Maulana Azad College, Kolkata
Department of Chemistry
Lesson Plan 2020-2021, Undergraduate Chemistry (Hons. & General)

Semester	Dates of CU Examination*	Name of the Faculty	Course Code	Paper	Brief Description of the Topics
Sem-1 (CC)	*follow the latest notification by CU	Dr. Ashis Kumar Mukherjee	**CC-1-1-TH**	**Inorganic Chemistry-1**	Acid-base Reactions
			CC-1-1-P		Practical: Inorganic Chemistry-1: Acid-base titrations; Oxidation- reduction titrations
		Dr. Goutam Mandal	**CC-1-1-TH**		Redox Reactions
			CC-1-1-P		Practical: Inorganic Chemistry-1: Acid-base titrations; Oxidation- reduction titrations
		Dr. Sanju Das	**CC-1-1-TH**		Extra nuclear structure of the atom
			CC-1-1-P		Practical: Inorganic Chemistry-1: Acid-base titrations; Oxidation- reduction titrations
		Dr. Sucheta Singha (Chandra)	**CC-1-1-TH**	**Organic Chemistry-1A**	Bonding and Physical Properties – VBT, Electronic displacements, MO theory
			CC-1-1-P		Practical: Organic Chemistry-1A: Separations based upon solubility
		Dr. Ajanta Mukherji	**CC-1-1-TH**		Bonding and Physical Properties – Physical properties; General Treatment of Reaction Mechanism I
			CC-1-1-P		Practical: Organic Chemistry-1A: Separations based upon solubility
		Dr. Arijit Kundu	**CC-1-1-P**		Practical: Organic Chemistry-1A: Separations based upon solubility
		Dr. Sucheta Singha (Chandra)	**CC-1-2-P**	**Organic Chemistry-1B**	Practical: Organic Chemistry-1B: Determination of Boiling Point
		Dr. Ajanta Mukherji	**CC-1-2-TH**		General Treatment of Reaction Mechanism II
			CC-1-2-P		Practical: Organic Chemistry-1B: Determination of Boiling Point
		Dr. Arijit Kundu	**CC-1-2-TH**		Stereochemistry I
			CC-1-2-P		Practical: Organic Chemistry-1B: Determination of Boiling Point
		Dr. Rajendra Saha	**CC-1-2-TH**	**Physical Chemistry-1**	Chemical Kinetics
			CC-1-2-P		Practicals: Physical Chemistry-1 (5 experiments)
		Dr. Subhodip Samanta	**CC-1-2-TH**		Kinetic Theory of Gases & Properties of Real Gas, Transport Phenomena
			CC-1-2-P		Practicals: Physical Chemistry-1 (5 Experiments)

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Sem-1 (GE)	*follow the latest notification by CU	Dr. Sanju Das	**GE 1**	**Paper-1**	Theory: Atomic structure, Chemical Periodicity and Acids-bases
					Practicals: Inorganic Quantitative
		Dr. Ajanta Mukherji			Theory: Fundamentals of Organic Chemistry, Stereochemistry, Nucleophilic Substitution and Elimination Reactions
		Dr. Rajendra Saha			Theory: Chemical Kinetics
		Dr. Subhodip Samanta			Theory: Kinetic Theory of Gases and Real Gases
Sem-2 (CC)	*follow the latest notification by CU	Dr. Sucheta Singha (Chandra)	**CC-2-3-TH**	**Organic Chemistry-2**	Stereochemistry II
			CC-2-3-P		Practical: Organic Preparations
		Dr. Ajanta Mukherji	**CC-2-3-TH**		General Treatment of Reaction Mechanism III
			CC-2-3-P		Practical: Organic Preparations
		Dr. Arijit Kundu	**CC-2-3-TH**		Substitution and Elimination Reactions
			CC-2-3-P		Practical: Organic Preparations
		Dr. Ashis Kumar Mukherjee	**CC-2-4-TH**	**Inorganic Chemistry-2**	Radioactivity
			CC-2-4-P		Practical: Inorganic Quantitative Analysis
		Dr. Goutam Kumar Mondal	**CC-2-4-TH**		Chemical Bonding-I
			CC-2-4-P		Practical: Inorganic Quantitative Analysis
		Dr. Sanju Das	**CC-2-4-TH**		Chemical Bonding-II
			CC-2-4-P		Practical: Inorganic Quantitative Analysis
Sem-2 (GE)	*follow the latest notification by CU	Dr. Rajendra Saha	**GE 2**	**Paper-2**	Theory: Solutions; Error Analysis; Redox
					Practical: Physical Chemistry Experiments
		Dr. Subhodip Samanta			Theory: Chemical Thermodynamics
					Practical: Physical Chemistry Experiments
		Dr. Arijit Kundu			Theory: Aliphatic Hydrocarbons
Sem-3 (CC+SEC)	*follow the latest notification by CU	Dr. Rajendra Saha	**CC-3-5-TH**	**Physical Chemistry-2**	Electrochemistry, Conductance and transport number, Ionic equilibrium, Electromotive Force
			CC-3-5-P		Practicals: Physical Chemistry-2 (6 experiments)
			SEC-A1	**SEC-1**	Mathematics and Statistics for Chemists

