3-Year BSc (Hons.) [C.B.C.S]

LESSON PLAN

Department : Chemistry

Session : 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023

CORE COURSE

Semester	Programme	Course & Paper	Topic	Name of the Teacher	Hours (Classes)
I	Honours	CC-1 :ORGANIC CHEMISTRY-I	Basics of Organic Chemistry	S.Dhara	25
			General Treatment of Reaction Mechanism I	Dr. T.K.Manna	10
			Stereochemistry I	S.Dhara	25
		CC-2: PHYSICAL CHEMISTRY-I	Kinetic Theory and Gaseous state	S.Dhara	20
			Chemical Thermodynamics	Dr. T.K.Manna	25
			Chemical kinetics	Dr. T.K.Manna	15
II	Honours	CC-3: INORGANIC CHEMISTRY-I	Extra nuclear Structure of atom	S.Dhara	18
			Chemical periodicity	S.Dhara	8
			Acid-Base reactions	Dr. T.K.Manna	16
			Redox Reactions and precipitation reactions	Dr. T.K.Manna	18
		CC-4: ORGANIC CHEMISTRY-II	Stereochemistry II	S.Dhara	20
			General Treatment of Reaction Mechanism II	Dr. T.K.Manna	22
			Substitution and Elimination Reactions	Dr. T.K.Manna	18
III	Honours	CC-5: Physical Chemistry-II	Transport processes	S.Dhara	15
			Applications of Thermodynamics – I	Dr. T.K.Manna	25
			Foundation of Quantum Mechanics	Dr. T.K.Manna	20
		CC-6: Inorganic Chemistry-II	Chemical Bonding-I	S.Dhara	24
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			Radioactivity	Dr. T.K.Manna	12
		CC-7: Organic Chemistry-III	Chemistry of alkenes and alkynes	S.Dhara	15
			Aromatic Substitution	S.Dhara	10
			Carbonyl and Related Compounds	Dr. T.K.Manna	30
			Organometallics	Dr. T.K.Manna	5
		SEC-1: Pharmaceutical Chemistry	Drugs & Pharmaceuticals	Dr. T.K.Manna	20
			Fermentation	S.Dhara	10
		GE3: Chemical Energetics, Equilibria, Organic Chemistry-II	Chemical Energetics	Dr. T.K.Manna	14
			Chemical Equilibrium	S.Dhara	8
			Ionic Equilibria	S.Dhara	8
			Aromatic Hydrocarbons	S.Dhara	6
			Organometallic Compounds	S.Dhara	2
			Aryl Halides, Alcohols, Phenols and Ethers	Dr. T.K.Manna	14
			Carbonyl Compounds	Dr. T.K.Manna	8
IV	Honours	CC-8: PHYSICAL CHEMISTRY-III	Application of Thermodynamics – II	Dr. T.K.Manna	15
			Electrical Properties of molecules	S.Dhara	10
			Quantum Chemistry	S.Dhara	10
		CC-9: INORGANIC CHEMISTRY-III	General Principles of Metallurgy	S.Dhara	5
			Chemistry of s and p Block Elements	S.Dhara	15
			Noble Gases	Dr. T.K.Manna	5
			Inorganic Polymers	Dr. T.K.Manna	5
			Coordination Chemistry-I	Dr. T.K.Manna	10
		CC-10: ORGANIC CHEMISTRY-IV	Nitrogen compounds	S.Dhara	10
			Rearrangements	S.Dhara	10
			The Logic of Organic Synthesis	Dr. T.K.Manna	5
			Organic Spectroscopy	Dr. T.K.Manna	15
		SEC-2: PESTICIDE CHEMISTRY	General introduction to pesticides (natural and synthetic), benefits and adverse effects, structure activity relationship	Dr. T.K.Manna	15

			Synthesis and technical manufacture and uses of representative pesticides in the following classes: Organochlorines (DDT, Gammexene,); Organophosphates (Malathion, Parathion); Carbamates (Carbofuran and carbaryl); Quinones (Chloranil), Anilides (Alachlor and Butachlor)	S.Dhara	15
		GE-4: Solutions, Phase Eequilibria, Conductance, Electrochemistry & Analytical and Enviornmetal Chemistry-I	Solutions, Phase Equilibria, Conductance, Electromotive force	S.Dhara	25
			Chemical Analysis, Environmental Chemistry	Dr. T.K.Manna	25
V	Honours	CC-11: Inorganic Chemistry - IV	Coordination Chemistry-II	S.Dhara	20
			Transition Elements, Lanthanoids and Actinoids	Dr. T.K.Manna	10
		CC-12: Organic Chemistry - V	Carbocycles and Heterocycles	S.Dhara	15
			Cyclic Stereochemistry	S.Dhara	10
			Pericyclic reactions	Dr. T.K.Manna	10
			Carbohydrates	S.Dhara	10
			Bio-molecules	Dr. T.K.Manna	10
		DSE -1: Advanced Physical Chemistry	Crystal Structure	S.Dhara	10
			Statistical Thermodynamics	Dr. T.K.Manna	10
			Special selected topics	S.Dhara	10
		DSE-2: Analytical Methods in Chemistry	Qualitative and quantitative aspects of analysis	S.Dhara	5
			Optical methods of analysis	S.Dhara	20
			Thermal methods of analysis	Dr. T.K.Manna	5
			Electroanalytical methods	Dr. T.K.Manna	5
			Separation techniques	Dr. T.K.Manna	15
VI	Honours	CC-13: Inorganic Chemistry-V	Bioinorganic Chemistry	S.Dhara	15
			Organometallic Chemistry	S.Dhara	15
			Catalysis by Organometallic Compounds	Dr. T.K.Manna	10
			Reaction Kinetics and Mechanism	Dr. T.K.Manna	10
		CC-14: Physical Chemistry-V	Molecular Spectroscopy	Dr. T.K.Manna	20
			Photochemistry	S.Dhara	15
			Surface phenomenon	S.Dhara	15
		DSE-3: Green Chemistry	Introduction to Green Chemistry	Dr. T.K.Manna	10
			Principles of Green Chemistry and Designing a Chemical synthesis	Dr. T.K.Manna	20
			Examples of Green Synthesis/ Reactions and some real world cases	S.Dhara	20
			Future Trends in Green Chemistry	S.Dhara	10
		DSE-4: Polymer Chemistry	Introduction and history of polymeric materials	S.Dhara	10
			Functionality and its importance, Kinetics of Polymerization, Crystallization and crystallinity	S.Dhara	20
			Nature and structure of polymers, Determination of molecular weight of polymers, Glass transition temperature (Tg) and determination of Tg	Dr. T.K.Manna	20
			Polymer Solution, Properties of Polymer	Dr. T.K.Manna	20