



LESSON PLAN

Discipline: ELECTRICAL ENGG.	Semester: 3 rd	Name Of The Teaching Faculty: AMIYA RANJAN DAS
Subject: ELECTRICAL ENGG. MATERIAL(TH- 4)	No. Of Days Per Week Class Allotted: 04	Semester : From Date: 01.07.2024 To Date: 08.11.2024 No. of weeks: 15
Week	Class Day	Theory Topic
1 st week	1 st	<u>UNIT-1: CONDUCTING MATERIALS:</u> ➤ 1.1: Introduction
	2 nd	➤ 1.2: Resistivity, factors affecting resistivity
	3 rd	➤ 1.3: Classification of conducting materials into low resistivity & high resistivity materials
	4 th	➤ 1.3: Classification of conducting materials into low resistivity & high resistivity materials(Continue.....)
2 nd week	1 st	➤ 1.4: Low resistivity materials & their Applications (Copper, Silver, Gold, Aluminum, steel)
	2 nd	➤ 1.4: Low resistivity materials & their Applications (Copper, Silver, Gold, Aluminum, steel)(Continue.....)
	3 rd	➤ 1.4: Low resistivity materials & their Applications (Copper, Silver, Gold, Aluminum, steel)(Continue.....)
	4 th	➤ 1.5: Stranded conductors
3 rd week	1 st	➤ 1.6: Bundled conductors
	2 nd	➤ 1.7: Low resistivity copper alloys
	3 rd	➤ 1.8: High resistivity materials & their applications (Tungsten, Carbon, Platinum, Mercury)
	4 th	➤ 1.8: High resistivity materials & their applications (Tungsten, Carbon, Platinum, Mercury)(Continue.....)
4 th week	1 st	➤ 1.8: High resistivity materials & their applications (Tungsten, Carbon, Platinum, Mercury) (Continue.....)
	2 nd	➤ 1.9: Superconductivity
	3 rd	➤ 1.10: Superconducting materials
	4 th	➤ 1.11: Application of superconductor materials
5 th week	1 st	<u>UNIT-2: SEMICONDUCTING MATERIALS:</u> ➤ 2.1: Introduction ➤ 2.2: Semiconductors
	2 nd	➤ 2.3: Electron Energy & Energy Band Theory ➤ 2.4: Excitation of Atoms
	3 rd	➤ 2.5: Insulators, Semiconductors and Conductors ➤ 2.6: Semiconductor materials
	4 th	➤ 2.7: Covalent Bonds ➤ 2.8: Intrinsic semiconductors
6 th week	1 st	➤ 2.9: Extrinsic semiconductors ➤ 2.10: N-Type materials
	2 nd	➤ 2.11: P-Type materials ➤ 2.12: Minority and majority carriers
	3 rd	➤ 2.13: Semi-conductor materials ➤ 2.14: Applications of semiconductor materials ➤ 2.14.1: Rectifiers
	4 th	➤ 2.14.2: Temperature-sensitive resistors or thermistors ➤ 2.14.3: Photo conductive cells
7 th week	1 st	➤ 2.14.4: Photovoltaic cells ➤ 2.14.5: Varistors ➤ 2.14.6: Transistors
	2 nd	➤ 2.14.7: Hall effect generators ➤ 2.14.8: Solar power
	3 rd	<u>UNIT-3: INSULATING MATERIAL:</u> ➤ 3.1: Introduction ➤ 3.2: General properties of insulating materials ➤ 3.2.1: Electrical properties ➤ 3.2.2: Visual properties
	4 th	➤ 3.2.3: Mechanical properties

