

# P6317 Ocean Acoustics (Winter 2017)

## Outline

**Text: Acoustical Oceanography, Medwin and Clay**

- Background
  - ocean environment
  - sound propagation
- Basic Equations
  - wave equation
  - approximations
  - linear theory
  - sonar equation
  - ray tracing
  - wave guides
- Applications
  - echosounding systems
  - propagation systems (scintillation, ocean thermometry)
  - hydroacoustics
  - Doppler sonar
- Instrumentation
  - transducers and hydrophones
  - practical design considerations

Useful Reference Texts:

- 1 Clay and Medwin (1977 and 1998): Acoustical Oceanography.
- 2 Officer (1957): Introduction to the theory of sound transmission.
- 3 Burdic (1991 and 1984): Underwater Acoustic System Analysis.
- 4 Urick (1975): Principles of Underwater Sound.
- 5 Pierce (1981): Acoustics; An Introduction to its Physical Principles and Applications.