

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Department of Electrical Engineering and Computer Science

**6.003 Signals and Systems – Fall 2010**

General Information

**6.003 STAFF**

**Lecturer:**

Prof. Jae S. Lim  
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**Recitation Instructors:**

Prof. Elfar Adalsteinsson  
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Prof. Edmund Lam  
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**Head TA:**

Harley Zhang  
Room 32-044  
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**Teaching Assistants:**

Tony Kim  
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**Course Secretary:**

Cindy LeBlanc  
Room 36-647  
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**Course Handouts:**

Lecture notes and problem sets will be handed out during lectures. These are not available through the 6.003 web page. All other handouts such as problem set solutions will be available through the 6.003 web page. Handouts not picked up during lectures can be found in the filing cabinet located in the lobby of the sixth floor in Building 36.

**6.003 Home Page and Mailing List:**

The URL of the 6.003 Home Page is:

<http://web.mit.edu/6.003/www>

This is a standard stellar website and will be used to distribute information to you. If you find out that you do not appear on its membership list after the first week of classes, please contact Harley Zhang, [hhzhang@mit.edu](mailto:hhzhang@mit.edu).

**Course Prerequisites:** 6.02

**Course Text:**

A.V. Oppenheim and A.S. Willsky, with S.H. Nawab, *Signals and Systems*, Prentice-Hall, Second Edition, 1997.

Text can be purchased at the MIT Coop at Kendall, 3 Cambridge Center, Cambridge, MA

**Lectures, Recitations, and Tutorials:**

Lectures: Tuesday and Thursday, 12-1, Room 34-101

Recitations: Wednesday and Friday at the following times:

Section	Time	Room	Recitation Instructor
R01	10-11	34-301	Prof. Elfar Adalsteinsson
R02	11-12	34-301	Prof. Elfar Adalsteinsson
R03	1-2	34-301	Prof. Edmund Lam
R04	2-3	34-301	Prof. Edmund Lam

Tutorials: To be scheduled. These will begin on Monday, September 13, 2010.

NOTE: Please see the section on Scheduling. We will be assigning recitations and tutorials today. You should attend the recitation and tutorial to which you have been assigned.

## Scheduling:

**Recitations** – Please fill out the Schedule Information Sheet and hand it in **TODAY**. In order to balance recitation sections, some students will be rescheduled. Please check the schedule information prior to going to recitation tomorrow. This information will be posted by this evening on the 6.003 Home Page.

**Tutorials** – Each week you will have a Tutorial taught by a TA. The room number and time of your Tutorial will be posted on the 6.003 webpage by Friday, September 10, 2010. These Tutorials occur on Mondays and Tuesdays. Please attend the recitation and tutorial to which you have been assigned. If you have a question or concern about the assigned recitation or tutorial, or if your name does not appear on the schedule, please contact Harley Zhang, [lh Zhang@mit.edu](mailto:lh Zhang@mit.edu).

**TA Office Hours:** You can go to any of the three TAs for help during their office hours.  
Room 32-044 – Thursdays – 4:00P.M. – 6:00 P.M. – Tony Kim  
5:00 P.M. – 7:00 P.M. – Harley Zhang  
6:00 P.M. – 8:00 P.M. – Shih-Yu Sun

## Homework:

1. Problem sets will be issued approximately once a week during the lecture. They are collected during the recitations on the due date.
2. Problem sets will be graded. Results will contribute to your final grade.
3. Problem sets handed in late will not be accepted.
4. Students are encouraged to work together on homework and learn from each other. The discussions should be limited to understanding the course material, the meaning of the homework problems, and approaches to solving problems. Students should not copy any part of the solutions from other students.

## Examinations:

Quiz #1: Tuesday, October 19<sup>th</sup>, 7:30 – 9:30 P.M., Walker Memorial (Room 50-340)

Quiz #2: Tuesday, November 16<sup>th</sup>, 7:30 – 9:30 P.M., Walker Memorial (Room 50-340)

Final Examination: To be scheduled during Final Exam week.

## Grading:

Problem sets	- 15%
Quiz #1	- 20%
Quiz #2	- 20%
Final Examination	- 45%
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Total	- 100%

This will be the basis for your final grade in the course.

## **Overall Outline:**

### Introduction

1. Signals
2. Systems
3. Continuous-time Fourier Transform
4. Communication Systems
5. Discrete-Time Fourier Transform
6. Sampling
7. Applications of Discrete-Time Signal Processing
8. Fourier Series Representation
9. Laplace Transform
10. Feedback Systems
11. Z-Transform

## Issue and Due dates for Problem Sets

	DATE	CLASS	HANDOUT	DUE
<b>W</b>	8-Sep	R1		
<b>R</b>	9-Sep	L1	PS #1	
<b>F</b>	10-Sep	R2		
<b>T</b>	14-Sep	L2		
<b>W</b>	15-Sep	R3		
<b>R</b>	16-Sep	L3	PS #2	
<b>F</b>	17-Sep	R4		PS#1
<b>T</b>	21-Sep	L4		
<b>W</b>	22-Sep	R5		
<b>R</b>	23-Sep	L5	PS #3	
<b>F</b>	24-Sep	R6		PS #2
<b>T</b>	28-Sep	L6		
<b>W</b>	29-Sep	R7		
<b>R</b>	30-Sep	L7	PS #4	
<b>F</b>	01-Oct	R8		PS #3
<b>T</b>	5-Oct	L8		
<b>W</b>	6-Oct	R9		
<b>R</b>	7-Oct	L9	PS #5	
<b>F</b>	8-Oct	R10		PS #4

	DATE	CLASS	HANDOUT	DUE
T	12-Oct	L10		
W	13-Oct	R11		
R	14-Oct	L11		
F	15-Oct	R12		

T	19-Oct	<b>Quiz 1</b>		
W	20-Oct	R13		
R	21-Oct	L12	PS #6	
F	22-Oct	R14		PS #5

T	26-Oct	L13		
W	27-Oct	R15		
R	28-Oct	L14	PS #7	
F	29-Oct	R16		PS #6

T	02-Nov	L15		
W	03-Nov	R17		
R	04-Nov	L16	PS#8	
F	05-Nov	R18		PS #7

T	9-Nov	L17		
W	10-Nov	R19		
R	11-Nov		Veteran's Day Holiday	
F	12-Nov	R20		

	<b>DATE</b>	<b>CLASS</b>	<b>HANDOUT</b>	<b>DUE</b>
<b>T</b>	16-Nov	<b>Quiz 2</b>		
<b>W</b>	17-Nov	R21		
<b>R</b>	18-Nov	L18	PS #9	
<b>F</b>	19-Nov	R22		PS #8

<b>T</b>	23-Nov	L19		
<b>W</b>	24-Nov	R23		
<b>R</b>	25-Nov	<b>HOLIDAY</b>		
<b>F</b>	26-Nov	<b>HOLIDAY</b>		

<b>T</b>	30-Nov	L20		
<b>W</b>	01-Dec	R24		
<b>R</b>	02-Dec	L21	PS #10	
<b>F</b>	03-Dec	R25		PS #9

<b>T</b>	7-Dec	L22		
<b>W</b>	8-Dec	R26		
<b>R</b>	9-Dec	L23		
<b>F</b>				