EE448A – Digital Signal Processing

Text

References

Instructor
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Class Times & Location
6:15 – 8:45 B430

Grader
See class website.

Office Hours
See class website

Grading
Homework and Matlab Projects 15%
Quizzes 15%
Midterm Exam: 35%
Final Exam: 35%

Prerequisites
EE348 System Theory

Contents
Time-domain characterizations: basic operations and classifications of discrete-time (DT) signals; basic sequences; sampling; DT systems properties; impulse response, linear convolution, and difference equations. Transform-domain characterizations: DTFT, DFT, Z-transform and properties; circular convolution; linear convolution by DFT/FFT; pole-zero locations versus causality and stability; and partial-fraction expansion; Transform-domain analysis of LTI systems: frequency response, magnitude, phase and group delays; transfer functions; ideal filters; linear-phase FIR filters; simple standard FIR and IIR filters; comb filters; all-pass filters; minimum-phase and maximum phase; inverse systems. Digital Processing of continuous-time signals: sampling theorem, reconstruction, and analog filters. Digital filter design: bilinear transform, and window method.

Holidays
No class on Feb 16 (make-up class on Feb 17) and Mar 16 (Spring Break)

Policies
Homework/projects will be assigned on a regular basis. Attendance will be checked randomly. No late work will be accepted. No make-up exams/quizzes will be given (unless under inevitable circumstances, e.g., serious illness with doctor’s proof, etc.). Minimum grade for quizzes, homework, or projects will not be dropped from your final grade. You are responsible for all assignments, changes of assignments, announcements of exam dates, and other course-related events announced in class or sent through e-mail.