



LESSON PLAN

SUB: ELECTRICAL ENGINEERING MATERIAL

BRANCH:- ELECTRICAL ENGG.


SEMESTER: 3rd

SESSION:2024-2025

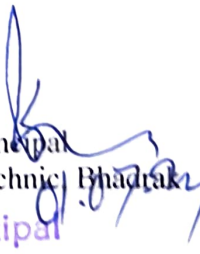
NAME OF FACULTY: NIBEDITA HO



**GOVERNMENT POLYTECHNIC,
BHADRAK**


HOD (ELECT.)
G.P.BHADRAK


Academic Co-ordinator
Academic Co-ordinator


Principal
Govt. Polytechnic Bhadrak
Principal
Govt. Polytechnic
Bhadrak

Discipline: Electrical Engg.		Semester: 3 rd	Name of the Teaching Faculty : Nibedita Ho
Subject: Electrical Engineering Material	No. of Days/per week class allotted:4	Semester from date: 01.07.2024 To Date: 08.11.2024	
Week	Class Day	No. of Weeks:15	Theory
1 st	1 st	Introduction Conducting Materials	
	2 nd	Atomic structure, Inter atomic bonds	
	3 rd	Resistivity, factors affecting resistivity	
	4 th	Classification of conducting materials into low-resistivity and high resistivity materials	
2 nd	1 st	Low Resistivity Materials and their Applications; (Copper, Silver, Gold, Aluminum, Steel)	
	2 nd	Stranded conductors	
	3 rd	Bundled conductors	
	4 th	Low resistivity copper alloys	
3 rd	1 st	High Resistivity Materials and their Applications(Tungsten, Carbon, Platinum, Mercury)	
	2 nd	Superconductivity	
	3 rd	Superconducting materials	
	4 th	Application of superconductor materials	
4 th	1 st	Introduction of Semiconducting Materials	
	2 nd	Electron Energy and Energy Band Theory	
	3 rd	Excitation of Atoms	
	4 th	Insulators, Semiconductors and Conductors	
5 th	1 st	Semiconductor Materials	
	2 nd	Covalent Bonds	
	3 rd	Intrinsic Semiconductors	
	4 th	Extrinsic Semiconductors	
6 th	1 st	N-Type Materials, P-Type Materials	
	2 nd	Minority and Majority Carriers	
	4 th	Applications of Semiconductor materials: Rectifiers, Temperature-sensitive resistors or thermistors	
	1 st	Photoconductive cells, Photovoltaic cells, Varistors, Transistors, Hall effect generators, Solar power	

7 th	2 nd	Introduction Insulating Materials
	3 rd	General properties of Insulating Materials Electrical properties
	4 th	Visual properties, Mechanical properties
	1 st	Thermal properties
8 th	2 nd	Chemical properties, Ageing
	3 rd	Insulating Materials – Classification, properties, application of fibrous materials
	4 th	Impregnated fibrous materials, Non-resinous materials
	1 st	Insulating liquids, Ceramics, mica & Mica Products
9 th	2 nd	Asbestos & asbestos products, glass, Natural & synthetic rubbers
	3 rd	Glass, Natural & synthetic rubbers.
	4 th	Insulating resins & their products, laminates
	1 st	Adhesives, enamels & varnishes
10 th	2 nd	Insulating gases - Introduction, commonly used insulating gases.
	3 rd	Introduction of Dielectric Materials, Dielectric Constant of Permittivity
	4 th	Polarization
	1 st	Dielectric Loss
11 th	2 nd	Electric Conductivity of Dielectrics and their Break Down (Solid)
	3 rd	Liquid & Gaseous dielectric Break Down
	4 th	Properties of Dielectrics.
	1 st	Applications of Dielectrics.

12 th	2 nd	Introduction of Magnetic Materials
	3 rd	Classification :Diamagnetism, Para magnetism, Ferromagnetism
	4 th	Magnetization Curve
	1 st	Hysteresis
13 th	2 nd	Eddy Currents, Curie Point, Magnetostriction
	3 rd	Soft magnetic materials
	4 th	Hard magnetic materials
	1 st	Introduction of Materials for Special Purposes
14 th	2 nd	Structural Materials
	3 rd	Protective Materials – Lead, Steel tapes, wires and strips
	4 th	Steel tapes, wires and strips
	1 st	Bimetals
15 th	2 nd	Soldering Materials
	3 rd	Fuse and Fuse materials.
	4 th	Dehydrating material.


 Signature of the faculty

Lect.in Elect.Engg.
 Govt.Poly.Bhadraik

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	4 th	Dehydrating material.

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