EE345S Real-Time Digital Signal Processing Lab

(Spring 2006)

Lecture:	TTH 5:00-6:30 PM in ENS 115
Instructor:	Prof. Güner Arslan, ENS 620B, 471-9914, arslan@ece.utexas.edu
Office Hours:	W 5:00-7:00 PM
TA Office Hours:	Alex Olson, TBD, aolson@ece.utexas.edu, Ahmad Sheikh, TBD, asheikh@ece.utexas.edu, Daifeng Wang, TBD, dfwang@mail.utexas.edu
Lab Sections (ENS 252B):	T 7:00 PM-10:00 PM (Olson), W 9:00 AM-12:00 PM (Olson), W 12:00 PM-3:00 PM (Sheikh), W 7:00 PM-10:00 PM (Wang), TH 7:00 PM-10:00 PM (Sheikh)
Course Web Page:	http://signal.ece.utexas.edu/~arslan/courses/realtime

This course covers basic discrete-time signal processing concepts and gives hands-on experience in translating these concepts into real-time digital communications software.

Prerequisites

EE 319K Intro. to Microcontrollers and EE 438 Electronics I, and credit or registration for EE 333T Eng. Communication and EE 351K Probability, Statistics, Random Processes.

Topical Outline

digital signal processing - signals, sampling, filters, quantization, data converters;
digital communications - modulation, pulse shaping, pseudo noise, wireline transceivers;
digital signal processors - special addressing modes, parallel instructions, pipelining

Required Texts

1. Steven A. Tretter, *Communication System Design Using DSP Algorithms with Laboratory Experiments for the TMS320C6701 and TMS320C6711*, Kluwer Academic/Plenum Press, ISBN 0-306-47429-8, March 2003. Corrections and code at http://www.ece.umd.edu/~tretter.

2. C. Richard Johnson, Jr., and William A. Sethares, *Telecommunication Breakdown*, Prentice Hall, ISBN 0-13-143047-5, 2004.

Supplemental Texts

1. B. P. Lathi, *Linear Systems and Signals*, Cambridge Press, ISBN 0195151291, 2001.

2. James H. McClellan, Ronald W. Schafer, and Mark A. Yoder, *DSP First: A Multimedia Approach*, Prentice-Hall, ISBN 0-13-243171-8, 1998. On-line Multimedia CD ROM.

Grading

10% Homework, 15% Quiz #1, 15% Quiz #2, 60% Laboratory. Attendance in scheduled laboratory sessions is mandatory. Attendance in lecture is highly encouraged.

Discussion of homework questions is encouraged. Please be sure to submit your own independent homework solution. Late homework assignments will not be accepted.

College of Engineering Drop/Add Policy

The Dean must approve adding or dropping courses after the fourth class day of the semester.

Students with Disabilities

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY or the College of Engineering Director of Students with Disabilities at 471-4382.