

BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF ELECTRICAL ENGINEERING



SUBJECT : UTILIZATION OF ELECTRICAL ENGG ACADEMIC SESSION: 2024-25

SEMESTER: 5TH

SECTION: A

FACULTY- MANJUSHREE MOHAPATRA & PADMINI PRADHAN

Discipline: Electrical Engg.	Semester:5th (A)	Semester: From Date: 01/07/2024 To Date: 08/11/2024
Subject- UTILIZATION OF ELECTRICAL ENGG (TH-4)	No. of Days/per week class allotted:04 PERIODS/WEEK (MON,TUE,WED,FRI-1 Period Each)	No. of weeks: 18 WEEKS
Week	Class Day	Theory/Practical Topics
1 st (01/07/2024-06/07/2024)	02-07-2024	1. ELECTROLYTIC PROCESS: 1.1. Definition and Basic principle of Electro Deposition
	03-07-2024	1.2 Important terms regarding electrolysis
	04-07-2024	1.3 Faradays Laws of Electrolysis
	06-07-2024	1.4Definitions of current efficiency, Energy efficiency.
2 nd (08/07/2024-13/07/2024)	09-07-2024	1.5. Principle of Electro Deposition.
	10-07-2024	1.6 Factors affecting the amount of Electro Deposition.
	11-07-2024	1.7. Factors governing the electro deposition.
	13-07-2024	1.8 State simple example of extraction of metals.
3 rd (15/07/2024-20/07/2024)	16-07-2024	1.9. Application of Electrolysis.
	18-07-2024	2. ELECTRICAL HEATING: 2.1. Advantages of electrical heating
	20-07-2024	2.2 Mode of heat transfer and Stephen's Law.
4 th (22/07/2024-27/07/2024)	23-07-2024	2.3. Principle of Resistance heating. (Direct resistance

	24-07-2024	2.3. Principle of Resistance heating. (Indirect resistance heating.)
	25-07-2024	2.4. Discuss working principle of direct arc furnace
	27-07-2024	2.4. Discuss working principle of indirect arc furnace
5 th (29/07/2024-03/08/2024)	30-07-2024	2.5 Principle of Induction heating
	31-07-2024	2.5.1. Working principle of direct core type, vertical core type and indirect core type Induction furnace.
	01-08-2024	2.5.1. Working principle of indirect core type Induction furnace.
	03-08-2024	2.5.2. Principle of coreless induction furnace and skin effect
6 th (05/08/2024-10/08/2024)	06-08-2024	2.6. Principle of dielectric heating and its application..
	07-08-2024	2.7. Principle of Microwave heating and its application
	08-08-2024	Class test 1
	10-08-2024	3. PRINCIPLES OF ARC WELDING:
7 th (12/08/2024-17/08/2024)	13-08-2024	3.1. Explain principle of arc welding
	14-08-2024	3.2. Discuss D. C. & A. C. Arc phenomena.
	17-08-2024	3.3. D.C. & A. C. arc welding plants of single and multi-operation type.
	20-08-2024	3.3. D.C. & A. C. arc welding plants of single and multi-operation type.
8 th (19/08/2024-24/08/2024)	21-08-2024	3.4. Types of arc welding
	22-08-2024	3.4. Types of arc welding
	24-08-2024	3.5. Explain principles of resistance welding
	27-08-2024	3.6. Descriptive study of different resistance welding methods
9 th (26/08/2024-31/08/2024)	28-08-2024	3.6. Descriptive study of different resistance welding methods
	29-08-2024	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.].
	31-08-2024	4.3. Explain the inverse square law and the cosine law
10 th (02/09/2024-07/09/2024)	03-09-2024	4.4 Explain polar curves. 4.5. Describe light distribution and control. Explain related definitions like maintenance factor and depreciation factor
	04-09-2024	4.6 Design simple lighting schemes and depreciation factor
	05-09-2024	4.7. Constructional feature and working of Filament lamps, effect of variation of voltage
11 th (09/09/2024-14/09/2024)	10-09-2024	Internal Assessment
	11-09-2024	Internal Assessment
	12-09-2024	4.8 Explain Discharge lamps. 4.9. State Basic idea about excitation in gas discharge lamps.
	14-09-2024	4.10. State constructional factures and operation of Fluorescent lamp. (PL and PLL Lamps)
12 th (16/09/2024-21/09/2024)	17-09-2024	4.11. Sodium vapor lamps
	18-09-2024	4.12. High pressure mercury vapor lamps
	19-09-2024	4.13. Neon sign lamps.
	21-09-2024	4.14. High lumen output & low consumption fluorescent lamps.
13 th (23/09/2024-28/09/2024)	24-09-2024	5. INDUSTRIAL DRIVES: 5.1. State group and individual drive.
	25-09-2024	5.2. Method of choice of electric drives 5.3. Explain starting and running characteristics of DC and AC motor
	26-09-2024	5.4. State Application of: 5.4.1. DC motor. 5.4.2. 3-phase induction motor.
	28-09-2024	Quiz test
14 th (30/09/2024-05/10/2024)	01-10-2024	5.4.3. 3 phase synchronous motors. 5.4.4. Single phase induction, series motor, universal motor and repulsion motor

	03-10-2024	Class test 2
	05-10-2024	5.4.3. 3 phase synchronous motors.
15 th (14/10/2024-19/10/2024)	15-10-2024	5.4.4. Single phase induction, series motor, universal motor and repulsion motor.
	17-10-2024	5.4.4. Single phase induction, series motor, universal motor and repulsion motor.
	19-10-2024	6. ELECTRIC TRACTION:
16 th (21/10/2024-26/10/2024)	22-10-2024	6.1. Explain system of traction
	23-10-2024	6.2. System of Track electrification
	24-10-2024	6.3. Running Characteristics of DC and AC traction motor.
	26-10-2024	6.4. Explain control of motor: 6.4.1. Tapped field control.
	29-10-2024	6.4.2. Rheostatic control 6.4.3. Series parallel control
17 th (28/10/2024-02/11/2024)	30-10-2024	6.4.4. Multi-unit control. 6.4.5. Metadyne control.
	02-11-2024	6.5. Explain Braking of the following types: 6.5.1. Regenerative Braking
18 th (04/11/2024-08/11/2024)	05-11-2024	6.5.2. Braking with 1-phase series motor
	06-11-2024	6.5.3 magnetic braking
		DISCUSSION OF PREVIOUS YEAR QUESTIONS
	07-11-2024	REVISION

