Syllabus

ECE 201: Introduction to Signal Analysis
Department of Electrical and Computer Engineering
George Mason University
Fall 2009

Instructor: Dr. Joseph L. Hibey
E-mail: jhibey@gmu.edu
Office: Engineering Building, Room 3707, 3708
Phone: 703-993-1569 (ECE office)
Office Hours: Tuesday 2:00-3:00 pm
Thursday 2:00-3:00 pm

Required Text: DSP First – A Multimedia Approach

Lab: Meets once a week, and designed to complement course material.

Course TA: Maninder P. Singh

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 and one final exam 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 test 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

Sept. 1: Introduction to DSP; Sinusoids; sampling and plotting using MATLAB
Sept. 8: Complex exponentials; phasors
Sept. 15: Spectrum representation; periodic waveforms
Sept. 22: Sampling and aliasing; interpolation
Sept. 29: FIR filters; impulse response; convolution
Oct. 6: Linear time-invariant (LTI) systems; superposition
Oct. 13: Columbus Day Observance – no class
Oct. 15: Midterm Exam
Oct. 20: Frequency response; steady-state response; transient response
Oct. 27: Plotting frequency response; lowpass filters; cascaded systems
Nov. 3: z-Transforms; block diagrams
Nov. 10: System functions; poles and zeros; running-sum filter
Nov. 17: IIR filters; step response; block diagram structures
Nov. 24: BIBO stability
Nov. 26: Thanksgiving Day – no class
Dec. 1: Inverse z-transform and partial fractions
Dec. 8: Second-order filters
Dec. 15: Final Exam