Instructor: Dr. Vishal M. Patel  
Office: AVW 4415  
Telephone: 301-405-1735  
E-mail: pvishalm@umd.edu  
Class Web Sites:  
http://www.umiacs.umd.edu/~pvishalm/Teaching  
http://bb.eng.umd.edu  
Office Hours: Mon 9:30-10:30, Fri 9:30-10:30, or by appointment  

Teaching Assistants:  

<table>
<thead>
<tr>
<th>Section</th>
<th>Recitation: W 9:00am-9:50am</th>
<th>Section: 0202</th>
<th>Recitation: W 10:00am-10:50am</th>
<th>Section: 0203</th>
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<tr>
<td>Location</td>
<td>EGR 1102</td>
<td>Location: EGR 3102</td>
<td>Location: EGR 3114</td>
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<tr>
<td>TA Name</td>
<td>Boyu Lu</td>
<td>TA Name: Sikai Qu</td>
<td>TA Name: Alex Mentch</td>
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<td>Email</td>
<td><a href="mailto:ustclby@gmail.com">ustclby@gmail.com</a></td>
<td>Email: <a href="mailto:skqu@umd.edu">skqu@umd.edu</a></td>
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<td>Office</td>
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<td>Office: AVW 1145</td>
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<tr>
<td>Office Hours</td>
<td>Mon 5:00-6:00</td>
<td>Office Hours: Tue 11:00-12:00</td>
<td>Office Hours: Tue 10:00-11:00</td>
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Prerequisites: ENEE204 or ENEE205, MATH246 and completion of all lower division technical courses in the curriculum.

Homework: There will be approximately 12 homework assignments. No late homework will be accepted. However, the two lowest scores will be dropped. Homework is due at the beginning of class on the date indicated. It is important that you do the homework in order to understand the material in the course.

Recitations: During recitations your TA will go over solutions to selected homework problems. In addition, recitations provide you with an opportunity to ask clarifying questions regarding material or concepts presented in lecture. The style of the recitations will be rather interactive, so your participation is both encouraged and important.

Exams: There will be two exams during the semester and a comprehensive final exam. All exams will be closed book. The exact material to be covered on each exam will be announced about one week before the exam date.

Course Grade:  
Homework: 20%  
EXAM 1: 25% Thursday, Oct. 11, 2012  
EXAM 2: 25% Tuesday, Nov. 20, 2012  
Final Exam: 30% Monday, Dec. 17, 2012 (10:30am-12:30pm)

Academic Honesty: Students are expected to follow university guidelines.

Disabilities: If you have a disability, you should contact Dr. Patel at your earliest convenience.
COURSE OUTLINE

1. Signals and Systems (Chapter 1)
   - Continuous and discrete-time signals
   - Special signal types: exponentials, sinusoids, impulses, steps
   - Continuous and discrete-time systems
   - Basic system properties

2. Linear Time-Invariant Systems (Chapter 2)
   - 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

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

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

5. The Discrete-Time Fourier Transform (Chapter 5)
   - Definition
   - Properties
   - The convolution and multiplication theorems

6. The Laplace Transform (Chapter 9)
   - Definition
   - Region of convergence
   - Properties
   - Analysis of LTI systems
   - Solution of differential equations

7. The z-Transform (Chapter 10)
   - Definition
   - Region of convergence
   - Inversion
   - Basic properties
   - Solution of difference equations

8. Advanced topics (if time permits)
   - Wavelets
   - Sampling
   - Compressive sampling
   - Time-frequency distributions