Course Syllabus	**EECS 3210 – Signals and Systems**
Credits & Contact Hours	3 credit hours & 150 minutes lecture contact hours per week.
Coordinator	Dr. Devinder Kaur
Textbook	Signals and Systems, Simon Haykin and Barry Van Veen, 2nd edition, Wiley 2005.
Course Information	Signals and system representation. Convolution and impulse response. Fourier series, Fourier transform, and Laplace transform. State variable analysis of continuous and discrete systems. Digital computer simulation using MATLAB. Prerequisites: EECS 2300 and MATH 2860 and MATH 2890 Required course
Specific Goals-Student Learning Objectives (SLO)	The students will be able to 1. Represent and Classify signal and systems 2. Represent and apply singularity functions. 3. Obtain the response of a continuous, linear, time-invariant, causal system by using convolution. 4. Obtain the Fourier series expansion of a periodic signal and apply it to continuous, linear, time-invariant systems. 5. Obtain and plot the Fourier transform for simple aperiodic continuous-time signals. 6. Utilize the Laplace transform method to solve continuous, linear, time-invariant systems and to obtain transfer functions. 7. Analyze continuous, linear time-invariant systems using state variable formulation and solve the resulting state equations. 8. Convert a continuous-time signal to the discrete-time domain and reconstruct it using the sampling theorem. 9. Utilize the *z*-transform method to solve linear discrete-time systems and to obtain transfer functions. 10. Use MATLAB software to implement the signal processing and system analysis.
Topics	1. Signal representation. 2. System classification. 3. Singularity functions. 4. Convolution. 5. Fourier series and applications to electric circuits.

6. Fourier transforms.
7. Nyquist sampling theorem
8. Fourier analysis of discrete systems.
9. Laplace transforms, transfer functions and applications to electric circuits.
10. Discrete-time systems and Z-transforms.
11. Digital computer simulation using MATLAB.