

Lesson Plan

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	Discipline: ETC	Semester- 4th	Name of the Teaching Faculty: Sri.Rabindra kumar satapathy(Lect. ETC Engg)
Sl. No.	Subject-Th.4. (ANALOG ELECTRONICS & LINEAR IC)	No. Of Days/Week class alloted:05	Semester From date: 13.02.2023 To date: 23.05.2023 (No of weeks: 15)
	Weeks/Months	Class Day	Topic
1	2nd week 14 feb To 18 feb	1st	Unit-1:DIODE, TRANSISTORS AND CIRCUITS. 1.1 Working principle, of Diode & its current equation, Specification and use of p-n junction diode.
		2nd	1.2 Breakdown of diode (Avlance&Zener Breakdown) and Construction, working,Characteristics
		3rd	1.3 Classification of Rectifiers and working of different types of Rectifiers- Half-Wave Rectifier, Full-Wave Rectifier
		4th	1.4 Working principle of p-n-p and n-p-n transistor, different types of transistor connection (CB, CE and CC)& input and output characteristics of transistor
		5th	1.4 Working principle of p-n-p and n-p-n transistor, different types of transistor connection
2	3th week 20 feb. To 25 feb	1st	1.5 Define ALPHA, BETA and GAMMA of transistors in various modes.
		2nd	1.6 Basic concept of Biasing, Types of Biasing,h-parameter model of BJT,load line (AC &DC) and determine the Q-point.
		3rd	1.6 Basic concept of Biasing, Types of Biasing,h-parameter model of BJT,load line (AC &DC)
		4th	1.7 Types of Coupling, working principle and use of R-C Coupled Amplifier & Frequency
		5th	1.7 Responses of R-C coupled Amplifier & draw the curve.
3	4th week 27feb. To 04 th March	1st	Unit-2: AUDIO POWER AMPLIFIERS.
		2nd	1.1 Classify Power Amplifier & Differentiate between Voltage and Power Amplifier.
		3rd	1.2 Working principle of different types of Power Amplifier
		4th	1,2(Class-A, Class-AB, Class-B and Class-C & Class D amplifier).
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4	1st week 06th March To11th March	1st	1.3 Construction and working principle and advantages of Push Pull (Class-B) Amplifiers
		2nd	Unit-3: FIELD EFFECT TRANSISTOR (FET).
		3rd	3.1 FET & its classifications & Differentiate between JFET & BJT.
		4th	3.2 Construction, working principle & characteristics of JEFT
		5th	3.2 Construction, working principle & characteristics of JEFT & Explain JEFT as an
5	2nd week 13th March To18th March	1st	3.2 amplifier, parameters of JFET & Establish relation among JFET parameters.
		2nd	3.3 Construction & working principle MOSFET & its classification & characteristics (Drain & Transfer)
		3rd	3.4 Explain the operation of CMOS, VMOS & LD MOS.

