

LESSON PLAN

Name of the Institute:		C. V. RAMAN POLYTECHNIC
Department:		ELECTRICAL ENGINEERING
Semester/Division/Branch:		3 rd SEM/EE
Subject Name with code:		ELECTRICAL ENGINEERING MATERIAL (TH-4)
Total No. of Class (Required):		60
Faculty Name:		SAUBHAGYA RANJAN BEHERA
Class No.	Brief description of the Topic/Chapter to be taught	Remarks
1	Introduction to conductivity of metals	
2	Resistivity, factors affecting resistivity	
3	Classification of conducting materials into low & high resistivity materials	
4	Low Resistivity Materials and their Applications (Copper, Silver,)	
5	Low Resistivity Materials and their Applications (Gold, Aluminum, Steel))	
6	Problems on Resistivity and temperature of the material	
7	What is a Stranded conductors with examples	
8	What is Bundled conductors with examples	
9	Solving of problems on different types of conductors	
10	Low resistivity copper alloys with examples	
11	Problems on low resistivity copper alloys	
12	High Resistivity Materials and their Applications (Tungsten, Carbon)	
13	High Resistivity Materials and their Applications (Platinum, Mercury)	
14	Concept of super conductivity	
15	Superconducting materials with applications	
16	Problems on conductivity of a material	
17	Introduction to semiconductor	

18	Semiconductors materials	
19	Electron Energy and Energy Band Theory	
20	Electron Energy and Energy Band Theory for semiconductors	
21	Excitation of Atoms by different methods	
22	Difference between Insulators, Semiconductors and Conductors	
23	Different types of Semiconductor Materials	
24	concept of Covalent Bonds	
25	Concept of Intrinsic Semiconductors	
26	Examples of intrinsic Semiconductors	
27	Concept of Extrinsic Semiconductors	
28	Examples of Extrinsic Semiconductors	
29	N-Type Materials with examples	
30	P-Type Materials with examples	
31	Minority and Majority Carriers Concept	
32	Applications of Semiconductor materials (Rectifiers)	
33	Temperature-sensitive resistors or thermistors as semiconductor	
34	Photoconductive cells, Photovoltaic cells	
35	Varistors, Transistors as semiconductors	
36	Concept of Hall effect generators as conductors	
37	Introduction to Insulating Materials	
38	General properties of Insulating Materials (Electrical properties, Visual properties)	
39	General properties of Insulating Materials (Mechanical properties, Thermal properties)	
40	General properties of Insulating Materials (Chemical properties, Ageing)	
41	Classification of insulating materials on the basis physical	
42	Classification of insulating materials on the basis chemical structure	

43	Introduction to Insulating Gases	
44	Commonly used insulating gases	
45	Introduction Dielectric Materials	
46	Dielectric Constant of Permittivity	
47	Problems on Dielectric Constant	
48	Concept of Polarization	
49	Concept of Dielectric Loss	
50	Problems on Polarization and Dielectric Constant	
51	Electric Conductivity of Dielectrics and their Break Down	
52	Properties of Dielectrics and application	
53	Introduction to Magnetic Materials	
54	Classification(Diamagnetic, Paramagnetic, Ferromagnetic)	
55	Magnetization Curve, Hysteresis, Eddy Currents, Curie Point	
56	Soft magnetic materials, Hard magnetic materials	
57	Introduction Structural Materials as special purpose materials	
58	Lead, Steel tapes, wires and strips as Special Purpose Material	
59	Soldering Materials, Fuse and Fuse materials, Dehydrating material.	
60	Bimetals, Soldering Materials	

Sankhayan Rajan Behara
Signature of the Faculty

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Signature of the H.O.D