EE111: Signal-Processing Systems and Transforms

Fall 2020

Instructor: Prof. P. P. Vaidyanathan

Syllabus

1) Discrete-time signals and systems
2) Different types of discrete-time systems
3) Linear time invariant (LTI) systems and digital filters
4) Properties of LTI systems
5) z-transforms and discrete-time Fourier transforms
6) Examples of FIR andf IIR digital filters
7) Difference equations, nonzero initial conditions, and applications
8) State space representations for discrete-time systems
9) Transients and steady states
10) Various interpretations of poles and zeros
11) Brief review of continuous-time Fourier transform
12) Bandlimited signals
13) Sampling theory, Nyquist sampling, and non bandlimited sampling
14) Fast Fourier Transform and other fast computational methods