



Maharaja Agrasen Institute of Technology

(Approved by AICTE & Affiliated to GGSIP University, New Delhi)

PSP area, Plot No.-1 Sector-22, Rohini, New Delhi – 110085

Ph.No. : 011-27582095 , 65151162/63 , 65162001

Website: www.mait.ac.in

Department of Electrical & Electronics Engineering Circuits and Systems(EEC208)

ACADEMIC PLAN FOR SEMESTER-V 2022

S.No.	TOPICS TO BE COVERED	Total No.ofLectures (42)	CO
UNIT-I(Signals & Systems)			
1	Introduction to signals and systems, their types, and real-world applications.	2	CO1
2	Exploring LTI systems, their characteristics, and the Laplace transform's role in continuous-time LTI systems.	2	
3	Understanding discrete-time LTI systems and the z-transform as a tool for their analysis.	2	
4	Introduction to Fourier series, continuous and discrete Fourier transforms, and their properties for signal and system analysis.	2	
5	Exploring state-space representation for systems, transition to state-space form, and solving state-space equations for system analysis.	2	
UNIT-II (Transient Analysis)			
6	Understanding the basics of system modeling using differential equations for R, L, C, series, and parallel circuits.	2	CO2
7	Analyzing the transient response of circuits to impulse and step signals using classical methods and differential equations.	2	
8	Extending analysis to transient response for ramp and sinusoidal signals using classical methods and differential equations.	2	
9	Exploring the transient response of circuits to exponential signals using classical methods and differential equations.	2	
10	Applying Laplace transform techniques to analyze the transient response of R, L, C, series, and parallel circuits for various input signals (impulse, step, ramp, sinusoidal, and exponential).	3	
After Mid Term			
UNIT-III(AC Circuits)			
11	Introduction to AC circuits, including circuits with capacitors and inductors.	1	CO3
12	Understanding transient response and the concept of phasors in AC circuits.	1	
13	Exploring impedance and admittance in AC circuits, along with mesh, loop, and nodal analysis.	3	
14	Introduction to Thevenin's and Norton's theorems, Y-Delta and Delta-Y transformations, and bridge circuits.	3	
15	Covering resonant circuits, complex frequency, network functions,	2	

	and two-port networks, as well as passive filters.		
UNIT-IV(Graph Theory&Two-Port Networks)			
16	Graph Theory in Network Analysis	3	CO4
17	Two-Port Networks and Introduction to Two-Port Parameters	2	
18	relation between image impedances and short circuit and open circuit impedances	2	
19	Network Functions, Properties, and Impedance Transformation	2	
20	Hurwitz Polynomial and Network Stability	1	

Course Outcomes.

C.206.1	Ability to understand properties of signal and system.
C.206.2	Ability to determine transient response of circuit.
C.206.3	Ability to solve AC circuit.
C.206.4	Ability to determine two port parameter and transfer function.