Course Information

Instructor

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Teaching Assistants

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Time: T7T8R7

Room: Delta Building 210

Course Description

1. Purpose:

   Adaptive signal processing, especially adaptive filtering, has found various applications in areas of communications, control, radar, sonar, seismology, and biomedical engineering. This course provides fundamentals, mathematical theory, and useful techniques for analysis and design of adaptive filters.

2. Course Outline:
   (1) General Introduction
   (2) Random Signal Analysis
   (3) Optimal Signal Processing
   (4) Introduction to Adaptive Filtering
   (5) Adaptive Signal Processing: Algorithms and Structures
   (6) Applications of Adaptive Filtering

3. Prerequisite: None

Course Materials: Handouts

References

1. P. M. Clarkson, *Optimal and Adaptive Signal Processing*. Boca Raton, FL: CRC Press, 1993.
2. B. Widrow and S. D. Stearns, *Adaptive Signal Processing*. Upper Saddle River, NJ: Prentice-Hall, 1985.
3. S. Haykin, *Adaptive Filter Theory*, 5th ed. Harlow, Essex: Pearson Education Limited, 2014.
4. D. G. Manolakis, V. K. Ingle, and S. M. Kogon, *Statistical and Adaptive Signal Processing*. Singapore: McGraw-Hill, 2000.

Grading Policy: Midterm 40%, Homework 30%, and Term Project 30%