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Sem-3 (CC+SEC)		Dr. Subhodip Samanta	**CC-3-5-TH**	**Physical Chemistry-2**	Chemical Thermodynamics-I & II, Applications of Thermodynamics-I, Systems of Variable Composition
			CC-3-5-P		Practicals: Physical Chemistry-2 (6 experiments)
			SEC-A1	**SEC-1**	Mathematics and Statistics for Chemists
		Dr. Ashis Kumar Mukherjee	**CC-3-6-TH**	**Inorganic Chemistry - 3**	Chemical Periodicity
			CC-3-6-P		Practicals: Complexometric Titrations; Chromatography of Metal Ions; Gravimetry
		Dr. Goutam Kumar Mondal	**CC-3-6-TH**		Chemistry of s and p block elements
			CC-3-6-P		Practicals: Complexometric Titrations; Chromatography of Metal Ions; Gravimetry
		Dr. Sanju Das	**CC-3-6-TH**		Coordination Chemistry – 1, Inorganic Polymers
			CC-3-6-P		Practicals: Complexometric Titrations; Chromatography of Metal Ions; Gravimetry
		Dr. Sucheta Singha (Chandra)	**CC-3-7-TH**	**Organic Chemistry-3**	Chemistry of alkenes and alkynes
			CC-3-7-P		Practicals: Identification of a Pure Organic Compound; Quantitative Estimations
			SEC-A2	**SEC-2**: Analytical Clinical Biochemistry	Proteins, Enzymes
		Dr. Ajanta Mukherji	**CC-3-7-TH**	**Organic Chemistry-3**	Aromatic substitution; Organometallics
			CC-3-7-P		Practicals: Identification of a Pure Organic Compound; Quantitative Estimations
			SEC-A2	**SEC-2**: Analytical Clinical Biochemistry	DNA & RNA, Biochemistry of Disease
		Dr. Arijit Kundu	**CC-3-7-TH**	**Organic Chemistry-3**	Carbonyl and Related compounds
			CC-3-7-P		Practicals: Identification of a Pure Organic Compound; Quantitative Estimations
			SEC-A2	**SEC-2**: Analytical Clinical Biochemistry	Carbohydrates, Lipids, Lipoproteins
Sem-3 (GE)	*follow the latest notification by CU	Dr. Sanju Das	**GE 3**	**Paper-3**	Theory: Chemical bonding, Coordination chemistry
					Practicals: Inorganic Chemistry
		Dr. Goutam Mandal			Theory: Comparative study of p-block elements and transition elements
					Practicals: Inorganic Chemistry
		Dr. Arijit Kundu			Theory: Aromatic Hydrocarbons, Organometallic Compounds
		Dr. Subhodip Samanta			Theory: Electrochemistry

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Sem-4 (CC+ SEC)	*follow the latest notification by CU	Dr. Sucheta Singha (Chandra)	**CC-4-8-TH**	**Organic Chemistry-4**	Organic Spectroscopy
			CC-4-8-P		Practical: Organic Qualitative Analysis
			SEC-B3	**SEC-3:** Pharmaceuticals Chemistry	Fermentation
		Dr. Ajanta Mukherji	**CC-4-8-TH**	**Organic Chemistry-4**	The Logic of Organic Synthesis; Nitro compounds; Alkylnitrile and isonitrile
			CC-4-8-P		Practical: Organic Qualitative Analysis
			SEC-B3	**SEC-3:** Pharmaceuticals Chemistry	Drugs & Pharmaceuticals
		Dr. Arijit Kundu	**CC-4-8-TH**	**Organic Chemistry-4**	Rearrangements; Amines; Diazonium salts and their related compounds
			CC-4-8-P		Practical: Organic Qualitative Analysis
			SEC-B3	**SEC-3:** Pharmaceuticals Chemistry	Drugs & Pharmaceuticals
		Dr. Rajendra Saha	**CC-4-9-TH**	**Physical Chemistry-3**	Foundation of Quantum Mechanics
			CC-4-9-P		Practical: Physical Chemistry Experiments (6 Experiments)
		Dr. Subhodip Samanta	**CC-4-9-TH**		Application of TD II + Crystal Structure
			CC-4-9-P		Practical: Physical Chemistry Experiments (6 Experiments)
		Dr. Ashis Kumar Mukherjee	**CC-4-10-TH**	**Inorganic Chemistry-4**	Reaction Kinetics and Mechanism
			CC-4-10-P		Practical: Inorganic Preparation; Instrumental techniques
		Dr. Goutam Kumar Mondal	**CC-4-10-TH**		Coordination Chemistry II
			CC-4-10-P		Practical: Inorganic Preparation; Instrumental techniques
		Dr. Sanju Das	**CC-4-10-TH**		Chemistry of d and f block elements
			CC-4-10-P		Practical: Inorganic Preparation; Instrumental techniques
Sem-4 (GE)	*follow the latest notification by CU	Dr. Subhodip Samanta	**GE 4**	**Paper-4**	Theory: Quantum Chemistry & Spectroscopy
		Dr. Sanju Das			Theory: Crystal Field Theory
					Practical: Organic Qualitative Analysis
		Dr. Ajanta Mukherji			Theory: Alcohols, Carbonyl compounds, Amino acids and carbohydrates
					Practical: Organic Qualitative Analysis
		Dr. Arijit Kundu			Theory: Phenols and ethers; Carboxylic acids and their derivatives; Amines and Diazonium salts
					Practical: Organic Qualitative Analysis

