LESSON PLAN FOR ENGINEERING CHEMISTRY (Th. 2b)(2020-21)

Discipline: Electrical & Mechanical	**Semester: 2nd**	**Name of the Teaching Faculty: SASHMITA NAYAK (Lect.)**	
Subject: ENGG. CHEMISTRY	**No. of days per week class allotted: 4**	**Semester From Date : 28/04/2021 to Date: 10/07/2021** **No. of Weeks: 11**	
Week	**Class Day**	**Theory**	**Range**
1st		**A. PHYSICAL CHEMISTRY**	**28/04/2021 to 04/05/2021**
		Chapter 1 : Atomic Structure	
	1st	**Fundamental Particles (Electron, Proton, neutron),Defination,mass & Charge**	
	2nd	**Rutherford's atomic model (Postulates & Failure)**	
	3rd	**Atomic Mass & Mass number,Definition,examples & Properties of Isotopes,Isobars & Isotones**	
	4th	**Bohr's Atomic model (Postulates),Bohr-Bury scheme, Aufbau's principle,Hund's Rule,Electronic configuration (Upto atomic no. 30)**	
		Chapter 2 :Chemical Bonding	**05/05/2021 to 11/05/2021**
2nd	**1st**	**Definition,types Electrovalent & Co-valent bond with Example**	
	2nd	**Co-ordination bond with Example**	
		Chapter 3 : Acid base Theory:-	
	3rd	**Concept of Arrhenius, Lowery Bronsted Theory.Postulate & Limitation**	
	4th	**Concept of Lewis Theory of acid & base with examples.postulates and limitations. Neutralization of acid & base.**	
3rd	**1st**	**Definition & types of salt with example.(Normal,acidic,basic,double,complex,mixed salt)**	**12/05/2021 to 18/05/2021**
		Chapter 4 : Solutions	
	2nd	**Definition of Atomic wt.,molecular wt.,Equivalent wt.,Determination of equivalent weight of acid,base & salt.**	
	3rd	**modes of expression of the concentrations Molarity, Normality,& molality with problems**	
	4th	**PH of solution.(Defination with Numericals),Importance of PH in Industry(Sugar,Textile,Paper Industries)**	
4th		**Chapter 5: Electrochemistry:-**	**19/05/2021 to 25/05/2021**
	1st	**Definition & types (strong and weak)of electrolytes with example.Electrolysis (Principle & process) with example of Nacl (Fused & Aqueous solution)**	

	2nd	Faraday's 1st & 2nd law of electrolysis(statement, mathematical expression and simple numerical).Industrial application of electrolysis.Electroplating (Zn only)	
		Chapter 6 : Corrosion:-	
	3rd	Definition & types of corrosion.Atmospheric & water line corrosion.	
	4th	Mechanism of rusting of Iron only.Protection from Corrosion by (i) Alloying,(ii) Galvanization	
5th		B. INORGANIC CHEMISTRY	26/05/2021 to 01/06/2021
		Chapter 7 :Metallurgy:-	
	1st	Definition of Mineral,Ore, Gaunge nwith example.Distinction between Ore & Mineral.	
	2nd	General methods of extraction of metals.Ore dressing, concentration (Gravity Separation),Magnetic separation	
	3rd	,Froth floatation & leaching.,Oxidation (Calcination, Roasting)	
	4th	Reduction(Smelting,Definition & examples of flux & slag),Refining of the metal(Electro refining & Distillation only)	
6th		Chapter 8: Alloys:-	02/06/2021 to 08/06/2021
	1st	Definition of alloy.Types of alloys (Ferro, Non ferro & Amalgam) with example.,Composition & uses of Brass,Bronze, Alnico, Duralumin	
		C. ORGANIC CHEMISTRY	
		Chapter 9 : Hydrocarbons:-	
	2nd	Saturated & UnsaturatedHydrocarbons (Definition with Examples),Aliphatic & aromatic Hydrocarbons (Huckle's Rule only)Difference between Aliphatic & aromatic hydrocarbons.	
	3rd	IUPAC System of nomenclature of Alkane.,Alkene	
	4th	Alkyne,Nomenclature of Alkyl halide	
7th	1st	Nomenclature of Alcohol with bond line notation.	09/06/2021 to 15/06/2021
	2nd	Uses of Benzene, Toluene,BHC, Phenol	
	3rd	Uses of Naphthalene, Anthracene, & Benzoic acid in daily life.	
		D.INDUSTRIAL CHEMISTRY	
		Chapter 10:Water Treatment:-	
	4th	Sources of water,Soft water & hard water,hardness, types of hardness (temporary or carbonate & permanent or non-carbonate)	
8th	1st	Removal of hardness by lime soda method.,Cold lime soda method, Principle,process & advantages	16/06/2021 to 22/06/2021
	2nd	Hot lime soda method. Principle,process & advantages	
	3rd	Advantages of hot lime over cold lime process.	

	4th	Organic Ion Exchange method (Principle,process & regeneration of exhausted resins)	
9th		Chapter 11 :Lubrication:-	23/06/2021 to 29/06/2021
	1st	Definition & type of Lubricant.(solid,liquid and semisolid with examples)	
	2nd	Specific use of Lubricant.(Graphite,Oil,Grease), Purpose of Lubrication.	
		Chapter 12: Fuel:-	
	3rd	Definition & Classification of Fuel, defination of calorific value of fuel, Choice of a good fuel.	
	4th	Liquid- Diesel,Petrol,& Kerosene- (Composition & Use)	
10th	1st	Gaseous- Producer & Water gas (Composition & Use)	30/06/2021 to 06/07/2021
	2nd	Elementary idea about LPG,CNG, Coal gas	
		Chapter 13: Polymer:-	
	3rd	Definition of monomer,polymer, Homo polymer, Co-polymer & degree of Polymerization	
	4th	Difference between thermosetting & thermoplastic.	
11th	1st	Composition & uses of Polythene	07/07/2021 to 10/07/2021
	2nd	poly-vinyl chloride & Bakelite.	
	3rd	Definition of Elastomer,Natural rubber.It's drawbacks.Volcanised rubber over raw rubber.	
		Chapter 14 : Chemicals in Agriculture:-	
	4th	Pesticides- Insecticides,herbicides,fungicides(Examples & uses),Biofertilizers : Definition, examples & uses.	