8 th week	1 st	➤ 3.2.4: Thermal properties ➤ 3.2.5: Chemical properties ➤ 3.2.6: Ageing
	2 nd	➤ 3.3: Insulating materials-Classification, Properties, applications ➤ 3.3.1: Introduction
	3 rd	➤ 3.3.2: Classification of insulating materials on the basis of physical and chemical structure
	4 th	➤ 3.3.2: Classification of insulating materials on the basis of physical and chemical structure)(Continue.....)
9 th week	1 st	➤ 3.3.2: Classification of insulating materials on the basis of physical and chemical structure)(Continue.....)
	2 nd	➤ 3.3.2: Classification of insulating materials on the basis of physical and chemical structure)(Continue.....)
	3 rd	➤ 3.4: Insulating Gases 3.4.1: Introduction ➤ 3.4.2: Commonly used insulating gases
	4 th	<u>UNIT-4: DIELECTRIC MATERIALS:</u> ➤ 4.1: Introduction ➤ 4.2: Dielectric constant of permittivity ➤ 4.3: Polarization ➤ 4.4: Dielectric loss ➤ 4.5: Electric conductivity of dielectrics and their break down ➤ 4.5: Electric conductivity of dielectrics and their break down)(Continue.....)
10 th week	1 st	➤ 4.6: Properties of Dielectric
	2 nd	➤ 4.6: Properties of Dielectric
	3 rd	➤ 4.7: Applications of Dielectrics
	4 th	<u>UNIT-5: MAGNETIC MATERIALS:</u> ➤ 5.1: Introduction ➤ 5.2: Classification ➤ 5.2.1: Diamagnetism ➤ 5.2.2: Para magnetism ➤ 5.2.3: Ferromagnetism ➤ 5.3: Magnetization curve ➤ 5.4: Hysteresis ➤ 5.5: Eddy currents ➤ 5.6: Curie point ➤ 5.7: Magneto-striction ➤ 5.8: Soft and hard magnetic materials ➤ 5.8.1: Soft magnetic materials ➤ 5.8.2: Hard magnetic materials
11 th week	1 st	➤ 6.1: Introduction
	2 nd	➤ 6.2: Structural Materials
	3 rd	➤ 6.3: Protective Materials ➤ 6.3.1: Lead ➤ 6.3.2: Steel tapes, wires and strips
	4 th	➤ 6.4: Other Materials ➤ 6.4.1: Thermocouple materials ➤ 6.4.2: Bimetals ➤ 6.4.3: Soldering Materials ➤ 6.4.4: Fuse and fuse materials ➤ 6.4.5: Dehydrating material.
12 th week	1 st	➤ 6.2: Structural Materials
	2 nd	➤ 6.3: Protective Materials ➤ 6.3.1: Lead ➤ 6.3.2: Steel tapes, wires and strips
	3 rd	➤ 6.4: Other Materials ➤ 6.4.1: Thermocouple materials ➤ 6.4.2: Bimetals ➤ 6.4.3: Soldering Materials ➤ 6.4.4: Fuse and fuse materials ➤ 6.4.5: Dehydrating material.
	4 th	➤ 6.4: Other Materials ➤ 6.4.1: Thermocouple materials ➤ 6.4.2: Bimetals ➤ 6.4.3: Soldering Materials ➤ 6.4.4: Fuse and fuse materials ➤ 6.4.5: Dehydrating material.
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14 th week	1 st	➤ 6.4: Other Materials ➤ 6.4.1: Thermocouple materials ➤ 6.4.2: Bimetals ➤ 6.4.3: Soldering Materials ➤ 6.4.4: Fuse and fuse materials ➤ 6.4.5: Dehydrating material.
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15 th week	1 st	➤ 6.4: Other Materials ➤ 6.4.1: Thermocouple materials ➤ 6.4.2: Bimetals ➤ 6.4.3: Soldering Materials ➤ 6.4.4: Fuse and fuse materials ➤ 6.4.5: Dehydrating material.
	2 nd	➤ 6.4: Other Materials ➤ 6.4.1: Thermocouple materials ➤ 6.4.2: Bimetals ➤ 6.4.3: Soldering Materials ➤ 6.4.4: Fuse and fuse materials ➤ 6.4.5: Dehydrating material.
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Sign. of faculty
29.06.24

sign. of sr. lect.
29.06.24

Sign. of principal
29/6/24

Head of Dept. (HOR)
Electrical & ETC F
G. E. T. (I) OLY, . . .