EE 3133: Networks III

Time: MWF — 9:00 AM to 9:50 AM
Place: 213 Simrall

Textbook: R.E. Ziemer, W.H. Tranter, and D.R. Fannin, *Signals and Systems: Continuous and Discrete* (Third Edition), MacMillan Publishing Company, 1993

Reference: D.C. Hanselman and B.L. Littlefield, *Mastering MATLAB: A Comprehensive Tutorial and Reference*, 1/e, Prentice-Hall, 1996, 542 pp., ISBN: 0-13-191594-0 (http://www.prenhall.com)

Instructor: Joseph Picone (picone@isip.msstate.edu)
Office: 413 Simrall
Office Hours: MWF 8-9 AM, 10-11 AM (other times by appointment)
URL: http://www.isip.msstate.edu/resources/courses/ece_3133

Grading Policies:

Course Notes	5%
Textbook Homework	10%
Computer Assignments	10%
Exams (3)	50%
Final Exam	25%

Each student will keep two notebooks. The first will contain his/her course notes. The second will contain the solutions to all homework problems. These notebooks will be graded at any time during the semester at the instructor's discretion. I expect you to keep these notebooks up to date on a daily basis. These must consist of original handwritten documents (no photocopies are allowed). Special accommodations will be made for those using portable computers.

Homework and notes are graded on the following scale:

Acceptable job	10
Unacceptable job	5
Why are you in this course?	0

Obviously, grading of the notes and homework assignments is subjective. Suffice it to say that a prerequisite to receiving a full score is that the notebooks be neat, well-organized, and complete.

Homework solutions will be posted outside of my office.

Computer Projects:

We use MATLAB in this course as part of an overall departmental philosophy of adopting MATLAB as our primary computer simulation tool for signals and systems analysis. Hence, a series of homework assignments based on MATLAB will be assigned. You are expected to keep a directory in your home directory on the ECE Unix computers containing your solutions as follows:

Prob. #1	Filename:	$HOME/ece_3133/solution_01.m
Prob. #2	Filename:	$HOME/ece_3133/solution_02.m

Note that this does not require you to use a Unix computer to solve the problem — it simply defines the place where the grader will look to grade your assignments. Each week, you will meet with the grader and demonstrate your solution. You must be prepared to answer questions about your solution.

If you do not have a permanent Unix computer account, contact the ECE Sys Admin ASAP.

Exams:

Exams are closed books and notes. You will be allowed one 8 1/2” x 11” double-sided sheet of paper containing notes. For the final, you will be allowed three such sheets of paper (typically the ones you used for the semester exams).

Attendance:

You are expected to be in your seat ready to go when class begins. An attendance notebook will be posted at the front of the room. You are expected to sign in BEFORE class begins. Late arrivals do not receive any partial credit.

Attendance does not figure directly into your grade. However, historically students who do not attend class regularly do not do well in this class. Further, most students end up with a grade on a borderline at the end of the semester. In this case, I use attendance and classroom participation to determine the final grade.

There is no attendance requirement for this class.

Unexcused absences are not tolerated, and automatically receive zero credit. To obtain an excused absence, you must have an extremely good reason, send me a request via email, and have me reply with an approval by email prior to the exam or class. The reward for this harsh policy is that exams will generally be graded and returned by the next class.

Lect. No.	Date MWF	Date TTH	Reading Sects.	Lecture Topic
1	1/7		1.1	Introduction
2	1/9		1.2	Signal Models
3	1/12		1.3	Delta Functions
4	1/14		1.4,1.5	Energy/Power Signals
5	1/16		2.1, 2.2	Modeling Concepts
6	1/21		2.3, 2.4	Superposition
7	1/23		2.5 - 2.10	Impulse Response
8	1/26		3.1 - 3.3	Trigonometric Fourier Series
9	1/28		3.4, 3.5	Exponential Fourier Series
10	1/30		3.6, 3.7	Parseval's Theorem
11	2/2		3.8 - 3.11	Signal Spaces
12	2/4		4.1 - 4.3	Fourier Transform
13	2/6		4.4 - 4.6	Fourier Transform
14	2/9		4.7	Theorems/Transform Pairs
15	2/11		4.8, 4.9	Steady State Response
16	**2/13**		**Exam No. 1**	**Chapters 1-3**
17	2/16		4.10, 4.12	More Transform Pairs
18	2/18		5.1, 5.2	Laplace Transform
19	2/20		5.4	Theorems
20	2/23		5.5, 5.6	Inverse Transform
21	2/25		6.1	Networks w/ Laplace
22	2/27		6.2	Circuit Examples
23	3/2		6.3	Loop/Node Analysis
24	3/4		6.4	Frequency Response
25	3/6		6.5	Stability
26	3/16		6.6	Bode Plots
27	3/18		6.7, 6.8	Block Diagrams
28	3/20		7.1, 7.2	Nyquist
29	3/23		7.3, 7.4	Nyquist
30	**3/25**		**Exam No. 2**	**Chapters 4-6**
31	3/27		7.5, 7.6	State Variable Concepts
32	3/30		7.7	State Equation Solutions
33	4/1		7.8	State Transition Matrix
34	4/3		7.9	Transfer Functions
35	4/6		8.1	Discrete-Time Signals and Systems
36	4/8		8.1	A/D Conversion
37	4/13		8.2	Sampled Data Reconstruction
38	4/15		8.2	D/A Conversion
39	4/17		8.3	Z-Transform
40	4/20		8.4	Inverse Z-Transform
41	4/22		8.5	Discrete Convolution
42	**4/24**		**Exam No. 3**	**Chapters 7-8**
43	4/27		8.5, 9.1, 9.2	Difference Equations and Digital Filters
44	4/29		8.6	Frequency Response
45	5/1		10.1 - 10.5	The Discrete Fourier Transform
46	**5/6**		**Final 8-11 AM**	**Cumulative**

Homework Assignments:

Chapter	Problems	Due
1	7,8,9,11,22,26,29,33,38,41	1/16
2	5,7,10,11,13,14,16,17,18,20	1/23
3	4,5,12,14,16,18,19,25,28,29	2/6
4	1,2,4,6,8,16,20,25,28,32	2/13
5	1,2,3,4,7,8,13,19,28,32	2/20
6	1,4,7,10,11,19,25,30,31,33	3/6
7	1,2,5,6,9,11,16,17,21,23	4/3
8	1,2,3,5,13,20,29,43,44,60	4/17
9	4,7,21	5/1
10	1,2	5/1

Computer Assignments: due each Friday starting with January 16.