

LESSON PLAN FOR ACADEMIC SESSION: 2023-24(Winter-23)

Discipline: Electrical Engineering		Semester : 5th	Name of the Teaching Faculty :PRADIP KUMAR MOHANTY
Subject : UEET	No. of days / week class allotted		Semester From : 01.08.2023 to 30.11.2023 Nos. of Weeks per semester : 15
Week	Class Day	Chapter	Theory Topics
1 ST	1 st	Chapter-1 ELECTROLYTIC PROCESS:	1.1. Definition and Basic principle of Electro Deposition
	2 nd		1.2. Important terms regarding electrolysis.
	3 rd		1.3. Faradays Laws of Electrolysis
	4 th		1.4. Definitions of current efficiency, Energy efficiency
2 ND	1 st		1.5. Principle of Electro Deposition
	2 nd		1.6. Factors affecting the amount of Electro Deposition.
	3 rd		1.7. Factors governing the electro deposition.
	4 th		1.8. State simple example of extraction of metals 1.9. Application of Electrolysis.
3 RD	1 st	Chapter-2 ELECTRICAL HEATING	2.1. Advantages of electrical heating
	2 nd		2.2. Mode of heat transfer and Stephen's Law.
	3 rd		2.3. Principle of Resistance heating. (Direct resistance and indirect resistance heating.)
	4 th		2.4. Discuss working principle of direct arc furnace and indirect arc furnace.
4 TH	1 st		2.5. Principle of Induction heating. 2.5.1. Working principle of direct core type, vertical core type and indirect core type Induction furnace.
	2 nd		2.5.2. Principle of coreless induction furnace and skin effect.
	3 rd		2.6. Principle of dielectric heating and its application.
	4 th		2.7. Principle of Microwave heating and its application.
5 TH	1 st	Chapter-3 PRINCIPLES OF ARC WELDING	3.1. Explain principle of arc welding.
	2 nd		3.2. Discuss D. C. & A. C. Arc phenomena.
	3 rd		3.3. D.C. & A. C. arc welding plants of single and multi-operation type
	4 th		Continue.....
6 TH	1 st		3.4. Types of arc welding
	2 nd		3.5. Explain principles of resistance welding.
	3 rd		3.6. Descriptive study of different resistance welding methods.
	4 th		Continue.....
7 TH	1 st	Chapter-4 ILLUMINATION	4.1. Nature of Radiation and its spectrum 4.2. Terms used in Illuminations. [Lumen, Luminous intensity, Intensity of illumination, MHCP, MSCP, MHSCP, Solid angle, Brightness, Luminous efficiency.]
	2 nd		4.3. Explain the inverse square law and the cosine law 4.4. Explain polar curves.

	3 rd		4.5. Describe light distribution and control. Explain related definitions like maintenance factor and depreciation factors.
	4 th		4.6. Design simple lighting schemes and depreciation factor.
8 TH	1 st		4.7. Constructional feature and working of Filament lamps, effect of variation of voltage on working of filament lamps.
	2 nd		4.8. Explain Discharge lamps.
	3 rd		4.9. State Basic idea about excitation in gas discharge lamps.
	4 th		4.10. State constructional features and operation of Fluorescent lamp. (PL and PLL Lamps)
9 TH	1 st		4.11. Sodium vapor lamps
	2 nd		4.12. High pressure mercury vapor lamps.
	3 rd		4.13. Neon sign lamps.
	4 th		4.14. High lumen output & low consumption fluorescent lamps.
10 TH	1 st	Chapter-5 INDUSTRIAL DRIVES:	5.1. State group and individual drive
	2 nd		Continue.....
	3 rd		5.2. Method of choice of electric drives
	4 th		Continue.....
11 TH	1 st		5.3. Explain starting and running characteristics of DC and AC motor
	2 nd		Continue.....
	3 rd		5.4. State Application of: 5.4.1. DC motor.
	4 th		5.4. State Application of: 5.4.2. 3-phase induction motor
12 th	1 st		5.4. State Application of: 5.4.3. 3 phase synchronous motors.
	2 nd		5.4. State Application of: 5.4.4. Single phase induction, series motor, universal motor and repulsion motor
	3 rd	Chapter-6 ELECTRIC TRACTION::	6.1. Explain system of traction
	4 th		6.2. System of Track electrification.
13 th	1 st		6.3. Running Characteristics of DC and AC traction motor.
	2 nd		Continue.....
	3 rd		6.4. Explain control of motor: 6.4.1. Tapped field control
	4 th		6.4. Explain control of motor: 6.4.2. Rheostatic control.

14 th	1 st		6.4. Explain control of motor: 6.4.3. Series parallel control.
	2 nd		6.4. Explain control of motor: 6.4.4. Multi-unit control.
	3 rd		6.4. Explain control of motor: 6.4.5. Metadyne control.
	4 th		6.5. Explain Braking of the following types: 6.5.1. Regenerative Braking.
15 th	1 st		6.5. Explain Braking of the following types: 6.5.2. Braking with 1-phase series motor.
	2 nd		Continue.....
	3 rd		6.5. Explain Braking of the following types: 6.5.3. Magnetic Braking
	4 th		Continue.....

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31.07.23

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