

EOC 3306 - ACOUSTICS FOR OCEAN ENGINEERS
ABET Course Syllabus

1. **Course number and name:** EOC 3306 - Acoustics for Ocean Engineers
2. **Credits and contact hours:** 3 credits / Two 80-minute lectures each week
3. **Instructor's or course coordinator's name:** Dr. Tom Lawrence
4. **Text book, title, author, and year:**

Required: Professor Glegg's "An Introduction to Engineering Acoustics (for Ocean Engineers) which will be provided on Canvas.

Recommended: Fundamentals of Acoustics, 4th edition, Kinsler, Frey, Coppens and Sanders, 1999.
5. **Specific course information:**
 - (a) Brief description of the content of the course (catalog description): The course deals with fundamentals of acoustics, sound propagation in fluids; speech, hearing, noise, architectural acoustics, loudspeakers, microphones, transducers, underwater sound transmission.
 - (b) Prerequisites: EGM 4045, EOC 3130L (all with a grade of C or above).
 - (c) indicate whether a required, elective, or selected elective course in the program: Required
6. **Specific goals for the course:**
 - (a) Specific outcomes of instruction (course specific objective): The objective of the course is to introduce the principles of underwater and airborne acoustics, provide a practical working knowledge of acoustics through problem solving, computer projects, provide the fundamental knowledge needed for the design of acoustic systems, provide practice using the computer as an everyday engineering tool, and provide basic understanding of professional and ethical responsibility.
 - (b) Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course. The learning outcomes of the course (and related ABET Criterion 3) outcomes are:
 1. An ability to apply the knowledge of mathematics for formulation and analysis of acoustics problems (1)
 2. A thorough knowledge of the basic properties of sound propagation and mechanisms of sound generation (1)
 3. An ability to calculate sound levels (1)
 4. A ability to write simple computer codes (1)
 5. An understanding of professional and ethical responsibility (4)
7. **Brief list of topics to be covered:**
 - Introduction to acoustics.
 - Wave Equation for Compressible Fluids.
 - Transmission & Reflection.
 - Radiation, beam patterns.
 - Absorption.
 - Subjective Measures of Sound.