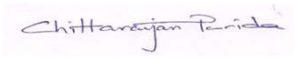
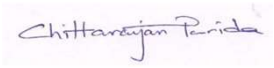
UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

DISCIPLINE: Electrical Engineering	SEMESTER: 5th Sem	NAME OF THE TEACHING FACULTY: Er.Chittaranjan Parida		
SUBJECT: UTILIZATION OF ELECTRICAL ENERGY & TRACTION	No of Days/Per week class allotted: **4** Class P/W**(60)**	Semester From Date:15/09/2022 To Date:22/12/2022 No. Of Weeks: **15**		
WEEK	**CLASS DAY**	**THEORY TOPICS**	**REMARKS**	
			Date	Dean/Principal
1st	1st	Definition and Basic principle of Electro Deposition.		
	2nd	Important terms regarding electrolysis.		
	3rd	Faradays Laws of Electrolysis		
	4th	Revision of last Class		
2nd	1st	Doubt clear class		
	2nd	Definitions of current efficiency, Energy efficiency.		
	3rd	Principle of Electro Deposition		
	4th	Assignment		
3rd	1st	Assignment question Discussion		
	2nd	Factors affecting the amount of Electro Deposition		
	3rd	Factors governing the electro deposition.		
	4th	Application of Electrolysis.		
4th	1st	**Revision of last few class**		
	2nd	Advantages of electrical heating,. Mode of heat transfer and Stephen's Law.		
	3rd	Principle of Resistance heating. (Direct resistance and indirect resistance heating.)		
	4th	Working principle of direct core type, vertical core type and indirect core type Induction furnace.		
5th	1st	Principle of coreless induction furnace and skin effect.		
	2nd	Principle of dielectric heating and its application. , Principle of Microwave heating and its application.		
	3rd	Assignment		
	4th	Assignment question Discussion		
6th	1st	**Revision of Last Class**		
	2nd	Explain principle of arc welding. ,. Discuss D. C. & A. C. Arc phenomena.		
	3rd	Revision of Last Class		

	4th	D.C. & A. C. arc welding plants of single and multi-operation type.		
7th	1st	Types of arc welding, Explain principles of resistance welding		
	2nd	Revision of Last class		
	3rd	Descriptive study of different resistance welding methods.		
	4th	Revision of Last Classes		
8th	1st	Nature of Radiation and its spectrum.		
	2nd	Doubt Clear Class		
	3rd	Class Test		
	4th	Doubt Clearing Class and Assignment Questions Discussion.		
9th	1st	Terms used in Illuminations. [Lumen, Luminous intensity, Intensity of illumination, MHCP, MSCP, MHSCP, Solid angle, Brightness, Luminous efficiency.]		
	2nd	Explain the inverse square law and the cosine law.		
	3rd	Revision Class		
	4th	Explain polar curves		
10th	1st	Describe light distribution and control. Explain related definitions like maintenance factor and depreciation factors		
	2nd	Design simple lighting schemes and depreciation factor.		
	3rd	Constructional feature and working of Filament lamps, effect of variation of voltage on working of filament lamps		
	4th	Explain Discharge lamps		
11th	1st	State Basic idea about excitation in gas discharge lamps.		
	2nd	State constructional factures and operation of Fluorescent lamp. (PL and PLL Lamps)		
	3rd	. Sodium vapor lamps.		
	4th	. High pressure mercury vapor lamps		
12th	1st	Neon sign lamps, High lumen output & low consumption fluorescent lamps.		
	2nd	State group and individual drive.		
	3rd	Last Class Discussion		
	4th	Doubt Clear Class		
13th	1st	Revision		
	2nd	Class Test		
	3rd	. Method of choice of electric drives.		
	4th	. Explain starting and running characteristics of DC and AC motor, State Application of: . DC motor		

14th	1st	3-phase induction motor		
	2nd	3 phase synchronous motors		
	3rd	Doubt Clear Class		
	4th	Single phase induction, series motor, universal motor and repulsion motor.		
15th	1st	Explain system of traction, System of Track electrification,. Running Characteristics of DC and AC traction motor.		
	2nd	Tapped field control,. Rheostatic control.,Series parallel control. ,Multi-unit control,. Metadyne control.		
	3rd	Explain Braking of the following types: Regenerative Braking. Braking with 1-phase series motor.		
	4th	Magnetic Braking,Sample Paper Question Discussion		





HOD **DEAN** **PRINCIPAL**