



ACADEMIC LESSION PLAN FOR SESSION - 2021-22.

DEPT. OF ELECTRICAL ENGG., GOVT. POLYTECHNIC, BALASORE.

NAME OF THE FACULTY:- ANITA SHIAL(Lect. in EE)

ELECTRICAL ENGINEERING MATERIAL

Course Code: Th-4

Theory : 4 P/W

Total Period s: 60P/ Sem

Examination: 3 Hours

Sem : 3RD EE

Class Test : 20 Marks

End Semester Exam : 80marks

TOTAL MARKS : 100 Marks

Start :- 1st October 2021

WEEK	PERIOD	TOPIC
1 st	1 st	Introduction conducting materials.
	2 nd	Resistivity, factors affecting resistivity
	3 rd	Classification of conducting materials into low-resistivity and high resistivity materials
	4 th	Low Resistivity Materials and their Applications
2 nd	1 st	Copper Silver
	2 nd	Gold Aluminum Steel
	3 rd	Stranded conductors
	4 th	Bundled conductors
3 rd	1 st	Low resistivity copper alloys
	2 nd	High Resistivity Materials and their Applications
	3 rd	Tungsten Carbon
	4 th	Platinum Mercury
4 th	1 st	Superconductivity
	2 nd	Superconducting materials
	3 rd	Application of superconductor materials
	4 th	Introduction Semiconductors
5 th	1 st	Electron Energy and Energy Band Theory
	2 nd	Excitation of Atoms Insulators, Semiconductors and Conductors
	3 rd	Semiconductor Materials
	4 th	Covalent Bonds

6 th	1 st	Intrinsic Semiconductors Extrinsic Semiconductors
	2 nd	N-Type Materials & P-Type Materials
	3 rd	Minority and Majority Carriers Semi-Conductor Materials
	4 th	Applications of Semiconductor materials Rectifiers Temperature-sensitive resistors or thermistors
7 th	1 st	Photoconductive cells Photovoltaic cells Varistors
	2 nd	Transistors Hall effect generators Solar power
	3 rd	Introduction of Insulating Materials
	4 th	General properties of Insulating Materials Electrical properties
8 th	1 st	Visual properties Mechanical properties
	2 nd	Thermal properties
	3 rd	Chemical properties Ageing
	4 th	Insulating Materials – Classification, properties, applications
9 th	1 st	Introduction Classification of insulating materials on the basis physical and chemical structure
	2 nd	Insulating Gases
	3 rd	Introduction & Commonly used insulating gases
	4 th	Introduction of dielectric materials
10 th	1 st	Dielectric Constant of Permittivity
	2 nd	Polarisation
	3 rd	Dielectric Loss
	4 th	Electric Conductivity of Dielectrics and their Break Down
11 th	1 st	Properties of Dielectrics
	2 nd	Applications of Dielectrics
	3 rd	Magnetic Materials: Introduction
	4 th	Classification 1 Diamagnetism 2 Para magnetism 3 Ferromagnetism
12 th	1 st	Magnetization Curve
	2 nd	Hysteresis

	3 rd	Eddy Currents
	4 th	Curie Point
13 th	1 st	Magneto-striction
	2 nd	Soft and Hard magnetic Materials 1 Soft magnetic materials 2 Hard magnetic materials
	3 rd	Materials for Special Purposes Introduction
	4 th	Structural Materials
14 th	1 st	Protective Materials Lead
	2 nd	Steel tapes, wires and strips
	3 rd	Thermocouple materials
	4 th	Bimetals
15 th	1 st	Soldering Materials
	2 nd	Fuse and Fuse materials
	3 rd	Dehydrating material
	4 th	Tutorial