

ME 520, Sections A1 and DL

Acoustics I

FALL 2011 INFO SHEET

- CLASS:** MW 4-6, PHO 201:
- TEXT:** Fundamentals of Physical Acoustics, Blackstock, 1st edition, Wiley, 2000, ISBN 9780471319795
- PROFESSOR:** Glynn Holt rgholt@bu
110 Cummington, Rm 417 353-9594 office
Office hours T, 2-4:00, or by appointment
- GRADING:**
- | | |
|-----|---------------------|
| 40% | (Homework) |
| 40% | (Quizzes and Exams) |
| 20% | Final Exam |
- HOMEWORK:** Homework assignments are given out weekly with a few exceptions. They are due at the BEGINNING of class on the due date listed. LATE HOMEWORK WILL NOT BE ACCEPTED unless circumstances merit the exception.
- EXAMS:** I will give a few 15-20 minute quizzes at the beginning of class. I will give a couple of in-class exams. I will give a comprehensive final exam. "Make-up" exams will rarely be given, and never in the case of prior knowledge of a time conflict (you must arrange to take the test before you are away). A "make-up" quiz will be different from the quiz given in the class, and may be oral.
- The final exam will be comprehensive., and scheduled by the registrar. Study. The final exam is TBD. DO NOT UNDER ANY CIRCUMSTANCE SCHEDULE TRIPS OR FLIGHTS HOME UNTIL AFTER THE OFFICIAL UNIVERSITY EXAM PERIOD. Study.
- DROP DATES:** Pay attention to the University's schedule of drop dates. You cannot drop this course after the last "W" date because of an impending low grade – you will receive your current grade if you drop after the official W date. "Incomplete" grades are reserved for the most extreme of circumstances, and are a NEGOTIATED CONTRACT between the student and myself.
- PREREQUISITES:** ENGME302, ENGME303, ENGME304 & ENGME400, or consent of instructor

COLLABORATION: Homework: Homework is the only collaborative activity in ME520. That being said, you must do your own work, and turn in your own work. However, you are encouraged to consult and collaborate with classmates on general concepts and even specific approaches. (I believe recent research refers to this as “horizontal learning”).

Exams and quizzes: Done individually.

ME520, Section A1, FALL 2011 Syllabus by class

Class	DATES	LECTURE TOPIC	HOMEWORK
1	9/7	Introduction and admin	
2	9/12	Chapter 1; 1.A – 1.C: Wave equation; plane travelling waves	HW 1 (Chapter 1) assigned
3	9/14	Chapter 1; 1.D – 1.E: Spherical and cylindrical waves, signals, levels, impedance, intensity and power	
4	9/19	Quiz 1 (Chapter 1); Chapter 3; 3.A – 3.B: Reflection and Transmission at plane interface	HW1 due; HW2 (3.A-3.D) assigned
5	9/21	Chapter 3; 3.C – 3.D: Examples of reflection/transmission	
6	9/26	Quiz 2 (Chapter 3); Chapter 4; 4.B – 4.C : Termination, lumped elements	HW2 due; HW3 (4.A-4.F) assigned
7	9/28	Chapter 4; 4.D – 4.F: Examples, three-medium problem, wall loss	
8	10/3	Quiz 3 (Chapter 4); Chapter 5; 5.A – 4.B : Oblique transmission in fluids	HW3 due; HW4 (5.A-5.D) assigned
9	10/5	Chapter 5; 5.C – 5.D: Examples, Panel transmission, composite walls	
10	10/12	EXAM 1: Chapters 1 - 5	HW 4 due
11	10/17	Chapter 6; 6.A Vibrating string	HW 5 (6.A – 6.B) assigned
12	10/19	Chapter 6; 6.B Vibrating membrane	
13	10/24	Quiz 4 (6.A – 6.B); Chapter 6; 6.C – 6.D: Rectangular enclosure and waveguide	HW 5 due; HW 6 (6.C – 7.C) assigned
14	10/26	Chapter 7; 7.A – 7.C Horns 1	
15	10/31	Quiz 5 (6.C – 7.C); Chapter 7; 7.D – 7.E: WKB approximation	HW 6 due; HW 7 (7.D – 8.B) assigned
16	11/2	Chapter 8; 8A – 8B: Atmospheric and Oceanic propagation	
17	11/7	Chapter 8; 8C: Ray Theory	HW 7 due; HW 8 (8.C – 9.C) assigned
18	11/9	Chapter 9; 9.A – 9B: Absorption and Dispersion, viscosity and heat conduction	
19	11/14	Chapter 9; 9.C: Relaxation	
20	11/16	Chapter 9; 9.D: Boundary layers	HW 8 due; HW 9 (9.D – 9.E) assigned
21	11/21	Chapter 9; 9.E: Summary and examples of absorption	
22	11/28	NO CLASS	

23	11/30	EXAM 2: Chapters 6 - 9	HW 9 due
24	12/5	Special Topic 1	HW 7 (special topics) assigned
25	12/7	Special Topic 2	
26	12/12	Special Topic 3	HW7 due
27	TBD	FINAL EXAM	