

**DEPARTMENT OF CHEMISTRY
VIJAYGARH JYOTISH RAY COLLEGE
SYLLABUS DISTRIBUTION**

SEMESTER –I (Hons)

Course Code	Name of Teacher	Topic Covered
CEMA-CC-1-1-TH	Dr. Debopam Sinha	Extra nuclear Structure of atom,
	Dr. Dasarath Mal	Acid-Base reactions, Redox Reactions.
	Dr. Anindita Mukherjee	Bonding and Physical Properties. General Treatment of Reaction Mechanism I
CEMA-CC-1-2-TH	Dr. Sayantani Chatterjee	Kinetic Theory and Gaseous state
	Dr. Sayantani Chatterjee	Transport processes
	Mr. Prithwiraj Sasmal	Chemical Kinetics
	Dr. Sumita Roy	Stereochemistry I, General Treatment of Reaction Mechanism II
CEMA-CC-1-1-P, CEMA-CC-1-2-P	Dr. Sumita Roy, Dr. Anindita Mukherjee	Organic Practicals.
	Dr. Dasarath Mal, Dr. Debopam Sinha	Inorganic Practicals.
	Dr. Sayantani Chatterjee, Mr. Prithwiraj Sasmal	Physical Practicals.

SEMESTER –II (Hons)

Course Code	Name of Teacher	Topic Covered
CEMA-CC-2-3-TH	Dr. Sumita Roy	Stereochemistry II, Substitution Reaction,
	Dr. Anindita Mukherjee	General Treatment of Reaction Mechanism III, Elimination Reaction.
CEMA-CC-2-4-TH	Dr. Dasarath Mal	Chemical Bonding-I, Chemical Bonding-II
	Dr. Debopam Sinha	Radioactivity
CEMA-CC-2-3-P	Dr. Sumita Roy, Dr. Anindita Mukherjee	Organic Preparations, purifications and melting point determination.
CEMA-CC-2-4-P	Dr. Dasarath Mal, Dr. Debopam Sinha	Iodo/Iodometric Titrations, Estimations

SEMESTER –III (Hons)

Course Code	Name of Teacher	Topic Covered
CEMA-CC-3-5-TH	Dr. Sayantani Chatterjee	Chemical Thermodynamics I and II
	Mr. Prithwiraj Sasmal	Chemical Equilibrium.
	Mr. Anupam Chowdhury	Electrochemistry.
CEMA-CC-3-6-TH	Dr. Dasarath Mal	Chemical Periodicity, Inorganic Polymers, Coordination Chemistry-I
	Dr. Debopam Sinha	Chemistry of <i>s</i> and <i>p</i> Block Elements
CEMA-CC-3-7-TH	Dr. Sumita Roy	Organometallics, Carbonyl and Related Compounds. Aromatic Substitution.
	Dr. Anindita Mukherjee	Chemistry of alkenes and alkynes. Carbonyl and Related Compounds (Addition to C=O)
CEMA-CC-3-5-P	Dr. Sayantani Chatterjee, Mr. Prithwiraj Sasmal	Physical Experiments.
CEMA-CC-3-6-P	Dr. Dasarath Mal, Dr. Debopam Sinha	Complexometric Titrations, Chromatography of metal ions, Gravimetry
CEMA-CC-3-7-P	Dr. Sumita Roy, Dr. Anindita Mukherjee	Identification of pure compounds, Organic Estimations.
SEC-A2	Dr. Sayantani Chatterjee	Analytical Clinical Biochemistry :Lipids, Lypoproteins, Biochemistry of diseases: Urine.
	Dr. Anindita Mukherjee	Analytical Clinical Biochemistry : Carbohydrates, proteins, enzyme, Biochemistry of diseases: Blood.

