

DHABALESWAR INSTITUTE OF POLYTECHNIC

LESSON PLAN

Discipline	Semester	Name of the Teaching Faculty
Diploma	IV	Gitanjali Bhuyan
Subject	No. of days per Week Class Alloted	4th Semester from Dt. 14/3/22 To Dt. 01/06/22
Analog Electronics Linear IC	6 days	No. of Weeks: 15 Weeks
Week	Class Day	Theory / Practical Topics
1st Week	1st days	<u>DIODE, TRANSISTOR AND CIRCUITS</u> 1- Working principle of Diode, and its current equation, specification and use of PN junction diode.
	2nd days	2- Breakdown of diode (Zener breakdown) and construction, working characteristics.
	3rd days	3- Classification of rectifiers and working of different types of Rectifiers. Half-wave rectifier. Full-wave rectifier. (C.T and BRIDGE TYPE)
	4th days	4- Working principle of P-N-P and N-P-N transistor, different types of transistor connection (CB, CE, CC) and input and output characteristics of transistor in different connection.
2nd Week	1st day	5- Define ALPHA, BETA, and GAMMA, of transistors in various modes. Establish the mathematical relationship between them.
	2nd days	6- Basic concept of measuring, Types of measuring - h parameter model of BJT load line (AC and DC) and determine the Q-point.
	3rd day	7- Type of coupling, working principle and uses of RC coupled amplifier and frequency responses of R-C coupled amplifier and draw the curve.


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Discipline	Semester	Name of the Teaching Faculty
Diploma	IV	Gitanjali Bhuyan
Subject	No. of days per Week Class Allotted	4 th Semester from Dt. 14/3/22 To Dt. 04/06/22 No. of Weeks: 15 weeks
Analog Electronics Linear IC	6 days	
Week	Class Day	Theory / Practical Topics
		<u>AUDIO POWER AMPLIFIERS</u>
	4 th days	1- classify power amplifier and differentiate between voltage and power amplifier.
	5 th days	2- Working principle of different types of power amplifiers (class A, class B, class E, and class D amplifier).
	6 th days	3- Construction and working principle and advantages of Push-Pull (class B) amplifiers.
		<u>FIELD EFFECT TRANSISTOR (FET)</u>
3 rd Week	1 st day	1- FET and its classifications and Different between JFET and MOSFET
	2 nd day	2- Construction, working principle and characteristics of JFET and Explain JFET as an amplifier. Parameters of JFET and Establish relation among JFET parameters.
4 th Week	1 st day	3- Construction and working principle MOSFET and its classification a characteristic characteristics. (Drain and transistors).
	2 nd day	
5 th Week	1 st day	4- Explain the operation of CMOS, VMOS and LDMOS.


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Diploma	IV	Gitanjali Bhuyan
Subject	No. of days per Week Class Allotted	Semester from Dt. To Dt.
Analog Electronics Linear IC	6 days	4th Semester from Dt. 14/3/22 To Dt. 07/06/22
Week	Class Day	No. of Weeks: 15
		Theory / Practical Topics
5th week	X	<u>FIELD EFFECT TRANSISTOR (FET)</u>
	2nd days	1-FET and classification and differentiate between JFET and BJT.
	3rd days	2- Construction, working principle and characteristics of JFET and Explain JFET as an amplifier, parameters of JFET and establish relation among JFET parameters.
	4th days	3- Construct and working principle MOSFET and its classification and characteristics (Drain & Transfer)
6th week	1st day X	4- Explain the operation of CMOS, VMOS, & LOMOS.
		<u>FEED BACK AMPLIFIER OSCILLATOR</u>
	2nd days	1- Define & classify feedback amplifiers. Principle of negative feed back with the help of block diagram. Types of feed back- negative & positive feed back.
	3rd day	2- Types of negative feed back-voltage shunt, voltage series, current shunts & current series and characteristics voltage gain, bandwidth, input impedance output impedance, stability, noise, distortion in amplifiers.

