

ECE 331
Spring 2004
Review for Exam-2
(Exam on Thursday, May 6, 1:00-2:15 IN CLASS)

• **Reading list for Exam-2**

1. **Chapter 4**

- Cumulative distribution functions (CDF's) for continuous RV's
- CDF's for discrete random variables
- Mixed random variables
- Calculating PDF's and CDF's of functions of RV's
- Properties of CDF's

2. **Chapter 5**

- Parameter estimation, types of estimators and their properties
- Confidence Intervals for the mean - both known and unknown variances

3. **Chapter 7**

- Random processes, characterization using mean and correlation functions
- WSS processes
- WSS processes through LTI systems - analysis
- Power spectral density (PSD) for WSS processes
- Characterization of correlation functions
- Matched and Wiener Filters (omit the causal wiener filter)

4. **Chapter 10 - only Discrete markov chains**

- Definition of a markov chain
- Transition probabilities, state space, transition diagram and transition matrix
- Chapman-kolmogorov equation and stationary distributions
- Time-reversibility

• **Suggested Review Problems**

1. 4.5, 4.6, 4.12, 4.24
2. 5.3(ignore the matlab part), 5.12, 5.17
3. 7.1, 7.9(a,b), 7.19, 7.33, 7.43
4. 10.2, 10.4, work solved examples in the text