

**PNS SCHOOL OF ENGINEERING AND TECHNOLOGY**  
**DEPARTMENT OF ELECTRICAL ENGINEERING**

Branch: Electrical Engg.	Semester: 3 <sup>rd</sup>	Name of the Lecturer: <b>Jayakant Mallick</b>
Subject: EEM	Classes Alloted in a Week: 5	Duration of Semester: 01.07.2024 - 08.11.2024
Week	Class Day	Theory / Practical Topic
1st	1	<b>Conducting Materials:</b> Introduction Resistivity, factors affecting resistivity
	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)
	5	Low Resistivity Materials and their Applications (Silver)
2nd	1	Low Resistivity Materials and their Applications (Gold, Aluminum)
	2	Low Resistivity Materials and their Applications (Steel)
	3	Stranded conductors
	4	Bundled conductors
	5	Low resistivity copper alloys
3rd	1	High Resistivity Materials and their Applications(Tungsten)
	2	High Resistivity Materials and their Applications(Carbon)
	3	High Resistivity Materials and their Applications(Platinum, Mercury)
	4	Superconductivity
	5	Superconducting materials
4th	1	Application of superconductor materials
	2	<b>Semiconducting Materials:</b> Introduction to Semiconductors
	3	Electron Energy and Energy Band Theory, Excitation of Atoms
	4	Insulators, Semiconductors and Conductors
	5	Semiconductor Materials, Covalent Bonds
5th	1	Intrinsic Semiconductors & Extrinsic Semiconductors
	2	N-Type Materials & P-Type Materials, Minority and Majority Carriers
	3	Applications of Semiconductor materials: Rectifiers & Thermistors
	4	Applications of Semiconductor materials: Photoconductive cells & Photovoltaic cells
	5	Applications of Semiconductor materials: Varistors & Transistors
6th	1	Applications of Semiconductor materials: Hall effect generators & Solar power
	2	<b>Insulating Materials:</b> Introduction
	3	General properties of Insulating Materials: Electrical properties
	4	General properties of Insulating Materials: Visual properties
	5	General properties of Insulating Materials: Mechanical properties & Thermal properties
7th	1	General properties of Insulating Materials: Chemical properties & Ageing
	2	Classification of insulating materials on the basis physical structure
	3	Classification of insulating materials on the basis chemical structure
	4	Insulating Gases: Introduction
	5	Commonly used insulating gases

8th	1	<b>Dielectric Materials:</b> Introduction
	2	Dielectric Constant of Permittivity
	3	Polarization
	4	Dielectric Loss
	5	Electric Conductivity of Dielectrics and their Break Down
9th	1	Properties of Dielectrics
	2	Properties of Dielectrics
	3	Applications of Dielectrics
	4	<b>Magnetic Materials:</b> Introduction
	5	Classification: Diamagnetism, Paramagnetism & Ferromagnetism
10th	1	Classification: Diamagnetism, Paramagnetism & Ferromagnetism
	2	Magnetization Curve
	3	Hysteresis
	4	Eddy Currents & Curie Point
	5	Magneto-striction
11th	1	Soft and Hard magnetic Materials
	2	<b>Materials for Special Purposes:</b> Introduction
	3	Structural Materials
	4	Protective Materials: Lead
	5	Protective Materials: Steel tapes, wires and strips
12th	1	Thermocouple materials
	2	Bimetals
	3	Soldering Materials
	4	Fuse and Fuse materials
	5	Dehydrating materials

Signature of the  
Lecturer

Signature of the  
H.O.D.