

# Lesson Plan

Name of the faculty : VIKASH KUMAR  
Discipline : Electrical Engg.  
Semester : 4th  
Subject: Utilization of Electrical Energy  
Lesson Plan Duration : 15 weeks (from 15 Jan. 2026 to April 2026)

Work load (Lecture/Practical) per week : Lectures-03

Week	Theory	
	Lecture day	Topic (Including assignment/test)
1st	1st	Introduction
	2nd	terms used in illumination, laws of illumination, indoor and outdoor illumination levels.
	3rd	<b>Discharge lamps, MV and SV lamps</b>
2nd	1st	<b>General ideas about time switches, street lighting, flood lighting and decorative lighting.</b>
	2nd	<b>UNIT II Advantages and methods of electric heating, resistance heating,</b>
	3rd	<b>induction heating, and dielectric heating.</b>
3rd	1st	<b>Electric welding, resistance and arc welding</b>
	2nd	<b>electric welding equipment, comparison between A.C. and D.C, Welding.</b>
	3rd	REVISION OF UNIT 1 & 2
4th	1st	<b>UNIT III</b> <b>Electrolytic Processes Need of electro-deposition; Laws of electrolysis</b>
	2nd	<b>process of electro-deposition - clearing, operation, deposition of metals, polishing and buffing;</b>
	3rd	<b>Principle of galvanizing and its applications; Principles of anodizing and its applications;</b>

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		<b>Electropainting of non-conducting materials,</b>
5th	2nd	<b>Electrical Circuits used in Refrigeration</b>
	3rd	<b>Air Conditioning</b>
6th	1st	<b>Water Coolers.</b>
	2nd	<b>REVISION COPY CHECKING</b>
	3rd	<b>REVISION COPY CHECKING</b>
7th	1st	<b>UNIT IV Electric Drives</b>  <b>Electric Drive and its part, Advantages of electric drives,</b>
	2nd	<b>Types of electric Drives,</b>
	3rd	<b>Characteristics of different mechanical loads,</b>
8th	1st	<b>Types of motors used in used in Industrial Drives,</b>
	2nd	<b>Factors affecting selection of motors,,</b>
	3rd	<b>Applications of Electric Drive.</b>
9th	1st	<b>Introduction to Energy efficient drives.</b>
	2nd	<b>COPY CHECKING</b>
	3rd	<b>REVISION</b>
10th	1st	
	2nd	<b>UNIT V Electrical Traction Advantages of electric traction,</b>
	3rd	<b>Concept of diesel electric Traction system</b>
11th	1st	<b>Systems of Track</b>  <b>Electrification (DC &amp; AC system</b>
	2nd	<b>types of services – urban, sub-urban, and main line and their</b>
	3rd	<b>speed-time curves.</b>
12th	1st	<b>Electrical block diagram and</b>
	2nd	<b>accessories of an electric locomotive</b>
	3rd	<b>different accessories for track electrification such as overhead centenary</b>

		wire, conductor railsystem, current collector / pentagraph etc
13th	1st	Power supply arrangements and types of motors used for electric traction.
	2nd	Starting and braking of electric locomotives
	3rd	Introduction to EMU and metro railways
14th	1st	COPY CHECKING
	2nd	REVISION
	3rd	REVISION
15th	1st	REVISION
	2nd	REVISION
	3rd	REVISION

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