# Introduction to Signal Analysis

ECE 201

Summer 2014

**Instructor** Dr. B.-Peter Paris
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**Time and Place** Tuesday and Thursday, 5/20-6/24, 7:00-9:40 pm and Saturday, 5/31, 6/7, 6/14, and 6/21, 9:00 am-11:40 am, Engineering Building, room 1505.

**Office Hours** Tuesday and Thursday 3:00-4:00 pm.

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

**Lab** One lab sections meets Tuesdays and Thursdays before class and Saturdays after class in Engineering Building, room 1505. 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 class and is due the following class. You are encouraged to work on the assignments in small groups.

**Multiple Quizzes, one Midterm Exam and a Final Exam** will be given during the semester. Quizzes will not be announced and are given at the beginning of class.

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** Neshat Etemadi Rad (netemadi@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`. Additionally, selected class material will be posted on Blackboard.

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:

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

## Tentative Class Schedule

**5/20:** Introduction to DSP; Sinusoids

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**5/27:** Complex Numbers;

**5/29:** Complex Algebra;

**5/31:** Complex Exponential Signals and Phasors;

**6/3:** Phasor Addition Rule

**6/5:** Midterm Exam

**6/7:** Frequency domain and spectrum representation of signals

**6/10:** Beat Notes and amplitude modulation.

**6/12:** Sampling and Aliasing

**6/14:** Introduction to FIR filters and convolution

**6/17:** Convolution and linearity and time-invariance

**6/19:** Frequency Response

**6/21:** Superposition and frequency response

**6/24 7:00 pm – 9:45 pm:** Final Exam