

LESSON PLAN FOR ENGINEERING CHEMISTRY (Th. 2b)

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 : 14/03/2022	to Date: 18/06/2022
No. of Weeks: 13			
Week	Class Day	Theory	Range
1st		A. PHYSICAL CHEMISTRY	14/03/2022 to 20/03/2022
		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	
	4th	Definition,examples & Properties of Isotopes,Isobars & Isotones	
2nd	1st	Bohr's Atomic model (Postulates)	21/03/2022 to 27/03/2022
	2nd	Bohr-Bury scheme, Aufbau's principle	
	3rd	Hund's Rule,Electronic configuration (Upto atomic no. 30)	
		Chapter 2 :Chemical Bonding	
	4th	Definition,types Electrovalent & Co-valent bond	
3rd	1st	Co-ordination bond with Example Formation of NaCl,MgCl ₂ ,H ₂ ,Cl ₂ ,O ₂ ,N ₂ ,H ₂ O,CH ₄ ,NH ₃ ,NH ₄ ⁺ ,SO ₂	28/03/2022 to 03/04/2022
		Chapter 3 : Acid base Theory:-	
	2nd	Concept of Arrhenius, Lowery Bronsted Theory.Postulate & Limitation	
	3rd	Concept of Lewis Theory of acid & base with examples.postulates and limitations. Neutralization of acid & base.	
	4th	Definition & types of salt with example.(Normal,acidic,basic,double,complex,mixed salt)	
4th		Chapter 4 : Solutions	04/04/2022 to 10/04/2022
	1st	Definition of Atomic wt.,molecular wt.,Equivalent wt.	
	2nd	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)	
5th	1st	Importance of PH in Industry(Sugar,Textile,Paper Industries)	18/04/2022 to 24/04/2022
		Chapter 5: Electrochemistry:-	
	2nd	Definition & types (strong and weak)of electrolytes with example.	
	3rd	Electrolysis (Principle & process) with example of Nacl (Fused & Aqueous solution)	
	4th	Faraday's 1st & 2nd law of electrolysis(statement, mathematical expression and simple numerical).Industrial application of electrolysis.Electroplating (Zn only)	
6th		Chapter 6 : Corrosion:-	25/04/2022 to 01/05/2022
	1st	Definition & types of corrosion.Atmospheric & water line corrosion.	
	2nd	Mechanism of rusting of Iron only.Protection from Corrosion by (i) Alloying,(ii) Galvanization	
		B. INORGANIC CHEMISTRY	
		Chapter 7 :Metallurgy:-	
	3rd	Definition of Mineral,Ore, Gaunge nwith example.Distinction between Ore & Mineral.	
7th	4th	General methods of extraction of metals.Ore dressing, concentration (Gravity Separation)	02/05/2022 to 08/05/2022
	1st	Magnetic separation,Froth floatation & leaching.	
	2nd	Oxidation (Calcination, Roasting),	
	3rd	Reduction(Smelting,Definition & examples of flux & slag)	
	4th	Refining of the metal(Electro refining & Distillation only)	
8th		Chapter 8: Alloys:-	09/05/2022 to 15/05/2022
	1st	Definition of alloy.Types of alloys (Ferro, Non ferro & Amalgam) with example.	
	2nd	Composition & uses of Brass,Bronze, Alnico, Duralumin	
		C. ORGANIC CHEMISTRY	
		Chapter 9 : Hydrocarbons:-	
	3rd	Saturated & UnsaturatedHydrocarbons (Definition with Examples)	
9th	4th	Aliphatic & aromatic Hydrocarbons (Huckle's Rule only)Difference between Aliphatic & aromatic hydrocarbons.	16/05/2022 to 22/05/2022
	1st	IUPAC System of nomenclature of Alkane.,Alkene	
	2nd	Alkyne,Nomenclature of Alkyl halide	
	3rd	Nomenclature of Alcohol with bond line notation.	
	4th	Uses of Benzene, Toluene,BHC, Pheno,Uses of Naphthalene, Anthracene, & Benzoic acid in daily life.	
		D.INDUSTRIAL CHEMISTRY	

		Chapter 10:Water Treatment:-	
10th	1st	Sources of water,Soft water & hard water,hardness, types of hardness (temporary or carbonate & permanent or non-carbonate)	23/05/2022 to 29/05/2022
	2nd	Removal of hardness by lime soda method.Hot lime soda method. Principle,process & advantages	
	3rd	Cold lime soda method, Principle,process & advantages,Advantages of hot lime over cold lime process.	
	4th	Organic Ion Exchange method (Principle,process & regeneration of exhausted resins)	
11th		Chapter 11 :Lubrication:-	30/05/2022 to 05/06/2022
	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.	
12th	4th	Liquid- Diesel,Petrol,& Kerosene- (Composition & Use)	06/06/2022 to 12/06/2022
	1st	Gaseous- Producer & Water gas (Composition & Use)	
	2nd	Elementary idea about LPG,CNG, Coal gas	
		Chapter 13: Polymer:-	
	3rd	Definition of monomer,polymer, Homo polymer, Co-polymer & degree of Polymerization	
13th	4th	Difference between thermosetting & thermoplastic.	13/06/2022 to 18/06/2022
	1st	Composition & uses of Polythene,poly-vinyl chloride & Bakelite	
	2nd	Definition of Elastomer,Natural rubber.It's drawbacks.Volcanised rubber over raw rubber.	
		Chapter 14 : Chemicals in Agriculture:-	
	3rd	Pesticides- Insecticides,herbicides,fungicides(Examples & uses)	
	4th	Biofertilizers : Definition, examples & uses.	