

Introduction to Signal Analysis

ECE 201

Fall 2007

Instructor Dr. B.-Peter Paris

S & T II Room 227

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Time and Place Monday and Wednesday, 3:00-4:15pm, Enterprise Hall, room 178.

Office Hours Tuesday 3:00-4:00 pm and Wednesday 1:30-2:30 pm or by appointment.

Required Textbook J.H. McClellan, R.W. Schafer, and Mark A. Yoder, *DSP First-A Multimedia Approach*, Prentice Hall, 1997.

Lab Three lab sections meet once a week in Science&Tech I. Lab experiments are designed and intended to complement material discussed in class. Students are expected to be well prepared for the lab sessions to maximize the use of time in the lab.

Recommended Further Reading *The Student Edition of MATLAB*.

Homework will be assigned every week and is due the following week. You are encouraged to work on the assignments in small groups.

One Midterm Exam and a Final Exam will be given during the semester. Make-up exams are rarely given. In case of an emergency, contact the instructor as soon as possible and always *before* the exam. Failure to take an exam, will result in no credit for the exam.

All exams are conducted under the rules and regulations of the **Honor Code** (see University Catalog).

Teaching Assistant Keerat Brar (kbrar@gmu.edu)

On-line Class Material Class and lab material will be distributed electronically via the World-Wide Web. Use a browser to find the ECE 201 homepage at URL:

<http://www.spec.gmu.edu/~pparis/classes/ece201.html>. I will also correspond with you through your Mason e-mail account - check your e-mail regularly.

Final Grades are determined by a weighted average of homeworks, projects, exams, and labs in the following manner:

Homework and in-class work	20%
Midterm Exam	20%
Final Exam	40%
Labs	20%

Tentative Class Schedule

Week 1: Introduction to DSP; Sinusoids

Week 2: Sinusoids; Introduction to MATLAB

Week 3-4: Complex Numbers; MATLAB plotting and programming

Week 5: Complex Exponential Signals and Phasors; MATLAB programming and file I/O

Week 6: Phasor Addition Rule

Week 7: Review and Midterm Exam

Week 8: Frequency domain and spectrum representation of signals

Week 9: Beat Notes and amplitude modulation.

Week 10-11: Sampling and Aliasing

Week 12: Introduction to FIR filters and convolution

Week 13: Convolution and linearity and time-invariance

Week 14: Superposition and frequency response

Monday December 17, 1:30–4:15pm: Final Exam