Stevens Institute of Technology
Department of Electrical and Computer Engineering

COURSE OUTLINE

EE/CpE548 – Digital Signal Processing

Text

References

Instructor
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Office Hours
See class website

Grading
Homework and projects 15%
Quizzes 15%
Midterm Exam: 35%
Final Exam: 35%
All assignments, projects and exams count; none will be dropped from your final grade.

Contents
Basic sequences, operations, and properties; impulse response, linear convolution; DTFT, frequency response, phase and group delay; DFT, circular convolution; Z-transform, partial-fraction expansion, transfer functions, complementary transfer functions, algebraic stability test; linear phase, minimum phase filters, allpass filter; sampling of baseband and bandpass signals; Butterworth, Chebyshev, and elliptic approximations, analog filter design; digital filter structures, direct, cascade, parallel, and transposed forms, allpass structures, tunable IIR filters, IIR tapped cascade lattice structures, FIR cascade structures; IIF filter design, bilinear and spectral transformations; FIR filter design by windowing method, Remez algorithm; spectral analysis of sinusoidal and non-stationary signals, spectral resolution, short-time Fourier transform, spectrogram.

Holidays
No class on Sept. 1 (Labor Day) and Oct. 13 (Fall Recess). Make-up class on Oct. 14 (Monday Schedule).

Miscellaneous
Homework and computer projects will be assigned and collected on a regular basis; certain of these problems will be graded and/or discussed. No late work will be accepted. 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.