

# LESSON PLAN

**DEPARTMENT OF ELECTRICAL ENGINEERING, ITT, CHOUDWAR**

**SUBJECT:** EEM

**Periods:** 4 per week

**SEMESTER:** 3<sup>rd</sup>

**NAME OF FACULTY:** Monalisa Swain

**No. of weeks:** 15

Week	Period	Theory / Practical Topics
1 <sup>st</sup>	1 <sup>st</sup>	<b>Conducting Materials:</b> - Introduction
	2 <sup>nd</sup>	Resistivity, factors affecting resistivity
	3 <sup>rd</sup>	Classification of conducting materials into low-resistivity and high resistivity materials
	4 <sup>th</sup>	Low Resistivity Materials and their Applications. (Copper, Silver)
2 <sup>nd</sup>	1 <sup>st</sup>	Low Resistivity Materials and their Applications. (Gold, Aluminum, Steel)
	2 <sup>nd</sup>	Low Resistivity Materials and their Applications. (Gold, Aluminum, Steel)
	3 <sup>rd</sup>	Stranded conductors
	4 <sup>th</sup>	Bundled conductors
3 <sup>rd</sup>	1 <sup>st</sup>	Low resistivity copper alloys
	2 <sup>nd</sup>	Low resistivity copper alloys continue.....
	3 <sup>rd</sup>	High Resistivity Materials and their Applications (Tungsten, Carbon)
	4 <sup>th</sup>	High Resistivity Materials and their Applications (Platinum, Mercury)
4 <sup>th</sup>	1 <sup>st</sup>	Superconductivity continues .....
	2 <sup>nd</sup>	Superconductivity
	3 <sup>rd</sup>	Superconducting materials
	4 <sup>th</sup>	Application of superconductor materials
5 <sup>th</sup>	1 <sup>st</sup>	<b>Semiconducting Materials:</b> - Introduction, Semiconductors
	2 <sup>nd</sup>	Electron Energy and Energy Band Theory, Excitation of Atoms
	3 <sup>rd</sup>	Insulators, Semiconductors and Conductors
	4 <sup>th</sup>	Semiconductor Materials, Covalent Bonds
6 <sup>th</sup>	1 <sup>st</sup>	Intrinsic Semiconductors, Extrinsic Semiconductors
	2 <sup>nd</sup>	N-Type Materials, P-Type Materials
	3 <sup>rd</sup>	Minority and Majority Carriers, Semi-Conductor Materials
	4 <sup>th</sup>	Applications of Semiconductor materials - Rectifiers, Temperature-sensitive resistors or thermistors
7 <sup>th</sup>	1 <sup>st</sup>	Photoconductive cells, Photovoltaic cells, Varistors, Transistors
	2 <sup>nd</sup>	Hall effect generators, Solar power
	3 <sup>rd</sup>	<b>Insulating Materials:</b> - Introduction
	4 <sup>th</sup>	General properties of Insulating Materials - Electrical properties
8 <sup>th</sup>	1 <sup>st</sup>	General properties of Insulating Materials - Visual properties
	2 <sup>nd</sup>	General properties of Insulating Materials - Mechanical properties, Thermal properties
	3 <sup>rd</sup>	General properties of Insulating Materials - Chemical properties, Ageing
	4 <sup>th</sup>	Insulating Materials – Classification, properties, applications -Introduction
9 <sup>th</sup>	1 <sup>st</sup>	Classification of insulating materials on the basis physical and chemical structure
	2 <sup>nd</sup>	Insulating Gases, Introduction.
	3 <sup>rd</sup>	Commonly used insulating gases
	4 <sup>th</sup>	<b>Dielectric Materials:</b> - Introduction

10 <sup>th</sup>	1 <sup>st</sup>	Dielectric Constant of Permittivity
	2 <sup>nd</sup>	Polarization
	3 <sup>rd</sup>	Polarization continues...
	4 <sup>th</sup>	Dielectric Loss
11 <sup>th</sup>	1 <sup>st</sup>	Electric Conductivity of Dielectrics and their Break Down
	2 <sup>nd</sup>	Properties of Dielectrics.
	3 <sup>rd</sup>	Applications of Dielectrics
	4 <sup>th</sup>	<b>Magnetic Materials:</b> - Introduction, Classification
12 <sup>th</sup>	1 <sup>st</sup>	Diamagnetism, Para magnetism, Ferromagnetism
	2 <sup>nd</sup>	Magnetization Curve
	3 <sup>rd</sup>	Hysteresis
	4 <sup>th</sup>	Eddy Currents, Curie Point
13 <sup>th</sup>	1 <sup>st</sup>	Magneto-striction
	2 <sup>nd</sup>	Soft magnetic materials
	3 <sup>rd</sup>	Hard magnetic materials
	4 <sup>th</sup>	<b>Materials for Special Purposes:</b> -Introduction
14 <sup>th</sup>	1 <sup>st</sup>	Structural Materials
	2 <sup>nd</sup>	Protective Materials - Lead
	3 <sup>rd</sup>	Protective Materials - Steel tapes, wires and strips
	4 <sup>th</sup>	Other Materials -Thermocouple materials
15 <sup>th</sup>	1 <sup>st</sup>	Bimetals
	2 <sup>nd</sup>	Soldering Materials
	3 <sup>rd</sup>	Fuse and Fuse materials.
	4 <sup>th</sup>	Dehydrating material.

Teaching Faculty