MERI College of Engineering & Technology (MERI-CET)

Session: 2018-2019 **Course: B.Tech**

Name of the Faculty : _____

Discipline : Btech

Semester : 1ST sem

Subject : Engineering Chemistry

Lesson Plan Duration : 15 Weeks (From August 2018 to November 2018)

Work load (Lectures/Practical)

Per week (in hours) : Lectures-04, Practicals-02

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (including assignment /test)	PRACTICAL DAY	TOPIC
1ST	1st	Phase Rule:-Terminology, One component system (H2O system and CO2 - system),		1. To study the Cochran and Badcock & Wilcox boilers.
	2nd			
	3rd	two components system, Simple eutectic system (Pb-Ag), system with congruent melting point (Zn - Mg). point (Na2SO4 - H2O)		
	4th			
2ND	5TH	system with incongruent melting point (Na2SO4 - H2O), Cooling curves. **Assignment-1**		2. To study the working and function of mountlings and accessories in boilers
	6TH			
	7TH	Catalysis: Characteristics of catalytic Reactions, Types of catalysis: Homogeneous catalysis		
	8TH			
3rd	9TH	Heterogeneous catalysis, Autocatalysis and Induced catalysis. Mechanism of Catalytic action (Intermediate compound formation theory & Adsorption theory).		3. To study Two-stroke & Four-Stroke Diesel Engines.
	10TH			
	11TH	Concept of promoters, inhibitors and poisioners. Enzymatic catalysis: its characteristics		4. To study Two-stroke & Four-Stroke Petrol Engines.
	12TH			
4th	13TH			
	14TH	factors affecting, Mechanism (lock and key hypothesis and Induced fit hypothesis) **Assignment-2**		5. To study the vapor compression Refrigeration System and determination of its C.O.P
	15TH			
	16TH			
5th	17TH	Water and its Treatment: Part-I: Sources of water, impurities in water		
	18TH			

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	19TH		
	20TH	hardness of water and its determination(EDTA method) , Units of hardness	
6th	21TH		
	22TH	alkalinity of water and its determination, related numerical problems	
	23TH	scale and sludge formation (composition properties and methods of prevention) **Assignment-3**	6. To study the functioning of Window Room Air Conditioner
	24TH		
7th	25TH	Boiler corrosion and caustic embrittlement. Priming and foaming	
	26TH		
	27TH	Water and its Treatment: PART II: Treatment of water for domestic use,	7. To study the constructional features and working of peiton wheel Turbine, Francis Turbine and Kaplan Turbine.
	28TH		
8th	29TH	coagulation, sedimentation, filtration and disinfection. water softening : Lime-Soda treatment **Assignment-4**	
	30TH		
	31TH	Zeolite, Ion - exchange process, mixed bed demineralization Desalination (Reverse Osmosis , electro dialysis) & related numerical	8. To calculate the Mechanical Advantage, Velocity Ratio and Efficiency of single start, Double start and Triple start worm & Worm Wheel.
	32TH		
9th	33TH	Corrosion and its prevention: Mechanism of Dry and wet corrosion (rusting of iron), types of corrosion.	
	34TH		9. To calculate Mechanical Advantage, Velocity Ratio and Efficiency of single purchase and Double puprchase winch crab and plot graphs
	35TH	galvanic corrosion, differential aeration corrosion, stress corrosion. Factors affecting corrosion	
	36TH		
10th	37TH	preventive measures (proper design, Cathodic and Anodic protection, Electroplating, tinning, galvanization) **Assignment-5**	
	38TH		
	39TH		
	40TH	Lubrication and Lubricants: Introduction, mechanism of lubrication, classification of lubricants, (Liquid, Grease (semi - solid) and solid (MoS2, Graphite). Soil Corrosion, Microbiological Corrosion	10. To find the percentage error between observed and calculated values of stresses in the member of a Jib Crane.
11th	41TH		
	42TH		
	43TH	Additives for lubricants. Properties of lubricants (Flash & Fire point, Saponification number, Iodine value, Acid value.	11. To study simple screw jack and compound screw jack and determine their
	44TH		
12th	45TH		