

Department	Electrical and Computer Engineering
Course Number	EELE 308
Course Title	Signals and Systems Analysis
Total Credit Hours and Format	3 Credits. (3 Lec) F
Catalog Description	PREREQUISITE: EELE 203, M 273 Discrete- and continuous-time signals and systems. Properties, application, synthesis and analysis for convolution, the CT and DT Fourier Series, the continuous and discrete Fourier transform, the DTFT, z and Laplace transform. Applications in differential and difference equations, sampling, and engineering data analysis.
Faculty Coordinator	Joe Shaw
Course Designation	Required
Textbook	Signals and Systems, Oppenheim, Willsky, and Hamid, 1996
Course Learning Outcomes	At the conclusion of EELE 308, students are expected to be able to: 1) understand that signals and system responses can be represented in both time and frequency domains; 2) apply convolution to determine the response of a linear time-invariant system; 3) apply the Fourier transform to determine the output of a linear time-invariant system for a given input; 4) apply the continuous-time and discrete-time Fourier transforms to engineering data analysis problems; 5) properly shift and scale time- and frequency-domain signals; 6) understand properties of periodic signals and apply Fourier series methods; 7) understand sampling in the time and frequency domain; 8) understand basic relationships of Fourier, Laplace and Z transforms.
Program Outcomes	a. ability to apply knowledge of mathematics, science, and engineering e. ability to identify, formulate, and solve engineering problems k. ability to use the techniques, skills, and modern engineering tools necessary for engineering practice r. ability to analyze and synthesize electronic devices and electrical systems
Topics Covered	1. Introduction to signals and systems 2. Linear, time-invariant systems 3. Fourier series representation of periodic signals 4. Continuous-time Fourier transform 5. Discrete-time Fourier transform 6. Time & frequency characterization of signals and systems 7. Sampling 8. Laplace transform 9. Z transform

Prepared by	Joe Shaw (04/29/2015)
--------------------	-----------------------