

**Electrical Engineering  
Department  
Lesson plan**

<b>Name of Faculty</b>	<b>SUCHET KUMARI</b>
<b>Discipline</b>	<b>Electrical Engineering</b>
<b>Semester</b>	<b>Third Sem (3rd sem)</b>
<b>Subject</b>	<b>Analog &amp; Digital Electronics</b>
<b>Lesson Plan Duration</b>	<b>From Sep 2023</b>
<b>Work load [Theory + Practical] Per Week</b>	<b>[03+04]</b>

<b>Week</b>	<b>Day</b>	<b>Theory Topic/ Assignment/ Test</b>	<b>No.</b>	<b>Practical</b>
<b>1<sup>st</sup></b>	<b>1</b>	<b>Unit1: Concept of insulators, conductors and semiconductors.</b>	<b>1</b>	<b>To Plot V-I characteristics of a PN junction diode</b>
	<b>2</b>	<b>Intrinsic and extrinsic</b>		
	<b>3</b>	<b>P and N type semiconductor and their conductivity.</b>		
<b>2<sup>nd</sup></b>	<b>1</b>	<b>Effect of temperature on conductivity of intrinsic semiconductor</b>	<b>2</b>	<b>To Plot V-I characteristics of a Zener diode</b>
	<b>2</b>	<b>PN junction diode, mechanism of current flow in PN junction,</b>		
	<b>3</b>	<b>forward and reverse biased PN junction, potential barrier,</b>		
<b>3<sup>rd</sup></b>	<b>1</b>	<b>drift and diffusion currents, depletion layer</b>	<b>3</b>	<b>Half-wave rectifier circuit using one diode</b>
	<b>2</b>	<b>. V-I characteristics of diodes</b>		
	<b>3</b>	<b>Diode as half-wave, full wave.</b>		
<b>4<sup>th</sup></b>	<b>1</b>	<b>Bridge rectifiers</b>	<b>4</b>	<b>Full-wave rectifier circuit using two diodes</b>
	<b>2</b>	<b>Peak Inverse Voltage, rectification efficiencies and ripple factor calculations,</b>		
	<b>3</b>	<b>Concept of filters..</b>		
<b>5<sup>th</sup></b>	<b>1</b>	<b>Types of diode, characteristics and applications of Zener diodes</b>	<b>5</b>	<b>Observe the output of waveform of Bridge-rectifier circuit using four diodes.</b>
	<b>2</b>	<b>Revision</b>		
	<b>3</b>	<b>Revision</b>		
<b>6<sup>th</sup></b>	<b>1</b>	<b>UNIT:2 Concept of a bipolar transistor, PNP and NPN transistors.</b>	<b>6</b>	<b>Plotting of input and output characteristics and calculation of parameters of transistors in CE configuration</b>
	<b>2</b>	<b>CB, CE, CC configurations of a transistor.</b>		
	<b>3</b>	<b>Transistor as an amplifier in CE Configuration,</b>		
<b>7<sup>th</sup></b>	<b>1</b>	<b>Current amplification factors,</b>	<b>7</b>	<b>Plotting of input and output characteristics and calculation of parameters of transistors in CB configuration</b>
	<b>2</b>	<b>Comparison of CB, CE and CC Configurations.</b>		

	3	Construction, operation		
8 <sup>th</sup>	1	Characteristics of FETs. FET as an amplifier.	8	Plotting of V-I characteristics of a FET
	2	Construction, operation and characteristics of a MOSFET.		
	3	Comparison of JFET, MOSFET and BJT.		
9 <sup>th</sup>	1	Revision	9	Basic logic operations of AND, OR, NOT gates
	2	Revision		
	3	UNIT 3 Distinction between analog and digital signal.		
10 <sup>th</sup>	1	Decimal, Binary, octal and hexadecimal number system.	10	Verification of truth tables for NAND, NOR and Exclusive OR (EX-OR) and Exclusive NOR (EX-NOR) gates.
	2	Conversion from decimal and hexadecimal to binary and vice-versa.		
	3	Binary addition		
11 <sup>th</sup>	1	Binary subtraction.	11	Realization of logic functions with the help of NAND or NOR gates
	2	Binary division and multiplication		
	3	Definition, symbols and truth tables of Logic gates		
12 <sup>th</sup>	1	Revision	12	To design a half adder using XOR and NAND gates and verification of its operations
	2	Revision		
	3	UNIT 4 Difference between Sequential Circuits and combinational circuit		
13 <sup>th</sup>	1	Half adder, Full adder	13	Construction of a fu Construction of a full adder circuit using XOR and NAND gates and verify its operation
	2	Mux, De-Mux,		
	3	Encoder and Decoder.		
14 <sup>th</sup>	1	Combinational Circuits like Latch, Flip Flops	14	Verification of truth table for IC flip-flops (At least one IC each of D latch, D flip-flop, JK flip-flops).
	2	Shift registers.		
	3	counters.		
15 <sup>th</sup>	1	A/D Converters	15	Verification of truth table for encoder and decoder ICs Verification of truth table for Mux and De-Mux
	2	D/A Converters		
	3	Applications of A/D and D/A Converters		
	2	Revision of Old Question Papers		
	3	Revision of Old Question Papers		