

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Applied Science and Humanities

LESSON PLAN

Subject Name: -Basics of Electronics Engineering

Subject Code: - ECE-101

Year: - 1st

Semester: - 1st

Sr. No.	Topic Covered	Plan Date	Delivery Date	Methodology Used
Unit 1: Semiconductor Family and Applications (CO1)				
1	Active and passive components	22-08-2024	22-08-2024	Lecture, PPT, Demonstration
2	Introduction of semiconductors and doping	23-08-2024	23-08-2024	Lecture, PPT, Demonstration
3	PN junction diode: Operation, breakdown, and barrier potential	27-08-2024	27-08-2024	Lecture, PPT, Demonstration
4	Diode as a switch and its applications	28-08-2024	28-08-2024	Lecture
5	Half-wave rectifier: Theory, working, and waveforms	29-08-2024	29-08-2024	Lecture
6	Center Tap Full-wave rectifier: Theory, working, and waveforms	30-08-2024	02-09-2024	Lecture
7	Bridge type Full-wave rectifier: Theory, working, and waveforms	02-09-2024	03-09-2024	Lecture
8	Numericals on Rectifiers.	03-09-2024	04-09-2024	Lecture
9	Zener diode and voltage regulator using Zener diode	04-09-2024	06-09-2024	Lecture
10	Avalanche diode and Schottky diode	06-09-2024	09-09-2024	Lecture, PPT, Demonstration
11	Photodiode and photovoltaic cell	09-09-2024	10-09-2024	Lecture, PPT, Demonstration
12	Solar cell: Operation and applications	10-09-2024	11-09-2024	Lecture
13	Revision of Unit-1	11-09-2024	13-09-2024	Flip learning
Unit 2: Introduction to BJT (CO2)				
14	Different types of transistors and their applications	13-09-2024	16-09-2024	Lecture

15	Principle of operation of a transistor	16-09-2024	17-09-2024	Lecture
16	Input and output characteristics of CE configuration	17-09-2024	18-09-2024	Lecture
17	Input and output characteristics of CB configuration	18-09-2024	20-09-2024	Lecture
18	Input and output characteristics of CC configuration	20-09-2024	23-09-2024	Lecture
19	Relation between alpha, beta, and gamma	23-09-2024	24-09-2024	Lecture
20	Concept of operating point	24-09-2024	30-09-2024	Lecture
21	Transistor as a switch	25-09-2024	01-10-2024	Lecture
22	Transistor as an amplifier	27-09-2024	04-10-2024	Lecture
23	Revision of Unit-2	30-09-2024	07-10-2024	Flip learning
Unit 3: Digital Systems and Binary Numbers (CO3)				
24	Digital systems and analog vs digital signals	01-10-2024	08-10-2024	Lecture
25	Decimal number system	04-10-2024	11-10-2024	Lecture
26	Binary number system	07-10-2024	15-10-2024	Lecture
27	octal and hexadecimal number system	08-10-2024	16-10-2024	Lecture
28	Number base conversions	09-10-2024	23-10-2024	Lecture
29	Binary arithmetic	11-10-2024	24-10-2024	Lecture
30	Complement arithmetic	14-10-2024	25-10-2024	Lecture
31	Signed binary numbers	15-10-2024	04-11-2024	Lecture
32	Binary codes: BCD codes and GREY codes	16-10-2024	06-11-2024	Lecture
33	BCD arithmetic	23-10-2024	07-11-2024	Lecture
34	Revision of Unit-3	24-10-2024	08-11-2024	Flip learning
Unit 4: Logic Gates and Boolean Algebra (CO4)				
35	Digital logic gates and their types	25-10-2024	11-11-2024	Lecture
36	Universal gates and their applications	28-10-2024	14-11-2024	Lecture
37	Practice session on minimization of logical expressions	04-11-2024	18-11-2024	Lecture

38	Boolean algebra: Definitions and theorems	06-11-2024	20-11-2024	Lecture
39	Minimization of logical expressions using Boolean algebra	07-11-2024	21-11-2024	Lecture
40	Practice of minimization of logical expressions	08-11-2024	22-11-2024	Lecture
41	Canonical and standard forms	11-11-2024	25-11-2024	Lecture
42	Practice of Canonical and standard forms	13-11-2024	28-11-2024	Lecture
43	Other logic representations	14-11-2024	02-12-2024	Lecture
44	Seven-segment display: Introduction	18-11-2024	09-12-2024	Lecture, PPT, Demonstration
45	Multiplexed segment display	20-11-2024	11-12-2024	Lecture, PPT, Demonstration
46	LED display: Introduction, construction, and advantages	21-11-2024	12-12-2024	Lecture, PPT, Demonstration
47	LCD display: Introduction and types	22-11-2024	16-12-2024	Lecture, PPT, Demonstration
48	Revision of unit-4	25-11-2024	18-12-2024	Flip learning

Text Books:

1. Millman, Halkias, "Integrated Electronics", TMH, 2nd Edition, 2017.
2. Boylestad, Nashelsky, "Electronic Devices & Circuit Theory", PHI, 11th Edition, 2015.
3. Thomas L. Floyd, "Digital Fundamentals", Pearson Education, 10th Edition, 2010.
4. A. Kumar, "Fundamentals of Digital Circuits", 4th Edition, Prentice Hall India, 2016.
5. R P Jain, "Modern digital electronics", TMH, 4th Edition, 2009.
6. N N Bhargava, "Basic Electronics and Linear Circuits", McGraw Hill, 2nd Edition, 2017.

Other References:

1. Jimmie J Cathey "Electronics devices and circuits", McGraw Hill, 4th Edition, 2002.
2. S Salivahanan, N Naresh Kumar, "Electronics devices and circuits", McGraw Hill, 4th Edition, 2017.
3. M. M. Mano, "Digital design", Pearson Education India, 6th edition, 2016.
4. A.K. Maini, "Digital Electronics", Wiley India, 1st Edition, 2019.