NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT: Th-4 (ELECTRICAL ENGINIERING MATERIAL)

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Conducting materials	16	16
2	Semiconducting materials	10	10
3	Insulating materials	9	9
4	Dielectric materials	8	8
5	Magnetic materials	8	8
6	Material for special purposes	9	9
	Total Period:	60	60

Discipline: EEE	Semester: 3rd	**Name of the Teaching Faculty:** Er.Rakesh Kumar Sethi
Week	**Class Day**	**Theory / Practical Topics**
1st	1st	**Conducting Materials :** 1. 1 Introduction 1 . 2 Resistivity, factors affecting resistivity
	2nd	1 . 3 Classification of conducting materials into low-resistivity and high resistivity materials
	3rd	1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
	4th	1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
2nd	1st	1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
	2nd	1 . 5 Stranded conductors 1 . 6 Bundled conductors
	3rd	1 . 5 Stranded conductors 1 . 6 Bundled conductors
	4th	1 . 7 Low resistivity copper alloys
3rd	1st	1 . 7 Low resistivity copper alloys
	2nd	1 . 8 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	3rd	1 . 8 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	4th	1 . 8 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)
	1st	1 . 8 High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)

4th	2nd	1 . 9 Superconductivity
	3rd	1 . 10 Superconducting materials
	4th	1 . 11 Application of superconductor materials
5th	1st	**Semiconducting Materials:** 2 . 1 Introduction 2 . 2 Semiconductors
	2nd	2 . 3 Electron Energy and Energy Band Theory 2 . 4 Excitation of Atoms
	3rd	2 . 5 Insulators, Semiconductors and Conductors 2 . 6 Semiconductor Materials
	4th	2 . 7 Covalent Bonds 2 . 8 Intrinsic Semiconductors
6th	1st	2 . 9 Extrinsic Semiconductors 2 . 10 N-Type Materials
	2nd	2 . 11 P-Type Materials 2 . 12 Minority and Majority Carriers 2 . 13 Semi-Conductor Materials
	3rd	2 . 14 Applications of Semiconductor materials Rectifiers Temperature-sensitive resisters or thermistors
	4th	Photoconductive cells Photovoltaic cells
7th	1st	Varisters Transistors
	2nd	Hall effect generators Solar power
	3rd	**3.Insulating Materials:** 3 . 1 Introduction 3 . 2 General properties of Insulating Materials

	4th	Electrical properties Visual properties
8th	**1st**	3.2.3 Mechanical properties
	2nd	Thermal properties Chemical properties
	3rd	3.2.6 Ageing Insulating Materials – Classification, properties, applications Introduction
	4th	3.3.2 Classification of insulating materials on the basis physical and chemical structure
9th	**1st**	3.3.2 Classification of insulating materials on the basis physical and chemical structure
	2nd	Insulating Gases Introduction. Commonly used insulating gases
	3rd	Insulating Gases Introduction. Commonly used insulating gases
	4th	Insulating Gases Introduction. Commonly used insulating gases
10th	**1st**	**4. Dielectric Materials:** Introduction
	2nd	4.2 Dielectric Constant of Permittivity
	3rd	4.3 Polarization
	4th	4.4 Dielectric Loss
	1st	4.5 Electric Conductivity of Dielectrics and their Break Down

11th	2nd	4.5 Electric Conductivity of Dielectrics and their Break Down
	3rd	4.6 Properties of Dielectrics.
	4th	4.7 Applications of Dielectrics
12th	1st	**Magnetic Materials:** 5.1 Introduction
	2nd	Classification Diamagnetism Para magnetism
	3rd	Classification Diamagnetism Para magnetism
	4th	Magnetization Curve Hysteresis
13th	1st	Eddy Currents Curie Point
	2nd	5.7 Magneto-striction
	3rd	Soft and Hard magnetic Materials Soft magnetic materials Hard magnetic materials
	4th	Soft and Hard magnetic Materials Soft magnetic materials Hard magnetic materials
14th	1st	**6 Materials for Special Purposes** Introduction
	2nd	6.2 Structural Materials
	3rd	Protective Materials Lead Steel tapes, wires and strips

	4th	Protective Materials Lead Steel tapes, wires and strips
15th	**1st**	Other Materials Thermocouple materials Bimetals
	2nd	6.4.3 Soldering Materials
	3rd	6.4.4 Fuse and Fuse materials
	4th	6.4.5 Dehydrating material.