

LESSON PLAN OF UTILIZATION OF ELECTRICAL ENERGY AND TRACTION FOR SEM-2020-21

DISCIPLINE	SEMESTER	Name of the teaching faculty- SWARNAPRABHA PANIGRAHI
SUB-UEET	5th	
	4days/week	No of Weeks-15
1st	1 st	Ch-1 Electrolytic process
	2 nd	Definition and basic principle of electro deposition
	3 rd	Important terms regarding electrolysis
	4 th	Faraday's law of electrolysis
2nd	1 st	current efficiency, energy efficiency
	2 nd	Principle of electro deposition, and factors affecting the amount of electro deposition
	3 rd	Factors governing the electro deposition
	4 th	Simple example related to extraction of metals
3rd	1 st	Application of electrolysis
	2 nd	Ch-2 Advantage of electrical heating
	3 rd	Mode of heat transfer and stephen's law
	4 th	Principle of resistance heating(direct , indirect)
4th	1 st	working principle of direct Arc furnace and indirect arc furnace
	2 nd	Principle of induction heating
	3 rd	Working principle of direct core type vertical core type and indirect core type induction furnace
	4 th	Principle of coreless induction furnace and skin effect
5 th	1 st	Principle of dielectric heating and application
	2 nd	Principle of Microwave heating and its application
	3 rd	Ch-3 explain principle of arc welding
	4 th	D.C and A.C arc phenomena
6th	1 st	D.C and A.C arc welding plants of single type
	2 nd	D.C and A.C arc welding plants of Multi operation type
	3 rd	Types of arc welding
	4 th	Principle of resistance welding
7th	1 st	Descriptive study of different resistance welding methods
	2 nd	Ch-4 illumination, nature of radiation and its spectrum
	3 rd	Luminous intensity, lumen , intensity of illumination, MHCP,MSCP, MHSCP, brightness, solid angle Luminous efficiency
	4 th	Inverse square law and the cosine law
8th	1 st	Polar curves

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	2 nd	Describe light distribution and control panel
	3 rd	Ch-6 maintenance factor and depreciation factor, simple lighting schemes and lighting factor
	4 th	Constructional feature and working of filament lamps, effect of variation of voltage on working of filament lamps
9th	1 st	Discharge lamps
	2 nd	Constructional features of and operation of fluorescent lamp
	3 rd	Sodium vapour lamp, high pressure mercury vapour lamps
	4 th	Neon sign lamp ,
10th	1 st	High lumen output & low consumption fluorescent lamp
	2 nd	Ch-5 industrial drive , group and individual drive
	3 rd	Methods of choice of electric drive
	4 th	Starting and running characteristics of DC and AC motor
11th	1 st	Application of DC motor, 3-ph induction motor
	2 nd	Application of 3-ph synchronous motor,
	3 rd	Application 1-ph induction motor, series motor ,
	4 th	Application universal motor and repulsion motor
12th	1 st	Ch-6 Electric traction
	2 nd	System of traction
	3 rd	System of tracking electrification
	4 th	Running characteristics of DC traction motor
13th	1 st	Running characteristics of AC traction motor
	2 nd	Control of motor
	3 rd	Tapped field control
	4 th	Rheostatic control
14th	1 st	Series parallel control
	2 nd	Metadyne control
	3 rd	Braking
	4 th	Magnetic braking
15th	1 st	Braking with 1-ph series motor
	2 nd	Regenerative braking
	3 rd	Numerical practice
	4 th	Overall discussion