Lesson Plan		
	Discipline:Electrical Engineering Semester-3rd Winter 2023	**Name of the Teachng Faculty: Smruti Ranjan Mohanty Sr. Lect.(Electrical)**
Sl. No.	**Subject-Electrical Engineering Material**	**Semester From date: 01/08/2023 To date: 30/11/2023 No of weeks: 15**
	Weeks/Months	**Topic**
1	1st Week	1 . 1 Introduction
		1 . 2 Resistivity, factors affecting resistivity
		1 . 3 Classification of conducting materials into low-resistivity materials
		1 . 3 Classification of high resistivity materials
2	2nd Week	1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
		1 . 4 Low Resistivity Materials and their Applications. (Copper, Silver, Gold, Aluminum, Steel)
		1 . 5 Stranded conductors.
		1 . 6 Bundled conductors.
3	3rd Week	1 . 7 Low resistivity copper alloys.
		1 . 8 High Resistivity Materials and their Applications(Tungsten,)
		1 . 8 High Resistivity Materials and their Applications(Carbon)
		Platinum
4	4th Week	Mercury
		1 . 9 Superconductivity.
		1 . 10 Superconducting materials.
		1 . 11 Application of superconductor materials.
5	5th Week	**Semiconducting Materials:** 2 . 1 Introduction
		2 . 2 Semiconductors 2 . 3 Electron Energy and Energy Band Theory
		2 . 4 Excitation of Atoms 2 . 5 Insulators, Semiconductors and Conductors2 . 4 Excitation of Atoms 2 . 5 Insulators, Semiconductors and Conductors
		2 . 6 Semiconductor Materials 2 . 7 Covalent Bonds
6	6th Week	2 . 8 Intrinsic Semiconductors 2 . 9 Extrinsic Semiconductors
		2 . 10 N-Type Materials 2 . 11 P-Type Materials
		2 . 12 Minority and Majority Carriers 2 . 13 Semi-Conductor Materials
		14 Applications of Semiconductor materials 2.14.1 Rectifiers
7	7th Week	2.14.2 Temperature-sensitive resisters or thermistors 2.14.3 Photoconductive cells 2.14.4 Photovoltaic cells
		Varisters 2.14.6 Transistors 2.14.7 Hall effect generators 2.14.8 Solar power

		Insulating Materials: **3 . 1 Introduction**
		3 2 General properties of Insulating Materials 3 2 1 Electrical properties
8	8th Week	3 2 2 Visual properties 3 2 3 Mechanical properties
		3 2 4 Thermal properties 3 2 5 Chemical properties
		3.2.6 Ageing 3.3 Insulating Materials – Classification, properties, applications
		3.3.1 Introduction 3.3.2 Classification of insulating materials on the basis physical and chemical structure.
9	9th Week	3.4 Insulating Gases,3.4.2 Commonly used insulating gases
		Dielectric Materials: 4.1 Introduction
		4.2 Dielectric Constant of Permittivity
		4.3 Polarization
10	10th Week	4.4 Dielectric Loss
		4.5 Electric Conductivity of Dielectrics and their Break Down
		4.6 Properties of Dielectrics.
		4.7 Applications of Dielectrics.
11	11th Week	Magnetic Materials: 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
12	12th Week	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
		5.8.1 Soft magnetic materials
13	13th Week	Materials for Special Purposes 6.1 Introduction
		6.2 Structural Materials
		6.3 Protective Materials 6.3.1 Lead
		6.3.2 Steel tapes, wires and strips
14	14th Week	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.
15	15th week	Revision

29/7/23

Sr. Lect (B Tech)