



LESSONPLAN

Discipline: ETC.	Semester:- 3 rd	Name of the Teaching Faculty:- Pradeepta prajnarajan swain
Subject:- ELECTRONICS DEVICES. [TH-2]	No of Days/per Week Class Allotted: 03	Semester-3 rd From:01.07.2026 To:5.11.2026 No of Weeks:-15
Week	Class/Day	Theory Topics
1 st	1 st	Introduction to Semiconductor Physics (1) Review of Quantum Mechanics (2) Electrons in periodic Lattices.
	2 nd	(3) Energy bands in intrinsic and extrinsic silicon 1.4 Carrier transport (4) Diffusion current (5) Drift current
	3 rd	(6) Mobility and resistivity
2 nd	1 st	P-N Junction Diodes (1) Generation and recombination of carriers (2) Poisson and continuity equation (3) P-N Junction Diodes
	2 nd	(4) Construction of P-N Junction Diode (5) Operating Principle (6) P-N junction characteristics
	3 rd	(7) I-V characteristics (8) Small signals switching models (9) Avalanche breakdown
3 rd	1 st	(10) Zener diode (11) Schottky diode (12) LED 2.3.10 Photodiode and solar cell
	2 nd	Bipolar Junction Transistor (BJT) (1) Construction of BJT (2) Operating Principle of BJT (3) Types of BJT (4) Working principle of p-n-p and n-p-n BJT (5) I-V characteristics
	3 rd	(6) Bears Moll Model (7) Different types of transistor connection (8) Common Base (CB) (9) Common Emitter (CE) (10) Common Collector (CC)
4 th	1 st	(11) Input and output characteristics of transistor in different connections (12) Define ALPHA, BETA and GAMMA of transistors in various modes. 3.10 Establish the Mathematical relationship between ALPHA, BETA and GAMMA (13) Basic concept of Biasing (14) Types of Biasing
	2 nd	(15) h-parameter model of BJT (16) Load line and determine the Q-point. (17) Types of Coupling
	3 rd	(18) Working principle and use of R-C Coupled Amplifier (19) Frequency Responses of R-C coupled Amplifier
5 th	1 st	FIELD EFFECT TRANSISTOR (FET) (1) FET & its classifications (2) Differentiate between JFET & BJT
	2 nd	(3) Construction, working principle & characteristics of EFT (4) Parameters of JFET & establish relation among JFET parameters
	3 rd	(5) JFET as an amplifier (6) Construction and working principle of MOSEF
6 th	1 st	(7) Classification of MOSEFT (8) Characteristics (Drain & Transfer) of MOSEFT (9) Explain the operation of CMOS, VMOS & LD MOS.
	2 nd	FEED BACK AMPLIFIER & OSCILLATOR (1) Define & classify Feedback Amplifier
	3 rd	(2) Types of feedback – negative & positive feedback.
	1 st	(3) Characteristics voltage gain, bandwidth, input Impedance output impedance, stability, noise and distortion in amplifiers.

7th	2nd	(4) Oscillator (5) Block diagram of sine wave oscillator
	3rd	(6) Types Requirement of oscillation
	1st	(7) Barkhausen criterion (8) LC oscillators
8th	2nd	(9) Colpitts Oscillators (10) Hartley Oscillators
	3rd	(11) Wien Bridge Oscillators
	1st	Integrated Circuit Fabrication Process (1) Oxidation
9th	2nd	(2) Diffusion (3) Ion implantation
	3rd	(4) Photo-lithography
	1st	(5) Etching (6) Chemical vapor deposition
10th	2nd	(7) Sputtering (8) Twin-tub CMOS process
	3rd	DOUBT CLEARING CLASS
	1st	Bipolar Junction Transistor (BJT) (1) Construction of BJT (2) Operating Principle of BJT (3) Types of BJT (4) Working principle of p-n-p and n-p-n BJT (5) I-V characteristics
11th	2nd	(15) h-parameter model of BJT (16) Load line and determine the Q-point. (17) Types of Coupling
	3rd	(18) Working principle and use of R-C Coupled Amplifier (19) Frequency Responses of R-C coupled Amplifier
	1st	FIELD EFFECT TRANSISTOR (FET) (8) Characteristics (Drain & Transfer) of MOSEFT (9) Explain the operation of CMOS, VMOS & LDMOS.
12th	2nd	(8) Characteristics (Drain & Transfer) of MOSEFT (9) Explain the operation of CMOS, VMOS & LDMOS.
	3rd	FEED BACK AMPLIFIER & OSCILLATOR (1) Define & classify Feedback Amplifier
	1st	(9) Colpitts Oscillators (10) Hartley Oscillators
13th	2nd	(11) Wien Bridge Oscillators
	3rd	CLASS TEST
	1st	Doubt clearing class.
14th	2nd	Doubt clearing class.
	3rd	Doubt clearing class.
	1st	Doubt clearing class.
15th	2nd	Doubt clearing class.
	3rd	Doubt clearing class.
	1st	Doubt clearing class.

Pradeepta Prajnarajan Swain.
Sign. of faculty

29.06.26
Sign. of sr. lecturer

Head of Dept. 1700
Electrical & ETC
G. E.T. (POLY), CUTTACK

24/6/26
Sign. of principal

Principal
GIET (Polytechnic)
Jagatpur, Cuttack