Lesson Plan of Electrical Engineering Material

Discipline:- Electrical	Semester:- 3rd	Name Of The Teaching Faculty:- SOURABH NANDA
Subject:- Electrical Engineering Material	No Of Days Per week Class Allotted:-4	No Of Weeks:-15 DATE-01-07-2024 TO 16-12-2024
No. of week	No. of class	Topic to be taught
1st	1	**Conducting Materials:** Introduction of Conducting Material
	2	Resistivity, factors affecting resistivity
	3	Classification of conducting materials into low-resistivity and high resistivity materials
	4	Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
2nd	5	Stranded conductors, Bundled conductors
	6	Low resistivity copper alloys
	7	High Resistivity Materials and their Applications (Tungsten, Carbon, Platinum, Mercury)
	8	Superconductivity, Superconducting materials, Application of superconductor materials
3rd	9	**Semiconducting Materials:** Introduction of Semiconducting Materials, Semiconductors
	10	Electron Energy and Energy Band Theory, Excitation of Atoms
	11	Insulators, Semiconductors and Conductors
	12	Semiconductor Materials, Covalent Bonds
4th	13	Intrinsic Semiconductors, Extrinsic Semiconductors
	14	N-Type Materials, P-Type Materials
	15	Minority and Majority Carriers, Semi-Conductor Materials
	16	Applications of Semiconductor materials: Rectifiers
5th	17	Temperature-sensitive resisters or thermistors, Photoconductive cells
	18	Photovoltaic cells, Varisters, Transistors
	19	Hall effect generators, Solar power
	20	**Insulating Materials:** Introduction
6th	21	General properties of Insulating Materials: Electrical properties
	22	Visual properties
	23	Mechanical properties
	24	Thermal properties
7th	25	Chemical properties
	26	Ageing
	27	Insulating Materials – Classification, properties, applications: Introduction
	28	Classification of insulating materials on the basis physical and chemical structure

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8th	29	Insulating Gases: Introduction.
	30	Commonly used insulating gases
	31	Doubt Clearing Class
	32	Doubt Clearing Class
9th	33	**Dielectric Materials:** Introduction
	34	Dielectric Constant of Permittivity
	35	Polarization
	36	Dielectric Loss
10th	37	Electric Conductivity of Dielectrics and their Break Down
	38	Properties of Dielectrics.
	39	Applications of Dielectrics.
	40	**Magnetic Materials:** **Introduction**
11th	41	Classification: -- Diamagnetism, ,
	42	Para magnetism
	43	Ferromagnetism
	44	Magnetization Curve
12th	45	Hysteresis
	46	Eddy Currents
	47	Curie Point
	48	Magneto-striction
13th	49	Soft and Hard magnetic Materials: Soft magnetic materials
	50	Hard magnetic materials
	51	**Materials for Special Purposes:** Introduction
	52	Structural Materials
14th	53	Protective Materials: Lead, Steel tapes, wires and strips
	54	Other Materials: Thermocouple materials
	55	Bimetals
	56	Soldering Materials
15th	57	Fuse and Fuse materials.
	58	Dehydrating material.
	59	Revision
	60	Revision

01/07/2025

Teaching Faculty

H.O.D.E.E. 01/07/2025