

The University of Texas at Austin

**EE/ME 384N-3: Electromechanical Transducers
TTH 9.30am – 11am. ECJ 1.316, Fall 2019**

Instructor: Professor N.A. Hall, nahall@mail.utexas.edu

Office Hours: EER 4.802, Time TBD

Unique Numbers: ME 18230, EE 16775

Required Text: None

Optional Texts: Acoustics: Sound Fields and Transducers by Leo L. Beranek (Author), Tim Mellow (Author). This text is available free on-line at the www.library.utexas.edu.

Introduction to Electroacoustics and Audio Amplifier Design, 4th edition, by W. Leach. This book can be ordered at www.kendallhunt.com. Additional material will be taken from handbooks, scholarly papers and other sources and posted on Canvas.

Course Objective: To develop techniques for modeling, analyzing, and designing electromechanical transducers used in acoustics and vibration applications.

Topics:

- circuit concepts in acoustical, electrical and mechanical systems
- electromechanical transducers including loudspeakers and geophones
- loudspeaker enclosures
- piezoelectric materials and devices including accelerometers and microphones
- circuit, wave, and multiport theory
- energy conversion
- measurements in electrical, mechanical and acoustical systems

Grading: 40% Homework (~5 assignments and 2 labs)
30% Midterm
30% Final Exam

The final exam schedule is determined by the University and cannot be changed. Attendance will not be taken. The Plus/Minus system will be used when assigning final grades.

Evaluations: Course/instructor evaluations will be distributed during the last week of class.

Disabilities: UT provides upon request appropriate academic accommodations for qualified students with disabilities. Please contact Office of Dean of Students at 471-6259 or ssd@uts.cc.utexas.edu.