Syllabus

ECE 220: Signals and Systems I – Spring 2009
Department of Electrical and Computer Engineering
George Mason University
Start Date - January 22, 2009

Instructor: Dr. Joseph L. Hibey
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Office: Science and Technology II, Room 235
Phone: 703-993-1569 (ECE office)
Office Hours: Tuesday 4:30-5:30 pm
Thursday 4:30-5:30 pm


Recitation & Lab: Each meets once a week, and is designed to complement course material.

Course TA: TBA

Homework: Assigned weekly and due the following week. Working in small groups is encouraged. Will comprise a maximum of 20% of final grade, where the actual percentage will be weighted by performance on two in class exams.

Exams: One midterm exam, Tuesday, March 3, and one final exam, Thursday, May 7, will be administered in class. Each is closed-book, closed-notes. Students unable to attend on the announced date because of illness, business travel, or an emergency, must notify instructor before the exam and provide written justification (such as a doctor’s note, a copy of travel documents, etc.).

Grading: Lab: 20%
Homework: 20%
Midterm exam: 30%
Final exam: 30%
Tentative Class Schedule

Week 1: Introduction and background review; basic signals and signal operations

Week 2: System properties; LTI systems and convolution integral

Week 3: Graphical convolution; LTI system properties

Week 4: Differential equations; singularity functions

Week 5: Eigenfunctions; Laplace transform

Week 6: Laplace transform properties; inverse Laplace transform

Week 7: Midterm exam

Week 8: Problem solving with Laplace transforms

Week 9: Fourier series and their properties

Week 10: LTI response to periodic inputs; Fourier series convergence

Week 11: Fourier transforms and their properties

Week 12: Convolution and multiplication properties; frequency analysis of LTI systems

Week 13: Ideal and practical filters; Bode plots

Week 14: Pole-zero plots and frequency response; LTI system analysis

Final Exam