Istanbul Technical University
Department of Computer Engineering
TEL252E - Signals And Systems
Spring 2008

Instructor: Asst.Prof.Dr. Mustafa Kamasak
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Course TA: Cagatay Talay
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Lecture Schedule: 2106 - Thursday 14:00-17:00

Class Web Site: http://www.ninova.itu.edu.tr/

Textbook: Oppenheim, A. V., and A. S. Willsky, with S. H. Nawab. Signals and Systems. 2nd ed. New Jersey: Prentice-Hall, 1997. ISBN: 0138147574.

Computation of Final Grade:

Homeworks	7.5 %	
Quizes	$2 \times 7.5 = 15$ %	March 20 April 24
Midterm	35 %	April 10
Final	42.5 %	TBA

Tentative Lecture Schedule

Week 1	Introduction
Week 2	Continuous-Time and Discrete-Time Signals and Systems. System Properties. Singular functions.
Week 3	Convolution. Periodic Signals.
Week 4	Continuous- and Discrete-Time Fourier Series.
Week 5	Continuous-Time Fourier Transform.
Week 6	Continuous-Time Fourier Transform (cont.). Discrete-Time Fourier Transform.
Week 7	Discrete-Time Fourier Transform (cont.).
Week 8	First and Second Order Continuous- and Discrete-Time Systems. Ideal and Non-Ideal Filters.
Week 9	Midterm Exam
Week 10	Sampling. Impulse-Train Sampling. Sampling Theorem and Aliasing. Zero and First Order Hold. Analog-to-Digital and Digital-to-Analog Conversions.
Week 11	Laplace Transforms, Unilateral and Bilateral z-Transforms, Region of Convergence (ROC). The relationships between Laplace Transform, (Continuous and Discrete) Fourier Transforms and z-Transform.
Week 12	Transfer Functions using the Laplace- and z-Transforms, Pole-Zero Plot in s- and z-planes, Stability.
Week 13	Constant Coefficient Linear Differential and Difference Equations.
Week 14	Block Diagram Representation of Continuous- and Discrete-Time Systems. Direct Form, Series and Cascade Filter Realizations. Feedback Structure in s-Domain.