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		4th	Unit-4: FEED BACK AMPLIFIER & OSCILLATOR
6	3th week 20th March To 25th March	1st	4.1 Define & classify Feedback Amplifier, principle of negative feedback with the help of block diagram
		2nd	4.1 Types of feedback – negative & positive feedback.
		3rd	4.2 Types of negative feedback – voltage shunt, voltage series, current shunt & current series
		4th	4.2 and characteristics voltage gain, bandwidth, input Impedance output impedance, stability, noise, distortion in amplifiers.
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7	4th week 27th March To 31st March	1st	4.3 Oscillator - block diagram of sine wave oscillator, Types Requirement of oscillation Barkhausen criterion.
		2nd	4.4 RC oscillators – RC phase shift, Crystal, LC oscillators – Colpitts, Hartley & Wien Bridge Oscillators
		3rd	4.4 Circuit operation, circuit diagram, equation for frequency of oscillation & frequency stability
		4th	4.4 Circuit operation, circuit diagram, equation for frequency of oscillation & frequency stability
		4th	Unit-5: TUNED AMPLIFIER & WAVE SHAPING CIRCUIT
8	1st week 1st April to 08 April	1st	5.1 Define and classify Tuned amplifier, Explain parallel Resonant circuit, Resonance Curve
		2nd	5.2 working principle of Single tuned Voltage & Double tuned Amplifier & its limitation
		3rd	5.3 Different type of Non-linear circuits - Clipper, diode series & shunt, positive & negative
		4th	5.4 Different type of Clamper circuit (positive & negative clampers) & its application.
		5th	5.4 Different type of Clamper circuit (positive & negative clampers) & its application.
9	2nd week 10th April to 15 April	1st	5.5 Working of Astable, Monostable & Bistable Multivibrator with circuit diagram.
		2nd	5.6 Working & use of Integrator and Differentiator circuit
		3rd	5.6 R- C circuit (Linear), input / output waveforms & frequency response
		4th	5.6 R- C circuit (Linear), input / output waveforms & frequency response
		5th	Unit-6: OPERATIONAL AMPLIFIER CIRCUITS & FEEDBACK CONFIGURATIONS
10	3rd week 17th April to 22 April	1st	6.1 Differential amplifier & explain its configuration & significance.
		2nd	6.2 Block diagram representation of a typical Op- Amp, its equivalent circuits and draw the schematic symbol
		3rd	6.3 Discuss the types of integrated circuits manufacturer's designations of ICs, Package types, pin identification
		4th	6.3 Discuss the types of integrated circuits manufacturer's designations of ICs, Package
		5th	6.4 Define the following electrical characteristics input offset voltage, input offset current, CMMR, Large signal voltage gain, Slew rate.
		1st	6.5 Draw and explain the Open Loop configuration (inverting, non-inverting Amplifier)
		2nd	6.6 Draw the circuit diagram of the voltage series feedback amplifier and derive the close

11	4th week 24th April to 29 April	3rd	6.6 Draw the circuit diagram of the voltage series feedback amplifier and derive the close loop Voltage gain, gain of feedback circuits
		4th	6.7 Draw the circuit diagram of the voltage shunt feedback amplifier and derive the close loop, Voltage gain
		5th	6.7 voltage gain of feedback circuits and input resistance, and output resistance, bandwidth and total output offset voltage with feedback.
12	1st week 01 May To 06 May	1st	Unit-7. APPLICATION OF OPERATIONAL AMPLIFIER, TIMER CIRCUITS& IC voltage regulator
		2nd	7.1 Discuss the summing scaling and averaging of inverting and non-inverting amplifiers
		3rd	7.2 DC & AC Amplifies using OP-AMP.
		4th	7.2 DC & AC Amplifies using OP-AMP.
		5th	7.3 Integrator and differentiator using op-amp. feedback control: proportional, integral and derivative
13	2nd week 08May. To 13 May	1st	7.4 Active filter and describe the filter design of fast order low Pass Butterworth
		2nd	7.5 Concept of Zero-Crossing Detector using Op-Amp
		3rd	7.6 Block diagram and operation of IC 555 timer & IC 565 PLL& its applications.
		4th	7.6 Block diagram and operation of IC 555 timer & IC 565 PLL& its applications.
		5th	7.7 Working of Current to voltage Convertor using Operational Amplifier
14	3rd week 15 May. To 20 May	1st	7.8 Working of the Voltage to Frequency Convertor using Operational Amplifier
		2nd	7.9 Working of the Frequency to Voltage Conversion using Operational Amplifier.
		3th	7.10 Operation of power supply using 78XX and 79XX
		4th	7.10LM 317 Series with their PIN
		5th	7.11 Functional block diagram & Working of
15	4th week 22 May. To 23 May	1st	7.6 Block diagram and operation of IC 555
		2nd	7.8 Working of the Voltage to Frequency Convertor using Operational Amplifier
		3rd	7.8 Working of the Voltage to Frequency Convertor using Operational Amplifier
		4th	8.1 Frequencyresponse,Relationship between time & frequency response
		5th	7.10LM 317 Series with their PIN configuration

Signature of the Teacher