

EE 321/521-(4.0) – Linear System I

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Textbook: — B. P. Lathi, Signal Processing and Linear Systems, Oxford University Press, 1998.

Prerequisites: — EE 301-302/501-502 (with a grade “D” or better)

Topics: — Linear System I provides students an introductory, yet comprehensive, treatment of continuous-time systems and signals that commonly appear in Electro-mechanical, Control Systems, Communication Systems, and various other disciplines. The primary topics covered in the course are the following,

- Basics of signal and system models and representations - both in time and frequency domains (**Chapter 1**)
- Response of Linear systems - both mechanical and electrical, when the input is an Impulse, Step or a sinusoid signal (**Chapter 2**)
- Analysis of Zero-input, zero-state and Total responses in the time domain. (**Chapter 2**)
- Three classical frequency domain representations: Laplace Transform, (**Chapter 6**) Fourier Transform (**Chapter 4**) and Fourier Series (**Chapter 3**)
- Solution of Differential Equations in time domain (classical approach) (**Chapter 2**) and frequency domain (algebraic approach using Laplace Transform, which is simpler than the classical approach) (**Chapter 6**)
- Analysis of systems using Transfer Function and Frequency Response - Bode Plots (**Chapter 6, Chapter 7**)
- Convolution of Continuous time systems (**Chapter 2**)

Grading policy:

Mid-term I : (Sept. 30, 2004, 12:20-2:00 PM)	20%
Mid-term II : (Oct. 28, 2004, 12:20-2:00 PM)	20%
Final Exam (Comprehensive): (Nov. 16, 2004, 1:00-3:00 PM)	35%
In-Class 10-minute Quizzes (approx. 1 per week)	5 %
Computer experiments:	10%
Home work (lowest marks will be dropped):	10%
NOTE: If the total score is less than 50%, the final grade will be <i>F</i> !!	

Other Information

- No make-up examination will be given unless the student has received permission from the instructor prior to the examination or has experienced some emergency beyond control!!
- Students are permitted to use a self-prepared study guide (Formulas, Tables etc.) during the exams. Please do not bring in solved problems, steps or procedures to solve exam problems.
- Homework will be assigned and graded regularly and the solutions will be posted in the EE Department on the due date. Hence, late submissions will not be graded.
- Students are expected to work out all the assignments independently and turn in his/her works on due dates noted in the Syllabus.
- Each student will get a computer account on the GAMMA machine to perform the computer experiments.
- The students are expected to make use of the posted office hours to have their academic difficulties resolved. Students are also welcome at other times. However, please call beforehand to make sure the Instructor is available.
- The instructor is responsible to provide only the first Mid-term exam grade before the final drop date.

Office Hours

Tues	Thur
9:30–10:30 AM	9:30–10:30 AM