THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Engineering Acoustics

MECHENG 5241

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Acoustics applications survey. Wave propagation phenomena. Introduction to human hearing. Mathematics review. Acoustic wave equation, propagation, and metrics. Instrumentation for and evaluation of acoustic measurements. Understanding acoustic sources and sound radiation characteristics. Introductory architectural acoustics, engineering noise control, and psychoacoustics.

Prerequisites and Co-requisites:
Prereq: 3260, or Grad standing, or permission of instructor.

Course Goals / Objectives:
- Introduce fundamental concepts of acoustical system analysis and design
- Understand linear wave propagation phenomena, including radiation, absorption, and transmission of sound from and through simple structures/materials and in enclosures/rooms, and learn about human perception of these wave propagation behaviors
- Acquire essential knowledge and skills to participate in fundamental practices of engineering noise control, architectural acoustics, and acoustic transducer development
- Explore introductory aspects of diverse acoustics applications, ranging from those of the arts, the life sciences, the earth sciences, and throughout engineering

Course Topics:

- Acoustics
- Wave propagation
- Hearing
- Acoustic measurements
- Noise control
- Acoustic sources
- Sound radiation
- Architectural acoustics
- Psychoacoustics and sound perception

Designation:

Elective