G. H. RAISONI COLLEGE OF ENGINEERING &MANAGEMENT ,PUNE

First Year B. Tech Department

TEACHING PLAN FOR THEORY F Section

Name of Subject Teacher: Dr. Santosh Kumar Mishra

Subject: Engg. Chemistry		**Class: F**		**Branch: F.Y. Year 2018-2019**
Lecture No	**Scheduled Date**	**Topics to be covered on the scheduled date**	**Date on which Actually Covered**	**Reason for deviation(if any)**
	14/7/2018 – 28/7/2018	**Student Orientation Program**		
1	30/7/2018	Syllabus Discussion, Discussion on course objective & course outcome		
	30/7/2018	**Tutorial -1: Calculations of Hardness of Water**		
2	31/7/2018	**UNIT-1: Water technology and Green chemistry** Water Technology - Impurities in water. Hardness of water and its determination by EDTA method		
3	1/8/2018	Alkalinity of water and its determination and Numerical on alkalinity and hardness.		
4	2/8/2018	Ill effects of hard water in boilers.		
5	3/8/2018	Boiler feed water treatment -1) Internal treatment -calgon and phosphate conditioning; 2) External treatment- a) Zeolite process		
	3/8/2018	**TAE-1: Quiz**.		
6	4/8/2018(extra)	External treatment- a) Zeolite process& its numerical b) Ion exchange method.		
7	4/8/2018(extra)	2) Desalination of brackish water /Purification of water by Reverse osmosis and Electrodialysis		
8	6/8/2018	**Tutorial-2: Calculations of alkalinity and zeolite numericals**		
9	7/8/2018	**Green Chemistry:** Introduction, Twelve Principles of green Chemistry		
10	8/8/2018	Major uses - traditional and green pathways of synthesis of adipic acid and indigo dye		

11	9/8/2018	**Unit 2 – Electro analytical Techniques** Introduction: Types of reference electrode(calomel electrode), indicator electrode (glass electrode),		
12	10/8/2018	Ion selective electrode, Half cell reaction and complete cell reaction.		
13	11/8/2018(extra)	Conductometry: Introduction, Kohlrausch's law, conductivity cell, measurement of conductance		
14	11/8/2018(extra)	Applications- Conductometric titrations Acid-base titrations and Precipitation titrations		
15	13/8/2018	**Tutorial-3 : Numerical on Redox titrations Fe/Ce titration**		
16	13/8/2018(extra)	UV/Visible spectroscopy: Interaction of radiation with matter, Beer lambert's law		
17	14/8/2018	Potentiometry: Introduction, Potentiometric titrations- differential plots. Applications- redox titrations $Fe^{2+/}Ce^{+4}$ titration		
18	14/8/2018(extra)	Chromophore and auxochrome, Types of electronic transitions;		
	16/8/18 – 18/8/18	**CAE-I**		
19	20/8/2018	**Tutorial-4 : Polymerization-Free radical mechanism**		
20	21/8/2018	Instrumentation and principle - block diagram of single and double beam spectrophotometer. Applications of uv-visible spectroscopy		
21	22/8/2018	**Unit-3 Synthetic Organic Polymers** Introduction, functionality of monomer, polymerization-Free radical mechanism		
22	23/8/2018	step growth polymerization, Tm and Tg		
23	24/8/2018	Thermoplastic and Thermosetting polymers, Compounding of plastics		
24	27/8/2018	**Tutorial-5 : Vulcanization by Sulphur**		
25	28/8/2018	Preparation, properties and engineering applications of: Polyethylene (LDPE & HDPE) and Bakelite.		
26	29/8/2018(extra)	Elastomers - Natural rubber- processing and vulcanization by sulphur. Synthetic rubbers- SBR		

27	29/8/2018	Speciality polymers: Engineering thermoplastics-Polycarbonate, Biodegradable polymers- Poly(hydroxyl butarate hydroxyl valanate),		
28	30/8/2018	Conducting polymers- Polyacetylene		
29	31/8/2018	Liquid crystalline polymers – Kevlar.		
	31/8/2018	**TAE-2 Surprise Test**		
30	3/9/2018	**Tutorial -:6 Numerical on Bomb Calorimeter**		
31	4/9/2018	**UNIT-4 FUEL AND COMBUSTION** Fossil Fuels: Definition, Calorific values, Determination- Bomb calorimeter, Numerical		
32	5/9/2018	Boy's gas calorimeter , Numerical		
33	6/9/2018	Solid fuel-Proximate analysis ,Numerical		
34	7/9/2018	Ultimate analysis , Numerical		
35	10/9/2018	**Tutorial - 7: Numerical on Proximate & Ultimate**		
36	11/9/2018	Liquid fuels-Petroleum composition and refining		
37	12/9/2018	Octane number of petrol, Cetane number of diesel, Power alcohol, Biodiesel		
38	14/9/2018	Numericals on combustion of fuel		
39	14/9/2018(extra)	Fuel cells-Definition, Advantages and limitations,		
	17/9/2018 – 19/9/2018	**CAE-II**		
40	20/9/2018	**UNIT-5 CORROSION SCIENCE** **Introduction. Types of corrosion- Dry corrosion- mechanism,**		
41	21/9/2018	Pilling-bed worth rule, Wet corrosion- mechanism.		
42	24/9/2018	**Tutorial-8:Numerical on combustion of Fuel**		
	24/9/2018	**TAE-3 Home Assignment**		
43	25/9/2018	Factors influencing corrosion- Nature of metal		

44	26/9/2018	Nature of environment		
45	27/9/2018	Cathodic and anodic protection		
46	28/9/2018	Use of inhibitors, Protective coatings: surface preparation		
47	1/10/2018	**Tutorial-9: Electroplating**		
48	3/10/2018	a)Metallic coatings: Electroplating & Electro less plating.		
49	4/10/2018	b)Non-metallic coatings: chemical conversion coatings		
	5/10/2018	**TAE-5 Seminar(PPT)**		
50	5/10/2018	**UNIT-6 Advances in Engineering Chemistry** Forensic Science : Introduction, Definition, Principles		
51	8/10/2018	**Tutorial -10: Electro less Plating**		
52	8/10/2018(extra)	Need of Forensic Science in present scenario		
53	9/10/2018	Historical Background of Forensic Science in India		
	10/10/2018-12/10/2018	**CAE-III**		
54	15/10/2018	**Tutorial -11: Forensic Examination**		
55	16/10/2018	Laws of Forensic Science		
56	17/10/2018	Forensic Science Laboratories, their types and Divisions		
57	19/10/2018	Forensic Examination		
58	23/10/2018	Organizational set up of Forensic Science Laboratories at central and state level		
59	24/10/2018	Introduction of BPR&D, NICFS, CDFD, CCMB, IITR, CDTS, NCRB		
	29/10/2018	**TAE-7 (Any Other)**		
	3/11/2018	**TAE-6 (Extra Curricular)**		
	3/11/2018	**TAE-4 (Attendance)**		