BHUBANANANDA ORISSA SCHOOL OF ENGINEERING,CUTTACK

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

SUBJECT : ELECTRICAL ENGINEERING MATERIALS(TH-4) **ACADEMIC SESSION: 2024-25**

FACULTY : MR.GANESH PRADHAN **SEMESTER:3RD**

SECTION:B

Discipline: **Electrical Engg.**	Semester:**3rd(B)**	Name of the teaching faculty: Mr.**Ganesh Pradhan**
Subject-**Electrical Engineering Materials**	No. of Days/per week class allotted:**04 PERIODS/WEEK** **TUE-1,THU-1,FRI-1, SAT-1 Period)**	Semester: From Date: 01**/07/2023**4 To Date: 08**/11/2024** No. of weeks: **18 WEEKS**
Week	Class Day	Theory/Practical Topics
1st (01/07/2024-06/07/2024)	02/07/2024	**CONDUCTING MATERIAL** 1.1 Introduction
	04/07/2024	1.2 Resistivity, factors affecting resistivity
	05/07/2024	1.3 Classification of conducting material into low resistivity and high resistivity
	06/07/2024	1.4 Low Resistivity Materials and their Applications
2nd (08/07/2024-13/08/2024)	09/07/2024	1.4.1 Copper 1.4.2 Silver
	11/07/2024	1.4.3 Gold
	12/07/2024	1.4.4 Aluminium
	13/07/2024	1.4.5 Steel
3rd (15/07/2023-20/07/2024)	16/07/2024	1.5 Stranded conductors
	18/07/2024	1.6 Bundled conductors
	19/07/2024	1.7 Low resistivity copper alloy
	20/07/2024	1.8 High Resistivity Materials and their Applications
4th (22/07/2024-27/07/2024)	23/07/2024	1.8 High Resistivity Materials and their Applications
	25/07/2024	1.8.1. Tungsten 1.8.2 Carbon
	26/07/2024	1.8.3 Platinum 1.8.4 Mercury
	27/07/2024	1.9 Superconductivity
5th (29/07/2024-03/08/2024)	30/07/2024	1.10 Super conducting material and their application 1.11 Aplication of super conducting materials

	01/08/2024	**2.Semiconducting Materials** 2.1 Introduction 2.2Semiconductors
	02/08/2024	2.3 Electron Energy and Energy Band Theory 2.4 Excitation of Atoms
	03/08/2024	2.5 Insulators, Semiconductors and Conductors
6th (05/08/2024-10/08/2024)	06/08/2024	2.6 Semiconductor Materials 2.7 Covalent Bonds
	08/08/2024	2.8 Intrinsic Semiconductors 2.9 Extrinsic Semiconductors
	09/08/2024	2.10 N-Type Materials 2.11 P-Type Materials
	10/08/2024	2.12 Minority and Majority Carriers 2.13Semi-Conductor Materials
7th (12/08/2024-17/08/2024)	13/08/2024	2.14 Rectifiers
	16/08/2024	2.14.1Temperature-sensitive resisters or thermistors
	17/08/2024	2.14.3 Photovoltaic cells 2.14.4 Photoconductive cells
8th (19/08/2024-24/08/2024)	20/08/2024	**Class test 1**
	22/08/2024	2.14.5 Varistors 2.14.6 Transistor 2.14.7 Hall efeect generator
	23/08/2024	2.14.8 solar power
	24/08/2024	**3.Insulating Materials:** 3.1 Introduction 3.2 General properties of Insulating Materials
9th (26/08/2024-31/08/2024)	27/08/2024	3.2.1 Electrical properties
	29/08/2024	3.2.2 Visual properties
	30/08/2024	3.2.3Mechanical properties 3.2.4Thermal properties
	31/08/2024	3.2.5 Chemical properties 3.2.6 Ageing

10th (02/09/2024-07/09/2024)	03/09/2024	3.3Insulating Materials – Classification, properties, applications
	05/09/2024	3.3.1Introduction 3.3.2Classification of insulating materials on the basis physical and chemical structure
	06/09/2024	3.4 insulating gases 3.4.1 introduction
11th (09/09/2024-14/09/2024)	10/09/2024	3.4.2 Commonly used insulating gases
	12/09/2024	**Internal assessment 1**
	13/09/2024	**Internal assessment 1**
	14/09/2024	**4. Dielectric Material** 4.1 Introduction
12th (16/09/2024-21/09/2024)	17/09/2024	4.2 Dielectric constant of permitivity
	19/09/2024	4.3 Polarization
	20/09/2024	4.4 Dielectric loss
	21/09/2024	4.5 electric conductivity of dielectrics and their break down
13th (23/09/2024-28/09/2024)	24/09/2024	4.6 Properties of Dielectrics
	26/09/2024	4.7Application of Dielectrics
	27/09/2024	**5.Magnetic Material** 5.1 Introduction
	28/09/2024	5.2 Classification 5.2.1 Diamagnetism
14th (30/09/2024-05/10/2024)	01/10/2024	5.2.2 Para magnetism 5.2.3 Ferromagnetism
	03/10/2024	5.3 Magnetization Curve
	04/10/2024	5.4 Hysteresis
	05/10/2024	5.5 Eddy current

15th (14/10/2024-19/10/2024)	15/10/2024	5.6 cuire point 5.7magneto striction
	17/10/2024	5.8 Soft and hard magnetic material
	18/10/2024	5.8.1 Soft magnetic material 5.8.2 Hard magnetic material
	19/10/2024	**6.Mateials for Special Purpose** 6.1 Introduction
16th (21/10/2024-26/10/2024)	22/10/2024	6.2 Structural Materials 6.3 Protective Materials
	24/10/2024	6.4 Other Materials 6.3.1 Lead
	25/10/2024	**Class test 2**
	26/10/2024	6.4.1 Thermocouple materials
17th (28/10/2024-02/11/2024)	29/10/2024	6.4.2 Bimetals
	01/11/2024	6.4.3 Soldering Materials
	02/11/2024	6.4.4 Fuse and Fuse materials
18th (04/11/2024-08/11/2024)	05/11/2024	6.4.5 Dehydrating Materials
	07/11/2024	**REVISION**
	08/11/2024	**REVISION**