DRONACHARYA
College of Engineering

KHENTAWAS, FARRUKHNAGAR, GURGAON, HR

Department:

Academic Session: 2017-18 (Jan-June 2018)

Lesson Plan for the Semester started w.e.f 08.01.2018

Subject with code: Engg. Chemistry (CH101-F)

Name of Faculty with designation : Dr. Sangeeta Singla

Month	Date & Day	Sem-Class	Unit	Topic/Chapter covered	Academic activity	Test / assignment
January	08.01.2018 Monday	II ME	2	General introduction of the syllabus Water & its treatment – I: - Sources of water, composition of water obtained from different sources, impurities present in water. Impurities present in water and their side effects, Hardness of Water, definition, types of hardness and related numerical.	……	Assignment of 02 Ques. given
	10.01.2018 Wednesday	II ME	2	Soap solution method, principle, method, calculation. EDTA method of determination of hardness, principle, method, Calculation.		Yes
	11.01.2018 Thursday	II ME	2	Factors responsible for causing alkalinity, titrimetric method of determination of alkalinity, phenolphthalein and methyl-Orange end point, calculations, numerical problems.		
	15.01.2018 Monday	II ME	2	Boiler water and boiler problems arising due to impurities present in water, scale and sludge formation, composition, disadvantages, internal and external treatment to prevent scale and sludge. Boiler corrosion, priming and foaming, caustic embrittlement		
	17.01.2018 Wednesday	II ME	2	Definition, methods of softening of water, functions of lime and soda in lime soda process. Hot and cold lime soda process. Calculation of the quantity of lime and soda and related numericals		
	18.01.2018 Thursday	II ME	2	Softening of water by zeolite process, types of zeolites, the process, regeneration of zeolite, advantages, and limitations of the process. Ion Exchange process; cation exchange resins, anion exchange resins, the process, advantages and limitations. Mixed bed demineralization.		
	24.01.2018 Wednesday	II ME	1	Phase Rule and catalysis - Phase rule equation, terminology of Phase rule, phase, component and degree of freedom, examples ,Calculation of degree of freedom for different types of systems. Derivation of phase rule equation. Its merits and demerits.		
	25.01.2018 Thursday	II ME	1	One component systems; water system, CO_2 system (study of curves, points and areas) and their comparision.		

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	29.01.2018 Monday	**II ME**	**1**	Reduced phase rule equation. Definition of simple eutectic system, Pb- Ag system, phase diagram of Pb-Ag system, eutectic point, curves, points and areas. Its application in Pattinson;s process of desilverisation of Argentiferrous lead.		
February	**01.02.2018 Thursday**	**II ME**	**1**	Definition of congruent melting point, phase diagram of Zn-Mg system, study of all points, curves and areas. Application of phase rule, Definition of incongruent melting point, phase diagram of Na_2SO_4-H_2O system, description of curves, points and areas.		
	05.02.2018 Monday	**II ME**	**1**	Catalysis:- Introduction, Role, type and characteristics of catalysts. Catalytic promoters, autocatalysis. Types of catalysis: Homogenous and heterogenous and their mechanism. Enzyme catalysis		
	07.02.2018Wednesday	**II ME**	**3**	Corrosion & its prevention:- Definition of corrosion, cause of corrosion, drawbacks of corrosion, types of corrosion. Dry corrosion, its mechanism and types.		
	08.02.2018 Thursday	**II ME**	**3**	Wet corrosion, Electrochemical theory of wet corrosion. Types of wet corrosion: Galvonic corrosion, its causes and consequences. Pitting corrosion, cause of pitting corrosion, consequences Waterline corrosion, cause of waterline corrosion, consequences. Differential aeration corrosion, stress corrosion, mechanism, consequences		
	07.02.2018 Wednesday	**II ME**	**3**	Factors affecting corrosion; environmental factors and factors related to metal characteristics, Preventive measures of corrosion: proper design, cathodic and anodic protection		
	19.02.2018 Monday	**II ME**	**3**	Electroplating, tinning, galvanization, soil corrosion and microbiological corrosion.		
	21.02.2018 Wednesday	**II ME**	**3**	Lubrication & Lubricants :-Introduction and mechanism of lubrication: Fluid film lubrication, thin film lubrication and extreme pressure lubrication.Classification of lubricants; solid, liquid and semi- solid. Additives of lubricants. Biodegradable lubricants		
	22.02.2018 Thursday	**II ME**	**3**	Properties of lubricants: Flash and fire point, saponification number, iodine number, acid value, Aniline point		
	26.02.2018 Monday	**II ME**	**3**	Properties of lubricants: Cloud point and pour point. Viscosity and viscosity index. related numerical problems		
	28.02.2018 Wednesday	**II ME**	**4**	Analytical methods :- Thermal methods; Thermo gravimetric analysis: Working Principle, method, instrumentation and application.		

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March	**05.03.2018 Monday**	**II ME**	**4**	Differential Thermal analysis, Differential scanning colorimetric: Working Principle, instrumentation and application. Basic concepts of spectroscopy, Lambert and Beer's law		
	07.03.2018 Wednesday	**II ME**	**4**	Absorption and emission spectroscopy and their examples. Principle of UV-VIS Spectroscopy, cause, information obtained by the UV-VIS spectra, applications.		
	08.03.2018 Thursday	**II ME**	**4**	Effect of IR radiation on matter, kind of changes occurring in the molecule while interacting, applications of IR Spectroscopy		
	12.03.2018 Monday	**II ME**	**4**	Polymers and polymeristion: - introduction to Polymers, types of polymers, types of polymerization.		
	14.03.2018 Wednesday	**II ME**	**4**	Mechanism of polymerisation: Addition, condensation and coordination polymerisation, Structure property relationship in polymers. Biopolymerisation and biodegradable polymerization. Synthetic rubber(GR-N), silicones and polymeric composites		
	15.03.2018 Thursday	**II ME**	**4**	Preparation, properties and technical applications of thermoplastics:- PVC, PVA and Teflon. Thermosets: PF and UF. Elastomers (SBR)		

After second sessional the revision will be conducted