

**FALL 2009 : ELEC 8420: Detection And Estimation Theory**  
TTh 11:00 AM –12:15 PM Broun 306

**Instructor:** Prof. J.K. Tugnait 313 Broun, 4-1846, tugnajk@eng.auburn.edu  
Office Hours: MWF 10:30 – 11:50 AM, MWF 2:00 – 3:00 PM;  
e-mail for appointment at other times.

**Textbook:** B.C. Levy, *Principles of Signal Detection and Parameter Estimation*, Springer 2008.

**Ref.:** H.L. Van Trees, *Detection, Estimation And Modulation Theory, Part I*, Wiley, 1968.  
M.D. Srinath, P.K. Rajasekaran & R. Viswanathan, *Introduction to Statistical Signal Processing with Applications*, Prentice-Hall, 1996.  
H.V. Poor, *An Introduction To Signal Detection And Estimation*, 2nd ed., Springer, 1996.

**Web Site:** <http://www.eng.auburn.edu//users/tugnajk/>  
All posted notes are in “microsoft windows journal file” format.

**Grading Basis:**

Homework :	30 %	
Midterm :	30 %	( Oct. 1, 2009, Thursday)
Final :	40 %	( Dec. 10, 2009, Thursday, 12:00 noon)

**TEXT COVERAGE**

- Detection: Chapters 2,5,7,8,9.
- Estimation: Chapters 4 + notes.

**ELEC 8420. Detection And Estimation Theory (3).** Lec. 3. Pr., ELEC 7410. Decision theory concepts: Bayesian, maximum likelihood, minimax and Neyman-Pearson approaches to hypothesis testing; Detection of deterministic and random signals in noise; Parameter estimation: Bayesian and maximum likelihood approaches, nonrandom and random parameter estimation; Signal estimation.