

The Maharaja Sayajirao University of Baroda Polytechnic Diploma in Electronics & Communication Engg. (HPP)				ACADEMIC YEAR 2021-2022	
Year	I	FUNDAMENTAL OF ELECTRICAL ENGINEERING (ELE3105)	Lecture/LabHrs per week	4/2	
Semester	I		Max marks	100	
Pre-Requisite: Basic Mathematics, Basic Electronics					
CO1	Interpret Ohm’s law, temperature effects, and resistor connections including series, parallel, star, and delta.				
CO2	Explain electromagnetic principles, EMF induction mechanisms, and inductor behaviour.				
CO3	Describe electrostatic laws, capacitor characteristics, and capacitance combinations.				
CO4	Differentiate AC fundamentals, related terminology, and single-phase/three-phase systems.				
CO5	Classify electrical machines and power systems based on their principles, construction, types, applications, and power sources.				
BT	1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation				
COURSE CONTENT/SYLLABUS					
Unit	Unit Name		Hrs	Weightage	CO
1	Ohm’s Law, Temperature coefficient, series and parallel connections of resistors, star and delta connection of resistors. Related examples		8	16	CO1
2	Electromagnetism, terminologies related to Electromagnetic field, Induction of EMF, Principles and Laws related to statically induced EMF, Dynamically induced EMF. Inductance, Inductor, Related examples.		12	20	CO2
3	Electrostatics, Coloumb’s Law, Terms related to Electrostatics, Capacitor, capacitance series and parallel connections of capacitors.		10	18	CO3
4	AC fundamentals, Related terms, single phase and three phase supply, related terms.		8	14	CO4
5	Types of Machines 1. DC Machines, 2. AC Machines 1.DC Generators: working principal and construction 2. DC motors: Working Principle, Types of Motors and their applications 3. AC generator: Working Principle and Construction. 4. AC Motor: Working Principle, types of Motors and Their applications		10	18	CO5
6	Introduction of Power system and Various sources of Power generation		8	14	CO5
			56	100	
REFERENCE BOOKS:					
1.	ELECTRICAL TECHNOLOGY BY B.L. Thareja Vol –I				
2.	ELECTRICAL TECHNOLOGY BY B.L. Thareja Vol –II				
3.	ELECTRICAL TECHNOLOGY BY B.L. Thareja Vol –III				
4.	Electrical Power System By V.K. Mehta				