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Diploma	IV	Hitenjali Bhuyan
Subject	No. of days per Week Class Alloted	4th Semester from Dt. 14/3/22 To Dt. 04/06/22 No. of Weeks: 15 Week
Analog Electronics Linear IC	6 days	
Week	Class Day	Theory / Practical Topics
7th week	4th days 1st day 2nd day 3rd day 4th day	3-Oscillator - block diagram of sine wave oscillator, Types Requirement of oscillation.
8th week	1st day 2nd day 3rd day 4th day 5th day	4-RC oscillators - RC phase shift, crystal, LC oscillators, Colpitts, Hartley and Wien bridge oscillators. Circuit operation, circuit diagram, equation for frequency of oscillation and frequency stability. <u>TUNED AMPLIFIER & WAVE SHAPING CIRCUIT.</u>
9th week	1st day 2nd day	1- Defined and classify Tuned amplifiers, Explain 2- Working principle of single tuned, voltage and Double tuned Amplifier and its limitation. 3- Different type of Non-linear circuit clipper, diode series and shunt positive & negative biased and combination clipper's circuit & its application. 4- Different type of clamper circuit (positive and negative clamper) & its application. 5- Working of Astable, monostable and bistable multivibrator with circuit diagram.

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LESSON PLAN

Discipline	Semester	Name of the Teaching Faculty
Diploma	IV	Mritanjali Bhuyan
Subject	No. of days per Week Class Allotted	4th Semester from Dt. 14/03/22 To Dt. 04/06/22
Analog Electronics & Linear IC	6 days	No. of Weeks: 15 Week.
Week	Class Day	Theory / Practical Topics
10th week	3rd day.	6- Working & use of Integrator and Differentiator circuit using R-C circuit & input output waveforms and frequency response.
	4th day.	
	1st day.	
	2nd day.	
	3rd day.	
	4th day.	
11th week	1st day.	OPERATIONAL AMPLIFIER CIRCUIT & FEEDBACK CONFIGURATIONS:-
	2nd day.	1- Differential amplifier & explain its configuration & significance.
	3rd day.	2- Block diagram representation of typical Op-Amp. its equivalent circuits and draw the symbol.
	4th day.	3- Discuss the types of integrated circuits manufacturers designation of ICs.
	1st day.	4- Define the following electrical characteristics input offset voltage, input offset current, CMRR, slew rate.
	2nd day.	5- Draw the explain the open loop configuration (Inverting, non inverting amplifier)
	3rd day.	6- Draw the circuit diagram of the voltage series feedback amplifier and derive the close loop voltage gain, gain of feedback circuit, input resistance
	4th day.	
12th week	1st day.	
	2nd day.	
	3rd day.	
	4th day.	
13th week	1st day.	
	2nd day.	

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Discipline	Semester	Name of the Teaching Faculty
Diploma	IV	Yitanjali Shuyan
Subject	No. of days per Week Class Allotted	4th Semester from Dt. 14/03/22 To Dt. 04/06/22
Analog Electronics	6 days	No. of Weeks: 15 Week
Week	Class Day	Theory / Practical Topics
14th week	1st day.	- and out put resistance band width and total off set voltage with feedback.
	2nd day.	7- Draw the circuit diagram of the voltage f'short feed back amplifier and derive the close loop, voltage gain, gain of feed back circuit.
	3rd day.	
	4th day.	
15 week	1st day.	APPLICATIONS OF FEED OPERATIONAL AMPLIFIER, TIMER CIRCUITS IC VOLTAGE REGULATOR.
	2nd day.	1- Discuss the summing scaling and averaging of inverting and non-inverting amplifiers.
	3rd day.	2- DC and AC amplifiers using op-amp.
	4th day.	3- Integrator and differentiator using op-amp.
	5th day.	4- Active filter and describe the filter design of first order low pass Butterworth.
		5- Concept of Zero-crossing Detector using op-amp.


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