

Subject: Electrical	Semester: 3 rd	Name of the Teaching Faculty: En. Tapas Ku. Mohanty.	
Electrical Engg. Materials	No of Days/Week Class Allotted: 4	Semester From date: 1.10.2021 To date: 15.1.2022	No. of Weeks:

EK	Class Day	Theory Topics
	1st	Conducting materials: Introduction
	2nd	Resistivity, factors affecting resistivity.
	3rd	Classification of conducting materials into low-resistivity and high resistivity materials
	4th	Low resistivity materials and their applications.
	5th	
	1st	Stranded conductors
	2nd	Bundled conductors.
	3rd	Low resistivity copper alloys
	4th	High resistivity materials and their Applications [Tungsten, Carbon, Platinum, Mercury]
	5th	
	1st	Superconductivity. Superconducting materials & applications of superconducting materials.
	2nd	Applications of superconductor materials.
	3rd	Semiconducting materials: Introduction.
	4th	Semiconductors.

WEEK	Class Day	Theory Topics
1st	1st	Electron Energy & Energy Band Theory
	2nd	Excitation of Atoms
	3rd	Insulators, Semiconductors & Conductors.
	4th	Semiconductor materials.
	5th	
2nd	1st	Covalent Bonds
	2nd	Intrinsic Semiconductor.
	3rd	Extrinsic Semiconductors
	4th	N-type Materials
	5th	
3rd	1st	P-type Materials
	2nd	Minority & Majority Carrier
	3rd	Semi-Conductor Materials
	4th	Application of semiconductor materials: Rectifier.
	5th	Thermistors.

Discipline: Electrical	Semester: 3rd	Name of the Teaching Faculty: En. Tapan K. Mishra	
Subject: Electrical Engg. materials	No of Days/Week Class Allowed: 4	Semester From date: 1.10.2021 to date: 10.1.2022	No. of Weeks:
WEEK	Class Day	Theory Topics	
7 th	1st	Temperature - sensitive resistors or thermistors.	
	2nd	Photoconductive cells.	
	3rd	Varistors.	
	4th	Transistors	
	5th		
8 th	1st	Hall effect generator	
	2nd	Solar Power	
	3rd	Insulating Materials: Introduction.	
	4th	General properties of insulating materials: Electrical Properties.	
	5th	V	
9 th	1st	Visual Properties, Mechanical Properties.	
	2nd	Thermal Properties, Chemical Properties.	
	3rd	Ageing.	
	4th	Insulating materials classification properties, applications: Introduction.	
	5th		

WEEK	Class Day	Theory Topics
10 th	1st	Classification of insulating materials on the basis physical and chemical structure.
	2nd	Insulating Gases Introduction, commonly used insulating gases.
	3rd	Dielectric Materials; Introduction.
	4th	Dielectric const. of Permittivity.
	5th	Polarization.
11 th	1st	Dielectric Loss
	2nd	Electric conductivity of dielectrics and their break down.
	3rd	Properties of dielectric
	4th	Application of Dielectric.
	5th	
12 th	1st	Magnetic Materials; Introduction.
	2nd	Dielectric Const of Permittivity. Classification; Diamagnetism, Paramagnetism, Ferromagnetism.
	3rd	Magnetization. Magnetization Curve
	4th	Dielectric Loss. Hysteresis
	5th	