EE4361-001
Introduction to Digital Signal Processing
(Fall 2013)

Course No: EE4361 **Section:** 001
Prerequisites: EE3302 **Credit Hours:** 3
Class Time-Schedule: Tue,Thu, 2:30PM – 3:45PM **Classroom:** ECSN 2.110

Instructor: Dr. Issa Panahi
Office Location: ECSN 4.214
Office Hours: Tue, Thu, 12:30PM– 1:30PM
Telephone: 972-883-2784
Email: issa.panahi@utdallas.edu

Teaching Assistant: TBD
Office Location:
Office Hours:
Telephone:
Email:

Course description: This course presents an introduction to analysis and design of discrete linear time invariant signal sand systems. The course includes selected topics on time and frequency domain approaches to discrete signals and systems, Z-transform, Fourier-transform, Discrete Fourier Transform and its computation (FFT), structure and design of digital filters. Chapters 1 through 5 and some selected topics from Chapter 6 (FFTs), 7, and 8 of the Textbook will be covered.

Textbook: "DIGITAL SIGNAL PROCESSING, Principles, Algorithms, and Applications", 4th Edition, by John G. Proakis, and Dimitris G. Manolakis, Prentice Hall 2007.
ISBN: 0 - 13 – 187374-1

Assignments: Coursework includes textbook problems. Some small project may be given. LabVIEW software package and tools will be introduced for use in the project assignments in addition to MATLAB. All assignments must be turned in by the due date. Late assignment will not be accepted and will receive zero credit and score.

Exams: There will be one midterm exam, one final exam, and **random** quizzes in class. Exams and quizzes must be taken by every student. No exam should be missed. There will be no makeup or repeated exam or quizzes. In class quizzes/short tests may be given during lecture sessions.

Grading: Final grade of the course will include (i) Average grade of the HW assignments (5%), (ii) Average of quizzes (25%), (iii) Midterm exam (30%), and (iv) Final exam including project (if any), (40%) .

Dates: Final Exam date is what the school determines. Midterm Exam date will be announced in class. Quizzes are given randomly with no prior notice in class.

Requirement: Please turn off and do not use your mobile phones, laptop, PDA, or other personal electronic devices during the lecture sessions or exams. Use of any such devices requires prior permission from the instructor.

Course Objectives and Outcomes:

Objectives	***Outcomes***
* Analysis and design of Linear Time-Invariant(LTI) signals and systems in time domain.	a, b, c
* Analysis and design of LTI signals and systems using Z-Transform.	b, c
* Analysis and design of LTI signal and systems in frequency doamin (Fourier Transforms).	a,b,c
* Elementary filter structures and implementations.	b,c
* Analysis and design of LTI signals and systems on digital computers using Discrete Fourier Transform (DFT) and FFT.	a,b,c,d
* Project and technical report.	d,e,f

a. an ability to understand concepts in theory of electrical engineering;
b. an ability to understand concepts in applications of electrical engineering;
c. an ability to apply knowledge of electrical engineering to formulate and analyze problems in engineering;
d. an ability to learn emerging concepts in theory and applications of electrical engineering;
e. an ability to design and conduct experiments as well as to analyze and interpret data;
f. an ability to communicate effectively.