

ME 508 – Engineering Acoustics, Fall 2009

Catalog Data: 508 Engineering Acoustics G 4

Fundamentals of acoustic energy generation, radiation and transmission (both aerodynamically and structurally). Theoretical, experimental and numerical techniques. Applications spanning from 1-D plane waves to more complex 3-D problems.

Instructor: Thomas J. Royston, Professor, Mechanical & Industrial Engineering, troyston@uic.edu

Unofficial TA: Can (Jon) Meral (fmeral2@uic.edu, tel: 413-0470, Office hours: TBD)

Time & Place: MW 1 – 2:15 PM, 3280 SEL

Textbook: Allan D. Pierce, **Acoustics - An Introduction to its Physical Principles and Applications**, 1989
Acoustical Society of America
Price: ASA members \$33; Nonmembers \$54
<http://asa.aip.org/publications.html#pub05>

Call #: 29578

Prerequisites: ME 408 or CME 435 or Permission of Instructor

Topics Covered (with approximate lecture hours of coverage):

- I) The Wave Theory of Sound ~ 7.5 hours
- II) Quantitative Measures of Sound ~ 3 hours
- III) One Dimensional (Plane) Wave Guides & Applications ~ 10.5 hours
- IV) Cavity (Duct and Room) Acoustics: 3D Waves ~ 4.5 hours
- IV) Spherical Waves and Sources ~ 4.5 hours
- V) Waves in Solids ~ 6 hours

(36 hrs shown + 7.5 hrs review & exams = 43.5 hours. ...1 holiday leaves 43.5 hrs in semester)

Grading:

Homework - <i>assigned in class - due week later beginning of class</i>	25 %
Exam #1 - Week 7, <i>Wednesday, October 7</i> - on material covered through Week 6	20 %
Exam #2 - Week 13, <i>Wednesday, November 18</i> - on material covered through Week 12	20 %
Final Exam – Cumulative	35 %

Fall Semester 2009

August 24, M	Instruction begins
August 24, M	Last day to cancel registration with a 100% refund of tuition and fees.
September 4, F	Last day to complete late registration; last day to add a course(s) or make section changes; last day to drop individual courses without receiving W (Withdrawn) grade on academic record via <i>Student Self-Service</i> .
September 7, M	Labor Day holiday. No classes.
October 2, F	Last day for undergraduate students to use optional late drop in college office and receive grade of W on academic record.
November 26–27, Th–F	Thanksgiving holiday. No classes.
December 4, F	Instruction ends.