

# Silda Chandrasekhar College

## Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: Chemistry

Name of the teacher: Dr. Prasenjit Bhunia

Stream: B. Sc

Teaching plan for 3 <sup>rd</sup> semester students				
Syllabus allotted			Paper – GE 3	
Month	Expected number of classes	Paper	Number of Lectures	Topics to be covered
Nov '23	08	GE 3	08	1) Zeroth law of thermodynamics 2) States and Path functions 3) Heat of reactions 4) Intensive and Extensive variables 5) Reversible and Irreversible processes
Dec '23	05	GE 3	05	1) Entropy 2) Kirchhoff's equation 3) Carnot cycle
Jan '24	08	GE 3	08	1) Carnot Engine 2) Bond dissociation energy 3) Resonance Energy 4) Thermodynamic conditions for equilibrium 5) Definition of $K_p$ , $K_c$ and $K_x$ and their inter relation
Feb '24	06	GE 3	06	1) Van't Hoff's factor 2) Le Chatelier's principle 3) Strong and weak electrolyte 4) pH 5) Degree of dissociation
Mar '24	03	GE 3	03	1) Buffer Solutions 2) Solubility and solubility of sparingly soluble salt

## Teaching Plan for the Academic Session 2023-24 (Odd Semester)

Department: Chemistry

Name of the teacher: Sri Subrata Dubey

Stream: B. Sc

Teaching plan for 3 <sup>rd</sup> semester students				
Syllabus allotted			Paper – GE 3	
Month	Expected number of classes	Paper	Number of Lectures	Topics to be covered
Nov '23	08	GE 3	08	1) Organometallic Compounds 2) Preparation of benzene from different aromatic compounds 3) Electrophilic substitution reactions 4) Friedel–Craft reaction
Dec '23	05	GE 3	05	1) Grignard Reagents preparation from alkyl and aryl halides 2) Side chain oxidation of alkyl benzene 3) Concept of Umpolung
Jan '24	08	GE 3	08	6) Reformatsky Reaction 7) Nucleophilic aromatic substitution 8) Effect of nitro substituents 9) Preparation of different aryl halides
Feb '24	06	GE 3	06	6) Carbonyl compounds 7) MPV reduction 8) Preparation of 1°, 2° & 3° alcohols 9) Preparation of phenols and ethers
Mar '24	03	GE 3	03	3) Reactions of ether 4) Preparation of diols with OsO <sub>4</sub> 5) Pinacol-Pinacolone rearrangement

## Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: Chemistry

Name of the teachers: Dr. Prasenjit Bhunia

Teaching plan for 4 <sup>th</sup> semester students				
Syllabus allotted			Paper – GE 4	
Month	Expected number of classes	Paper	Number of Lectures	Topics to be covered
Apr '24	08	GE 4	08	1) Raoult's Law 2) Ideal & non-ideal Solution 3) Lever Rule 4) Critical solution temperature 5) Nernst distribution law and its application
May '24	06	GE 4	06	1) Gibbs phase rule 2) Clausius-Clapeyron equation 3) Phase diagram of one component systems
June '24	06	GE 4	06	1) Specific Conductance and Molar Conductance 2) Cell Constant 3) Equivalent conductance 4) Kohlrausch's law 5) Ostwald dilution law
July '24	06	GE 4	06	1) Solubility product and Ionic product of water 2) Relation between solubility and solubility product for different types of sparingly soluble salts 3) Principle of Hittorff's and moving boundary method
Aug '24	06	GE 4	06	1) Transport number 2) Faraday's law of electrolysis 3) Reversible and irreversible cell 4) EMF of a cell 5) Nernst equation and standard electrode potential
Sept '24	04	GE 4	04	1) Electrochemical series 2) LJP 3) Determination of pH using SHE & quinhydrone electrode 4) Potentiometric Titration

## Teaching Plan for the Academic Session 2023-24 (Even Semester)

Department: Chemistry

Name of the teachers: Sri Subrata Dubey

Teaching plan for 4 <sup>th</sup> semester students				
Syllabus allotted			Paper – GE 4	
Month	Expected number of classes	Paper	Number of Lectures	Topics to be covered
Apr '24	06	GE 4	06	1) Common ion effect 2) Solubility and Solubility Product 3) Gravimetric analysis
May '24	06	GE 4	06	1) Primary and Secondary standard Solutions 2) Principle of acid-base titration 3) Principle of redox and complexometric titration 4) Principle of estimation of mixtures
June '24	06	GE 4	06	1) Column Chromatography 2) TLC 3) Composition of atmosphere
July '24	06	GE 4	06	1) Ozone layer and its role 2) Ozone layer depletion and its consequences 3) Green house effect 4) Acid rain
Aug '24	06	GE 4	06	1) Environmental role of water 2) Natural water sources 3) Water pollution and their effects on animal and plant lives
Sept '24	04	GE 4	04	1) BOD, COD & TDS 2) Hardness of water 3) Lithosphere