

ECE 864 – Spring 2006

DETECTION & ESTIMATION THEORY

Instructor: Karim G. Oweiss, Ph.D. (koweiss@msu.edu)

Office: Rm. 2216 EB; Tel.: (517) 432-8137

Class Schedule: M W F 12:40 PM – 1:30 PM, Room 3400 EB

Office Hours: M W 4.30 PM – 5:30 PM (Rm. 2216 EB)

Textbooks: 1- Required: *Introduction to Statistical Signal Processing with Applications*,
M.D. Srinath, P.K. Rajasekaran & R. Viswanathan, Prentice Hall, 1996

2- Recommended: *Detection, Estimation, and Modulation Theory, Part I*
Harry L. Van Trees, John Wiley, October 2001

Webpage: The primary web site is through the ANGEL® Course Management System, which can be reached at <http://angel.msu.edu> (Login with your Pilot ID and password). A link to the quick start guide is provided at http://www.msu.edu/service/lcttp/trainers/angeldocs/MSU_Student_Guide.pdf

Course Outline

Topic	Reading Assignment	No. of lectures
1. Introduction	Chapter 2	3
2. Detection Theory & Hypothesis Testing	Chapter 3	9
3. Detection of Signals in Noise	Chapter 4	9
4. Estimation Theory	Chapter 5	6
5. Linear Estimation of Waveforms	Chapter 6	5
6. Optimum Filtering	Chapter 6	5
7. Applications	Chapters 7-9	6

Grading

- Homework assignments worth **20%**
- One 90-min. exam *in class* worth **25%**
- One **TAKE HOME** exam worth **25%**
- One **on-line** quiz (**10%**) and **Take Home** Exam (**20%**)

Exams: All exams are Open Book, Open Notes

Exam #	Topics covered	Date
1	1-3	Monday, Feb. 27 th
2	4-5	Monday, Mar. 27 th , Due Wednesday Mar. 29 th
3	6-7	Friday, April 28 th , Due Monday May 1 st

Homeworks

- You're allowed to consult with other students, but the final work you submit should be **your OWN**. Identical assignments will receive a **ZERO** grade.
- Late Homeworks will **NOT** be accepted unless under severe circumstances (e.g.: sick days).
- Some Homeworks may require MATLAB.