2304205-Signals & Systems Lab												
Programme & Branch		B. Tech - ECE	Sem Category		L	Т	P	Credits				
Prerequisites		Nil	4	Professional Core	0	0	3	1.5				
Prea	mble	In this Lab, the student will acquire hands-on experience with programming in MATLAB. MATLAB programming will enable them to provide real-time scenario to understand the theory behind signals and systems as well as validate the theory with real-word examples.										
1	List of Experiments: 1 Write a program to plot the following continuous time and discrete time signals. i. Step Function ii. Impulse Function iii. Exponential Function iv. Ramp Function											
2 3	v. Sine Function Write a program to perform arithmetic operations: addition, subtraction and multiplication on continuous-time signals. Write a program to perform amplitude-scaling, time-scaling and time shifting on a given signal											
4 5	Write a program to find Energy and Power of a given signal.Write a program to find the trigonometric and exponential Fourier series coefficients of a											
6	Write to find Fourier Transform of a given signal and plot its Magnitude and Phase Spectrum.											
7	 Write a program i) To find the Laplace Transform of a given signal. ii) To find the inverse Laplace Transform of a given transfer function. 											
8	Write a program to compute and plot the impulse response and pole-zero diagram of transfer function using Laplace transform.											
9	Write a program to compute the linear convolution of continuous-time signals.											
10	Write a program to compute auto correlation between two continuous-time signals.											
11	Write a program to verify the sampling theorem											
12	wine a pr			1.			To)tal: 30hrs				

Refe	References/Manuals/Software: MATLAB / SCI Lab / Equivalent Industrial Standard Licensed						
simulation software tool.							
1	Text Book: Signals and system using MATLAB, Luis F. Chaparro.						
2	Laboratory Manual						
3	Virtual Labs link						

COURS	BT Mapped				
On comp	(Highest Level)				
CO 1	Generate and characterize various continuous and discrete time	L2			
	signals.				
CO 2	Perform basic arithmetic operations on the signals.	L3			
CO 3	Analyze the spectral characteristics of signals using Fourier analysis.	L4			
CO4	Analyze system characteristics using Laplace transform.	L4			
CO5	Compute convolution and correlation between signals and verify sampling theorem.	L5			

Mapping of COs with POs and PSO:

COs/PO	PO	PO	PO	PSO	PSO									
S	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-1	-2
CO 1	3	1	-	-	2	-	-	-	1	-	-	-	3	3
CO 2	3	2	-	-	2	-	-	-	1	-	-	-	3	3
CO 3	3	2	1	1	2	-	-	-	1	-	-	-	3	3
CO 4	3	3	1	1	2	-	-	-	1	-	-	-	3	3
CO 5	3	3	1	1	2	-	-	-	1	-	-	-	3	3
1 – Slight, 2 – Moderate, 3 – Substantial														