332: 347 — Fall 1999

Experiments in Linear Systems and Signals

Experiment # 1: Signals in Linear Systems
This experiment is given in Section 2.4 of the textbook, pages 49–50.
Hint: Get familiar with MATLAB functions and programs given in the textbook on pages 34 and 46–47 (Example 2.10).

Experiment # 2: Linear System Frequency Domain Analysis
This experiment is given in Section 3.5 of the textbook, page 103.
Hint: Read Sections 3.1 and 3.3 from the textbook.

Experiment #3: Linear System Response via Laplace Transform
This experiment is given in Section 4.4 of the textbook, pages 143–144. Hint: Read Section 4.3 and pay attention to Examples 4.13–4.17. You have to both understand their analytical solutions (also useful for Exam 2) and their numerical MATLAB solutions.

Experiment #4: Convolution
This experiment is given in Section 6.6. Perform *only* Part 1 (i) and Part 2 (i) in Section 6.6.1 and *only* Part 1 (i), (ii) and Part 2 (i), (ii) in Section 6.6.2, pages 220–223. Read carefully Section 6.5 of the textbook. On page 218, a MATLAB program for convolution is given. You may use that program or write your own program. For certain problems in this experiment the program on page 218 has to be slightly modified.

Experiment # 5: State Space Analysis
The experiment is given in Section 8.7.2, Parts 2, 3, and 4, pages 347–349.

LAB REPORTS FOR ALL EXPERIMENTS are due in two weeks.

Experiments #4 and #5 are very closely related the final exam material.