

Syllabus: SIO 200B – OCEAN ACOUSTICS AND SIGNAL PROCESSING II

W. A. Kuperman

Course Description: This is the second of a three-quarter sequence on ocean acoustics and signal processing. The material will cover basic ocean acoustics, computation modeling, signal processing and analysis of experimental data. The homework assignments will be a sequence of 10 mini- projects. The class meets three times a week plus there will be problem session/workshops. Prerequisites are General Physics with Calculus, Math through differential equations and linear algebra. Some knowledge of MATLAB is helpful.

This second quarter includes:

1. Finite difference normal mode modeling
2. Introduction to Matched Field Processing
3. Split Step Parabolic Equation Model
4. Robust Methods in Array Processing
5. Pade Parabolic Equation Solution
6. Introduction to Noise Modeling
7. Generating Noise and Data Snapshot realizations