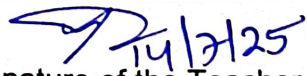


GOVT. POLYTECHNIC KENDRAPARA
LESSON PLAN
Session(2025-2026)

Discipline: Electronics & Telecommunication Engineering	Semester: 3rd Winter-2025	Name of the Faculty: B B NAIK (Sr. LECTURER) & JOGESWAR NAIK (LECTURER STAGE-II)
Subject: TH:2- ELECTRONICS DEVICES	No. of Days/week: 03	Start Date: 14/07/2025 End Date: 15/11/2025 No. of Week: 15

SL NO	Week/Month	Class Day	Theory Topics
1	1st week (14th July to 19th July 2025)	1st	I-Introduction to Semiconductor Physics 1.1 Review of Quantum Mechanics, 1.2 Electrons in periodic Lattices
		2nd	1.3 Energy bands in intrinsic and extrinsic silicon, 1.4 Carrier transport
		3rd	1.4.1 Diffusion current, 1.4.2 Drift current
2	2nd week (21th July to 25th July 2025)	1st	1.4.3 Mobility and resistivity
		2nd	II-P-N Junction Diodes ,2.1 Generation and recombination of carriers, 2.2 Poisson and continuity equation
		3rd	2.3 P-N Junction Diodes,2.3.1 Construction of P-N Junction Diode,2.3.2 Operating Principle
3	3rd week (28th July to 02nd Aug 2025)	1st	2.3.3 P-N junction characteristics, 2.3.4 I-V characteristics
		2nd	2.3.5 Small signal switching models
		3rd	2.3.6 Avalanche breakdown, 2.3.7 Zener diode
4	4th week (04th Aug to 8th Aug 2025)	1st	2.3.8 Schottky diode, 2.3.9 LED
		2nd	2.3.10 Photodiode and solar cell
		3rd	III-Bipolar Junction Transistor (BJT) , 3.1 Construction of BJT
5	5th week (11th Aug to 16th Aug 2025)	1st	3.2 Operating Principle of BJT, 3.3 Types of BJT
		2nd	3.4 Working principle of p-n-p and n-p-n BJT, 3.5 I-V characteristics
		3rd	3.6 Ebers Moll Model
6	6th week (18th Aug to 26th Aug 2025)	1st	3.7 Different types of transistor connection, 3.7.1 Common Base (CB)
		2nd	3.7.2 Common Emitter (CE), 3.7.3 Common Collector (CC)
		3rd	3.8 Input and output characteristics of transistor in different connections
7	7th week (29th Aug to 06th Sept 2025)	1st	3.9 Define ALPHA, BETA and GAMMA of transistors in various modes., 3.10 Establish the Mathematical relationship between ALPHA, BETA and GAMMA
		2nd	3.11 Basic concept of Biasing, 3.12 Types of Biasing
		3rd	3.13 h-parameter model of BJT
8	8th week (08st Sept to 12th Sept 2025)	1st	3.14 Load line and determine the Q-point.
		2nd	3.15 Types of Coupling 3.16 Working principle and use of R-C Coupled Amplifier
		3rd	3.17 Frequency Responses of R-C coupled Amplifier

9	9th week (15th Sept to 20th Sept 2025)	1st	IV-FIELD EFFECT TRANSISTOR (FET) , 4.1 FET & its classifications, 4.2 Differentiate between JFET & BJT
		2nd	4.3 Construction, working principle & characteristics of JEFT
		3rd	4.4 Parameters of JFET & establish relation among JFET parameters 4.5 JEFT as an amplifier
10	10th week (22nd Sept to 26th Sept 2025)	1st	4.5 Construction and working principle of MOSEFT 4.6 Classification of MOSEFT
		2nd	4.7 Characteristics (Drain & Transfer) of MOSEFT
		3rd	4.8 Explain the operation of CMOS, VMOS & LDMOS.
11	11th week (3rd oct to 10th oct 2025)	1st	V-FEED BACK AMPLIFIER & OSCILLATOR 5.1 Define & classify Feedback Amplifier
		2nd	5.2 Types of feedback – negative & positive feedback.
		3rd	5.3 Characteristics voltage gain, bandwidth, input Impedance output impedance, stability, noise and distortion in amplifiers.
12	12th week (13th oct to 18th oct 2025)	1st	5.4 Oscillator, 5.4.1 Block diagram of sine wave oscillator
		2nd	5.4.2 Types Requirement of oscillation
		3rd	5.4.3 Barkhausen criterion
13	13th week (20th oct to 31th oct 2025)	1st	5.5 LC oscillators, 5.5.1 Colpitts Oscillators
		2nd	5.5.2 Hartley Oscillators, 5.5.3 Wien Bridge Oscillators
		3rd	VI-Integrated Circuit Fabrication Process , 6.1 Oxidation
14	14th week (01st Nov to 07th Nov)	1st	6.2 Diffusion
		2nd	6.3 Ion implantation
		3rd	6.4 Photo-lithography
15	15th week (10th Nov to 15th Nov)	1st	6.4 Photo-lithography, 6.5 Etching
		2nd	6.7 Chemical vapor deposition, 6.8 Sputtering
		3rd	6.9 Twin-tub CMOS process


 Signature of the Teacher