

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

**Department : Chemistry**

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

**CORE COURSE**

<b>Semester</b>	<b>Programme</b>	<b>Course &amp; Paper</b>	<b>Topic</b>	<b>Name of the Teacher</b>
I	Honours	CC-1 :ORGANIC CHEMISTRY-I	Basics of Organic Chemistry	S.Dhara
			General Treatment of Reaction Mechanism I	Dr. T.K.Manna
			Stereochemistry I	S.Dhara
		CC-2: PHYSICAL CHEMISTRY-I	Kinetic Theory and Gaseous state	S.Dhara
			Chemical Thermodynamics	Dr. T.K.Manna
			Chemical kinetics	Dr. T.K.Manna
II	Honours	CC-3: INORGANIC CHEMISTRY-I	Extra nuclear Structure of atom	S.Dhara
			Chemical periodicity	S.Dhara
			Acid-Base reactions	Dr. T.K.Manna
			Redox Reactions and precipitation reactions	Dr. T.K.Manna
		CC-4: ORGANIC CHEMISTRY-II	Stereochemistry II	S.Dhara
			General Treatment of Reaction Mechanism II	Dr. T.K.Manna
III	Honours	CC-5: Physical Chemistry-II	Transport processes	S.Dhara
			Applications of Thermodynamics – I	Dr. T.K.Manna
			Foundation of Quantum Mechanics	Dr. T.K.Manna
		CC-6: Inorganic Chemistry-II	Chemical Bonding-I	S.Dhara
			Chemical Bonding-II	S.Dhara
			Radioactivity	Dr. T.K.Manna
		CC-7: Organic Chemistry-III	Chemistry of alkenes and alkynes	S.Dhara
			Aromatic Substitution	S.Dhara
			Carbonyl and Related Compounds	Dr. T.K.Manna
			Organometallics	Dr. T.K.Manna
		SEC-1: Pharmaceutical Chemistry	Drugs & Pharmaceuticals	Dr. T.K.Manna
			Fermentation	S.Dhara
		GE3: Chemical Energetics, Equilibria, Organic Chemistry-II	Chemical Energetics	Dr. T.K.Manna
			Chemical Equilibrium	S.Dhara
			Ionic Equilibria	S.Dhara
Aromatic Hydrocarbons	S.Dhara			
		Organometallic Compounds	S.Dhara	

			Aryl Halides, Alcohols, Phenols and Ethers	Dr. T.K.Manna
			Carbonyl Compounds	Dr. T.K.Manna
IV	Honours	CC-8: PHYSICAL CHEMISTRY-III	Application of Thermodynamics – II	Dr. T.K.Manna
			Electrical Properties of molecules	S.Dhara
			Quantum Chemistry	S.Dhara
		CC-9: INORGANIC CHEMISTRY-III	General Principles of Metallurgy	S.Dhara
			Chemistry of s and p Block Elements	S.Dhara
			Noble Gases	Dr. T.K.Manna
			Inorganic Polymers	Dr. T.K.Manna
			Coordination Chemistry-I	Dr. T.K.Manna
		CC-10: ORGANIC CHEMISTRY-IV	Nitrogen compounds	S.Dhara
			Rearrangements	S.Dhara
			The Logic of Organic Synthesis	Dr. T.K.Manna
			Organic Spectroscopy	Dr. T.K.Manna
		SEC-2: PESTICIDE CHEMISTRY	General introduction to pesticides (natural and synthetic), benefits and adverse effects, structure activity relationship	Dr. T.K.Manna
			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
		GE-4: Solutions, Phase Equilibria, Conductance, Electrochemistry & Analytical and Environmental Chemistry-I	Solutions, Phase Equilibria, Conductance, Electromotive force	S.Dhara
Chemical Analysis, Environmental Chemistry	Dr. T.K.Manna			
V	Honours	CC-11: Inorganic Chemistry - IV	Coordination Chemistry-II	S.Dhara
			Transition Elements, Lanthanoids and Actinoids	Dr. T.K.Manna
		CC-12: Organic Chemistry - V	Carbocycles and Heterocycles	S.Dhara
			Cyclic Stereochemistry	S.Dhara
			Pericyclic reactions	Dr. T.K.Manna
			Carbohydrates	S.Dhara
			Bio-molecules	Dr. T.K.Manna
		DSE -1: Advanced	Crystal Structure	S.Dhara
Statistical Thermodynamics	Dr.			

		Physical Chemistry		T.K.Manna		
			Special selected topics	S.Dhara		
		DSE-2: Analytical Methods in Chemistry	Qualitative and quantitative aspects of analysis	S.Dhara		
			Optical methods of analysis	S.Dhara		
			Thermal methods of analysis	Dr. T.K.Manna		
			Electroanalytical methods	Dr. T.K.Manna		
			Separation techniques	Dr. T.K.Manna		
		VI	Honours	CC-13: Inorganic Chemistry-V	Bioinorganic Chemistry	S.Dhara
					Organometallic Chemistry	S.Dhara
					Catalysis by Organometallic Compounds	Dr. T.K.Manna
Reaction Kinetics and Mechanism	Dr. T.K.Manna					
CC-14: Physical Chemistry-V	Molecular Spectroscopy			Dr. T.K.Manna		
	Photochemistry			S.Dhara		
	Surface phenomenon			S.Dhara		
DSE-3: Green Chemistry	Introduction to Green Chemistry			Dr. T.K.Manna		
	Principles of Green Chemistry and Designing a Chemical synthesis			Dr. T.K.Manna		
	Examples of Green Synthesis/ Reactions and some real world cases			S.Dhara		
	Future Trends in Green Chemistry			S.Dhara		
DSE-4: Polymer Chemistry	Introduction and history of polymeric materials			S.Dhara		
	Functionality and its importance, Kinetics of Polymerization, Crystallization and crystallinity			S.Dhara		
	Nature and structure of polymers, Determination of molecular weight of polymers, Glass transition temperature (T <sub>g</sub> ) and determination of T <sub>g</sub>			Dr. T.K.Manna		
	Polymer Solution, Properties of Polymer			Dr. T.K.Manna		