ENEE 322  
SIGNAL AND SYSTEM THEORY (0201, 0202)  
Fall 2004  
Lecture: MWF 11, EGR 2107  
Recitations: Thursday 8:00 (0201), Thursday 11:00 (0202)  
(Recitation sections will not meet the first week of class.)

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Class web site (syllabus, homework assignments, exam announcements, etc.)  
www.ee.umd.edu/courses

Very interesting demos: www.jhu.edu/~signals/

**Exams and Homework**

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<tr>
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<th>Time</th>
<th>Percent of Grade</th>
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<tbody>
<tr>
<td>EXAM 1</td>
<td>1/3 way through (Ch 1, 2)</td>
<td>25</td>
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<tr>
<td>EXAM 2</td>
<td>2/3 way through (Ch 3, 4)</td>
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<tr>
<td>FINAL EXAM</td>
<td>Wednesday, December 15, 8–10 AM</td>
<td>40</td>
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<tr>
<td>Homework</td>
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Note: All exams are closed book.

**Homework Procedure**

Homework problems related to the material just covered in class will usually be assigned each week. Homework assignments are due at the beginning of the next class. Please fold your assignments the long way and put your name and section on the outside top. Graded homeworks will be returned in the recitation sections. Solutions will be discussed in the recitation sections and written solutions to all problems will be distributed.

*No late homework will be accepted. However, the two lowest scores will be dropped.*

**COURSE OUTLINE**

**Chapter 1** Signals and Systems

- Continuous and Discrete-Time Signals
- Special signal types: exponentials, sinusoids, impulses, steps
- Continuous and Discrete-Time Systems
- Basic System Properties

**Chapter 2** Linear Time-Invariant Systems

- The convolution sum for discrete-time systems
- The convolution integral for continuous-time systems
- Properties of linear time-invariant systems
- Systems described by differential and difference equations

**Chapter 3 Fourier Series Representation of Periodic Signals**
- Sinusoidal steady-state response
- Representation of periodic signals by trigonometric series (Fourier series)
- Properties of continuous-time Fourier series
- Continuous and discrete-time filtering

**Chapter 4 The Continuous-Time Fourier Transform**
- Definition of the Fourier transform and its inverse
- Properties of the transform
- The convolution and multiplication theorems

**Chapter 7 Sampling (If time permits.)**
- Uniform sampling
- The Sampling Theorem
- Aliasing
- Decimation and interpolation

**Chapter 9 The Laplace Transform**
- Definition
- Region of convergence
- Properties
- Analysis of LTI systems
- Solution of differential equations

**Chapter 10 The z-Transform**
- Definition
- Region of convergence
- Inversion
- Basic properties
- Solution of difference equations

**Chapters 5, 6, 8 and 11 Selected Topics as Time Permits**