

Department of Electrical & Electronics Engineering

Lesson Plan & Work-done Diary for AY:2023-24, ODD Semester

	Course with Code: Analog Electronic Circuits –BEE303				Faculty: Praveen 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
	MODULE-1							
1		Orientation Class: Introduction about the subject, discussion of course module, Lesson Plan, mode of conduction of assessment (CIE, SEE), Prerequisite of the course, application of the course in current trends. Diode Circuits: Diode clipping circuits.	ICT					
2		Diode clamping circuits.	ICT					
3		Transistor Biasing and Stabilization: The operating point, load line analysis,	Chalk & Talk					
4		DC analysis and design of fixed bias circuit, emitter stabilized bias circuit, ,	Chalk & Talk					
5		Collector to base bias circuit	Chalk & Talk					
6		Voltage divider bias circuit, modified DC bias with voltage feedback.	Chalk & Talk					
7		Bias stabilization and stability factors for fixed bias circuit	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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	MODULE-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, analysis for CE, CB and CC(emitter voltage follower circuit) modes,.	ICT					
11		Millers Theorem and its dual, analysis for collector to base bias circuit and CE with un bypassed emitter resistance	Chalk & Talk					
12		Numerical solving	ICT + Chalk & Talk					
13		Transistor frequency response: General frequency considerations, effect of various capacitors on frequency response	ICT					
14		Miller effect capacitance, high frequency response, hybrid - pi model,	Chalk & Talk					
15		CE short circuit current gain using hybrid-pi model, multistage frequency effects	Chalk & Talk					
16		Numerical & VTU QP discussion	ICT + Chalk & Talk					

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

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	MODULE 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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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 Sessions							
1		Experiments on series, shunt and double ended clippers and clampers.	Practical Session					
2		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					
3		Static Transistor characteristics for CE, CB and CC modes and determination of h parameters	Practical Session					
4		Frequency response of single stage BJT and FET RC coupled amplifier and determination of half power points, bandwidth, input and output impedances	Practical Session					
5		Design and testing of BJT -RC phase shift oscillator for given frequency of oscillation.	Practical Session					
6		Design, simulation (MATLAB) and testing of Wien bridge oscillator for given frequency of oscillation.	Practical Session					
7		Design and testing of Hartley and Colpitt's oscillator for given frequency of oscillation.	Practical Session					
8		Determination of gain, input and output impedance of BJT Darlington emitter follower with and without bootstrapping	Practical Session					
9		Design and testing of Class A and Class B power amplifier and to determine conversion efficiency	Practical Session					
10		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	10 Practical Sessions/ batch		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	