

ECE 6540: Estimation Theory

Fall 2011

- **Lectures:** Wednesday and Fridays 1:25 PM - 2:45 PM in WEB L120
- **Instructor:** Tolga Tasdizen
 - Email: tolga@sci.utah.edu
 - Office: WEB 3887
 - Office Hours: TBA
- **Required Text:**
 - Fundamentals of Statistical Signal Processing, Volume I: Estimation Theory
 - Author: Steven M. Kay
 - Publisher: Prentice Hall, Upper Saddle River, NJ 07458
 - ISBN: 0-13-345711-7
- **Prerequisites:** ECE 5510 (Random Processes) and ECE 5530 (Digital Signal Processing) OR strong background in probability and some background in signal processing (linear systems).
- **Course topics:**
 - Unbiased estimation, minimum variance unbiased estimation, Cramer-Rao error bound, linear estimators, maximum likelihood estimation, least squares, Bayesian estimation. We will cover most of Chapters 1-12 from the textbook.
 - We will talk about some applications, but theory will be our main focus.
- **Grading:**
 - Distribution of points:

Homeworks	40%
Your lowest exam score out of 3 exams	10%
The other two exam scores out of 3 exams	2 × 25%
 - I will grade on a curve so there are no predetermined cut-offs except you are guaranteed the following grades: 93% = A and 90% = A-. The % required for A and A- may be lowered (but not raised) depending on the curve.
- **Exams:**
 - Exams will be held on the following dates.
 - * Midterms: Wednesday **October 5** and Wednesday **November 11** during class time.
 - * Final exam: Thursday, **December 15**, 1 pm- 3 pm in the regular classroom.

- Please make sure you have no conflicts with the exam dates. Make up exams will be administered only for exceptional circumstances.
- **Homeworks:** Most homework questions will be written, though there will be a couple of simple MATLAB exercises as well. Understanding the solutions will be key to doing well on the exams.
- **Course web site:** <http://www.ece.utah.edu/~ece6540/>
 - I will also post my notes on the webpage, but not everything I write on the board or talk about is guaranteed to be in the posted notes. So you should take notes during class.
 - Textbook reading assignments to accompany the lectures will be regularly posted on the website.
 - Homeworks will be made available on the website on the day they are handed out in class.
- **Email:**
 - I will send important notices to the entire class using the CIS class mailer. This email goes to your utah.edu address by default. Make sure you receive and regularly (daily) read email from this address.
 - If you email me, I will strive to answer it in a timely manner (within 24 hours not including holidays and weekends). However, please do not expect a reply within the next hour. While I might sometimes reply that fast, there is no guarantee.
- **Cheating Policy:** Students are expected to pursue the highest standards of academic honesty in all assignments and examinations. Don't cheat! The following rules apply to this class:
 - Copying someone else's work on an exam is considered cheating. Don't pass any papers to anyone for any reason during the exam. Do NOT sit near your study partners during the exam.
 - Copying someone else's work on a homework is considered cheating. Copying from a webpage or other source without giving a reference is considered plagiarism which is a form of cheating. You are encouraged to discuss homework problems with each other, but the written work you turn in must be original and your own.
- **Equal Access:** The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the instructor and to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD) to make arrangements for accommodations.