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Sem-5 (CC+ DSE)	*follow the latest notification by CU	Dr. Rajendra Saha	**CC-5-11-TH**	**Physical Chemistry-4**	Quantum Chemistry II
			CC-5-11-P		Practical: Computer programs (Using FORTRAN or C or C ++) based on numerical methods
			DSE-A	**DSE-A1 or A2 (any one)**	DSE-A1: Molecular Modelling and Drug Design or DSE-A2: Applications of computers in Chemistry
		Dr. Subhodip Samanta	**CC-5-11-TH**	**Physical Chemistry-4**	Statistical Thermodynamics
			CC-5-11-P		Practical: Computer programs (Using FORTRAN or C or C ++) based on numerical methods
			DSE-A	**DSE-A1 or A2 (any one)**	DSE-A1: Molecular Modelling and Drug Design or DSE-A2: Applications of Computers in Chemistry
Sem-5 (CC+ DSE)		Dr. Sucheta Singha (Chandra)	**CC-5-12-TH**	**Organic Chemistry-5**	Cyclic Stereochemistry; Pericyclic Reactions; Biomolecules: Peptides
			CC-5-12-P		Practical: Chromatographic separation; Spectroscopic Identification of Organic Compounds
		Dr. Ajanta Mukherji	**CC-5-12-TH**		Carbocycles and Heterocycles; Biomolecules: Nucleic acids
			CC-5-12-P		Practical: Chromatographic separation; Spectroscopic Identification of Organic Compounds
		Dr. Arijit Kundu	**CC-5-12-TH**	**Organic Chemistry-5**	Carbohydrates; Biomolecules: Aminoacids
			CC-5-12-P		Practical: Chromatographic separation; Spectroscopic Identification of Organic Compounds
		Dr. Ashis Kumar Mukherjee	**DSE-B**	**DSE-B1 or B2 (any one)**	DSE-B1: Inorganic Materials of Industrial Importance or DSE-B2: Novel Inorganic Solids
		Dr. Goutam Kumar Mondal	**DSE-B**		
		Dr. Sanju Das	**DSE-B**		

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Sem-6 (CC+ DSE)	*follow the latest notification by CU	Dr. Ashis Kumar Mukherjee	**CC-6-13-TH**	**Inorganic Chemistry - 5**	Theoretical principles in Qualitative Analysis
			CC-6-13-P		Practical: Qualitative Semi Micro Analysis of Mixtures
		Dr. Goutam Kumar Mondal	**CC-6-13-TH**		Organometallic Chemistry
			CC-6-13-P		Practical: Qualitative Semi Micro Analysis of Mixtures
		Dr. Sanju Das	**CC-6-13-TH**		Bioinorganic Chemistry
			CC-6-13-P		Practical: Qualitative Semi Micro Analysis of Mixtures
		Dr. Rajendra Saha	**CC-6-14-TH**	**Physical Chemistry-5**	Surface phenomenon, Dipole Moment & Polarizability
			CC-6-14-P		Practical: Physical Chemistry Experiments (6 Experiments)
		Dr. Subhodip Samanta	**CC-6-14-TH**		Molecular Spectroscopy, Photochemistry & Theory of Reaction Rate
			CC-6-14-P		Practical: Physical Chemistry Experiments (6 Experiments)
		Dr. Sucheta Singha (Chandra) Dr. Ajanta Mukherji Dr. Arijit Kundu	**DSE-A**	**DSE-A3**	Green Chemistry and Chemistry of Natural Products
		Faculties of the Dept. of Chemistry	**DSE-B**	**DSE-B3 or B4 (any one)**	DSE-B3: Polymer Chemistry or DSE-B4: Dissertation - Student will carry out research /review on a topic of Chemical Sciences as assigned by the faculties of the Department. A project report and digital presentation will be required for the assessment of the student