3rd ed. (Pearson Prentice Hall, 2005). This book is not especially cheap, but really is clear and well-written, and at an appropriate level for this course. Feel free to use earlier editions if you can find them for cheap.

Other texts you might find helpful are

- Benade, Fundamentals of Musical Acoustics (ML3805.B328)

These books are on reserve at the Science Library. I highly recommend you consult them for practice problems before exams.

I will also post notes for the course (the slides I show in class) on this course web site. Check the news page for updates on whe