

SUNDARGARH ENGINEERING SCHOOL, KIREI
LESSON PLAN

Subject : ELECTRICAL ENGINEERING MATERIAL

Discipline : ELECTRICAL ENGINEERING

Faculty : SHYAM SUNDAR PADHI

Semester : 3RD

Week	Weekly classes	Theory Topics
1 st	1 st	Conducting Materials: Introduction ,Resistivity,
	2 nd	Factors affecting resistivity , Classification of conducting materials into low-resistivity and high resistivity materials
	3 rd	Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
	4 th	Stranded conductors, Bundled conductors
2 nd	1 st	Low resistivity copper alloys High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	2 nd	Superconductivity , Superconducting materials
	3 rd	Application of superconductor materials
	4 th	Semiconducting Materials: Introduction , Semiconductors
3 rd	1 st	Electron Energy and Energy Band Theory
	2 nd	Excitation of Atoms ,Insulators, Semiconductors and Conductors
	3 rd	Semiconductor Materials
	4 th	Covalent Bonds ,Intrinsic Semiconductors
4 th	1 st	Extrinsic Semiconductors
	2 nd	N-Type Materials , P-Type Materials
	3 rd	Minority and Majority Carriers
	4 th	Semi-Conductor Materials ,Applications of Semiconductor materials
5 th	1 st	Rectifiers ,Temperature-sensitive resistors or thermistors ,Photoconductive cells
	2 nd	Photovoltaic cells
	3 rd	Varistors Transistors
	4 th	Hall effect generators , Solar power
6 th	1 st	Insulating Materials: Introduction ,General properties of Insulating Materials

	2 nd	Electrical properties
	3 rd	Visual properties ,Mechanical properties
	4 th	Thermal properties ,Chemical properties , Ageing
7 th	1 st	Thermal properties ,Chemical properties ,Ageing
	2 nd	Introduction,Classification of insulating materials on the basis physical and chemical structure
	3 rd	Insulating Gases ,Introduction,Commonly used insulating gases chemical structure
	4 th	Dielectric Materials: Introduction ,Dielectric Constant of Permittivity
8 th	1 st	Polarization
	2 nd	Dielectric Loss
	3 rd	Electric Conductivity of Dielectrics and their Break Down
	4 th	Properties of Dielectrics.
9 th	1 st	Applications of Dielectrics.
	2 nd	Magnetic Materials: 5.1 Introduction 5.2 Classification
	3 rd	Diamagnetism
	4 th	Para magnetism
10 th	1 st	Ferromagnetism
	2 nd	Magnetization Curve
	3 rd	Hysteresis
	4 th	Eddy Currents
11 th	1 st	Curie Point
	2 nd	Magneto-striction
	3 rd	Soft and Hard magnetic Materials
	4 th	Soft magnetic materials
12 th	1 st	Hard magnetic materials
	2 nd	Materials for Special Purposes 6.1 Introduction
	3 rd	Structural Materials
	4 th	Protective Materials

13 th	1 st	Lead
	2 nd 3 rd	Steel tapes, wires and strips
	4 th	Other Materials
14 th	1 st	Thermocouple materials
	2 nd	Bimetals
	3 rd	Soldering Materials
	4 th	Fuse and Fuse materials.

HOD, Electrical Department

Principal