ACADEMIC LESSON PLAN OF WINTER 2023

Discipline: ELECTRICAL	Semester: 3rd Sem (Sec A)	Name of the Teaching Faculty: Sandeep Mohapatra
Subject: Electrical Engineering Material	No. of days/per week class allotted: 4p/week	Semester From: 1st Aug 2023 to 30th Nov 2023 No. of Weeks: 17 weeks
1st	1st	**Unit-1: CONDUCTING MATERIALS** 1.1 Introduction, Resistivity, factors affecting resistivity, Classification of conducting materials into low-resistivity and high resistivity materials.
	2nd	1.2Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminium, Steel)
	3rd	1.3 Stranded Conductors
	4th	1.4 Bundle Conductors
2nd	1st	1.5Low resistivity copper alloys
	2nd	1.6 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	3rd	1.7Super conductivity, Superconducting Materials
	4th	1.8 Application of Super Conductor materials
3rd	1st	**UNIT-2:SEMICONDUCTING MATERIALS** 2.1 Introduction, Semiconductors
	2nd	2.2 Electron Energy and Energy band theory
	3rd	2.3 Excitation of atoms
	4th	2.4 Insulators, semiconductors and conductors
4th	1st	2.4 Insulators, semiconductors and conductors
	2nd	2.5 Semiconductor Materials
	3rd	2.6Co-valent bonds
	4th	2.7 Intrinsic semiconductors, Extrinsic semiconductors
5th	1st	2.8 N-Type materials, P-Type materials
	2nd	2.9 Minority and Majority carriers
	3rd	2.10 Semiconductor materials, Application of semiconductor materials
	4th	Application of Semiconducting materials
6th	1st	**UNIT-3:INSULATING MATERIALS** 3.1Introduction, General properties of insulating materials(contd.)
	2nd	3.2 General properties of insulating materials
	3rd	3.3 Insulting materials –classification, properties and application
	4th	3.3 introduction, Classification of insulating materials based on physical and chemical properties
7th	1st	3.3 Classification of insulating materials based on physical and chemical properties
	2nd	3.4 Insulating Gases
	3rd	3.4 Commonly used insulating gases
	4th	**UNIT-4: DIELECTRIC MATERIAL** 4.1 Introduction
8th	1st	4.2Dielectric constant of permittivity
	2nd	4.3 Polarization
	3rd	4.3 Polarization
	4th	4.4 Dielectric loss
9th	1st	4.5Electric Conductivity of Dielectrics and their breakdown
	2nd	4.5 Electric Conductivity of Dielectrics and their breakdown
	3rd	4.6properties of Dielectrics
	4th	4.7 Application of Dielectrics
10th	1st	**UNIT-5:MAGNETIC MATERIALS** 5.1 Introduction
	2nd	5.2 Classification
	3rd	5.2 Diamagnetism
	4th	5.2 Paramagnetism

11th	1st	5.2 Ferromagnetism
	2nd	5.3 Magnetization Curve
	3rd	5.4Hysteresis
	4th	5.4 Hysteresis(contd.)
12th	1st	5.5 Eddy currents
	2nd	5.6 Curie point, Magneto-striction
	3rd	5.7 Soft magnetic materials
	4th	5.7 Soft magnetic materials
13th	1st	5.8 Hard magnetic materials
	2nd	5.8 Hard magnetic materials
	3rd	**UNIT-6:MATERIALS FOR SPECIAL PURPOSES** 6.1Introduction
	4th	6.2 structural materials
14th	1st	6.3 protective materials: lead
	2nd	6.3 steel tapes
	3rd	6.3 wires and strips
	4th	6.4 Other Materials: Thermocouple materials
15th	1st	6.4 Bimetals
	2nd	6.4soldering materials
	3rd	6.4 Fuse and fuse materials
	4th	6.4 Dehydrating materials
16th	1st	REVISION
	2nd	REVISION
	3rd	REVISION
	4th	REVISION
17th	1st	REVISION
	2nd	REVISION
	3rd	REVISION
	4th	REVISION

Signature of Teaching Faculty