







Department of Electrical & Electronics Engineering

Lesson Plan & Work-done Diary for AY:2024-25, ODD Semester

	Course with	a Code: Analog Electronic Circuits –BEE303			Faculty: Pray	een Kumar M	Semester &	Section: III
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
					MODULI	E-1	<u> </u>	
1		Diode Circuits : Basics, V-I Characteristics, Rectifier	ICT					
2		Diode clipping circuits, Diode clamping circuits.	ICT					
3		Transistor Biasing and Stabilization: The operating point, load line analysis DC analysis and design of fixed bias circuit	ICT + Chalk & Talk					
4		Emitter stabilized bias circuit, Collector to base bias circuit	Chalk & Talk					
5		Voltage divider bias circuit, Modified DC bias with voltage feedback, Numerical solving	Chalk & Talk					
6		Bias stabilization and stability factors for fixed bias circuit, Numerical solving	Chalk & Talk					
7		Collector to base bias circuit and voltage divider bias circuit, bias compensation, Transistor switching circuits, Numerical solving	ICT + Chalk & Talk					
8		Collector to base bias circuit and voltage divider bias circuit, bias compensation, Transistor switching circuits, Numerical solving	Chalk & Talk					

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					MODUL	E-2			
9		Transistor at Low Frequencies: Hybrid model, H-parameters for CE, CC and CB modes	ICT						
10		Mid-band analysis of single stage amplifier, Simplified hybrid model.	ICT						
11		Analysis for CE, CB and CC(emitter voltage follower circuit) modes, Numerical solving.	Chalk & Talk						
12		Millers Theorem and its dual, analysis for collector to base bias circuit and CE with un bypassed emitter resistance	ICT + Chalk & Talk						
13		Transistor frequency response: General frequency considerations, Effect of various capacitors on frequency response	Chalk & Talk						
14		Miller effect capacitance, high frequency response, hybrid - pi model,	Chalk & Talk						
15		CE short circuit current gain using hybrid-pi model,	Chalk & Talk						
16		Multistage frequency effects Numerical Solving & VTU QP discussion	ICT + Chalk & Talk						

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	MODULE 3										
17		Module-3: Multistage amplifiers: Cascade connection,.	Chalk & Talk								
18		Analysis for CE-CC mode, CE-CE mode	Chalk & Talk								
19		CASCODE stage-unbypassed and bypassed emitter resistance modes.	ICT								
20		Darlington connection using h-parameter model.	ICT+ Chalk & Talk								
21		Feedback Amplifiers: Classification of feedback amplifiers, concept of feedback, general characteristics of negative feedback amplifiers	Chalk & Talk								
22		Input and output resistance with feedback of various feedback amplifiers	Chalk & Talk								
23		Input and output resistance with feedback of various feedback amplifiers	ICT+ Chalk & Talk								
24		Analysis of different practical feedback amplifier circuits	ICT+ Chalk & Talk								

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					MODULI	Ε 4	·		
25		Module-4: Power Amplifiers: Classification of power amplifiers, Analysis of class A amplifiers,.	ICT + Chalk & Talk						
26		Analysis of Class B amplifiers.	ICT + Chalk & Talk						
27		Analysis of Class C and Class AB amplifiers.	Chalk & Talk						
28		Distortion in power amplifiers, second harmonic distortion, harmonic distortion in Class B amplifiers, cross over distortion and elimination of cross over distortion	Chalk & Talk						
29		Oscillators: Concept of positive feedback, frequency of oscillation for RC phase oscillator,	Chalk & Talk						
30		Wien Bridge oscillator, Tuned oscillator circuits.	ICT						
31		Hartley oscillator, Colpitt's oscillator.	Chalk Talk						
32		Crystal oscillator and its types.	Chalk Talk						

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					MODULI	Ε 5	·		
33		Module-5: Construction, working and characteristics of JFET (enhance and Depletion type)	Chalk & Talk						
34		Construction, working and characteristics of MOSFET (enhance and Depletion type)	Chalk & Talk						
35		Biasing of JFET. Fixed bias configuration, self-bias configuration, voltage divider biasing.	ICT + Chalk & Talk						
36		Biasing of MOSFET. Fixed bias configuration, self-bias configuration, voltage divider biasing.	ICT + Chalk & Talk						
37		Analysis and design of JFET (only common source configuration with fixed bias) amplifiers.	Chalk & Talk						
38		Analysis and design of JFET (only common source configuration with fixed bias) amplifiers.	Chalk & Talk						
39		Analysis and design of MOSFET amplifiers.	ICT + Chalk & Talk						
40		Analysis and design of JFET MOSFET amplifiers.	ICT + Chalk & Talk						

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Lab Session No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	
					Lab Sess	ions			
1		Orientation Class: Introduction of course Module, Device Usage CRO, Single Generator, Multimeter, Power Supplyetc	Practical Session						
2		Experiments on series, shunt and double ended clippers and clampers.	Practical Session						
3		Design, simulation and Testing of Full wave – centre tapped transformer type and Bridge type rectifier circuits with and without Capacitor filter. Determination of ripple factor, regulation and efficiency.	Practical Session						
4		Static Transistor characteristics for CE, CB and CC modes and determination of h parameters	Practical Session						
5		Frequency response of single stage BJT and FET RC coupled amplifier and determination of half power points, bandwidth, input and output impedances	Practical Session						
6		Design and testing of BJT -RC phase shift oscillator for given frequency of oscillation.	Practical Session						
7		Design, simulation (MATLAB) and testing of Wien bridge oscillator for given frequency of oscillation.	Practical Session						
8		Design and testing of Hartley and Colpitt's oscillator for given frequency of oscillation.	Practical Session						
9		Determination of gain, input and output impedance of BJT Darlington emitter follower with and without bootstrapping	Practical Session						
10		Design and testing of Class A and Class B power amplifier and to determine conversion efficiency	Practical Session						
11		Design and simulation of Full wave – centre tapped transformer type and Bridge type rectifier circuits with and without Capacitor filter using MATLAB. Determination of ripple factor, regulation and efficiency.	Practical Session						

	Activity	Planned	Actual	Remarks	
1	Theory Classes	40			
2	Assignments/Quizzes/ Self study	5			
3	Tutorials/ Extra classes				
4	Internal Assessments	3			
5	ICT based Teaching (% of usage in Curriculum)	35%			
6	Laboratory Session	11 Practical Sessions/ batch			
	Planning		Execution		
Faculty S	ignature:		Faculty Signature:		
HoD Sign	ature:		HoD Signature:		