SEMESTER –IV (Hons)

Course Code	Name of Teacher	Topic Covered
CEMA-CC-4-8-TH	Dr.Sumita Roy	Nitrogen compounds, IR Spetroscopy, NMR Spetroscopy.
	Dr. Anindita Mukherjee	Rearrangements, The Logic of Organic Synthesis, UV Spetroscopy
CEMA-CC-4-9-TH	Dr. Sayantani Chatterjee	Colligative Properties, Phase Equilibrium.
	Mr. Prithwiraj Sasmal	Foundation of Quantum Mechanics.
	Mr. Anupam Chowdhury	Crystal Structure.
CEMA-CC-4-10-TH	Dr. Dasarath Mal	Coordination Chemistry-II, Reaction Kinetics and Mechanism.
	Dr. Debopam Sinha	Chemistry of <i>d</i> and <i>f</i> Block Elements
CEMA-CC-4-8-P	Dr.Sumita Roy, Dr.Anindita Mukherjee	Qualitative Analysis of Single Solid Organic Compounds.
CEMA-CC-4-9-P	Dr. Sayantani Chatterjee, Mr. Prithwiraj Sasmal	Physical Chemistry Experiments
CEMA-CC-4-10-P	Dr. Dasarath Mal, Dr. Debopam Sinha	Inorganic Preparations and Instrumental Techniques.
SEC-B4	Dr. Sayantani Chatterjee	Pesticide chemistry: Synthesis and technical manufacture and use of representative pesticides in the following classes: Carbamates, Quinones, anilides.
	Dr. Anindita Mukherjee	Pesticide chemistry: General introduction to pesticides, benefits and adverse effects, changing concepts of pesticides, structure activity relationship, Synthesis and technical manufacture and use of representative pesticides in the following classes: Organochlorines, organophosphate.

SEMESTER –V (Hons)

Course Code	Name of Teacher	Topic Covered
CEMA-CC-5-11-TH	Mr. Prithwiraj Sasmal	Quantum Chemistry II
	Dr. Sayantani Chatterjee	Statistical Thermodynamics.
	Mr. Anupam Chowdhury	Numerical Analysis.
CEMA-CC-5-12-TH	Dr.Sumita Roy	Heterocyclic Compounds, Pericyclic Reactions, Biomolecules.
	Dr.Anindita Mukherjee	Polynuclear hydrocarbon. Cyclic Stereochemistry, Carbohydrates
CEMA-CC-5-11-P	Mr. Anupam Chowdhury	Computer programs
CEMA-CC-5-12-P	Dr.Sumita Roy, Dr.Anindita Mukherjee	Chromatographic Separations, Spectroscopic Analysis of Organic Compounds.
DSC-A2Th	Mr. Prithwiraj Sasmal	Computer Programming Basics(FORTRAN)
	Mr. Anupam Chowdhury	Introduction to Spreadsheet Software(MS Excel). Statistical Analysis.
DSC-B1Th	Dr. Dasarath Mal	Silicate Industries, Fertilizers, Surface Coatings.
	Dr. Debopam Sinha	Batteries, Alloys, Catalysis, Chemical Explosives.
DSC-A2P	Mr. Anupam Chowdhury, Mr. Prithwiraj Sasmal	Practicals
DSC-B1P	Dr. Dasarath Mal, Dr. Debopam Sinha	Practicals

SEMESTER –VI (Hons)

Course Code	Name of Teacher	Topic Covered
CEMA-CC-6-13-TH	Dr. Dasarath Mal	Theoretical Principles in Qualitative Analysis., Organometallic Chemistry
	Dr. Debopam Sinha	Bioinorganic Chemistry, Catalysis by Organometallic Compounds.
CEMA-CC-6-14-TH	Dr. Sayantani Chatterjee	Molecular Spectroscopy.
	Mr. Prithwiraj Sasmal	Photochemistry and Theory of reaction rate.
	Mr. Anupam Chowdhury	Surface Phenomenon
CEMA-CC-6-13P	Dr. Dasarath Mal, Dr. Debopam Sinha	Qualitative Analysis of Inorganic salt mixture
CEMA-CC-6-14P	Dr. Sayantani Chatterjee, Mr. Anupam Chowdhury	Physical Practicals
DSC-A4Th	Dr. Sumita Roy, Dr. Dasarath Mal, Dr. Sayantani Chatterjee, Dr. Debopam Sinha, Mr. Anupam Chowdhury, Mr. Prithwiraj Sasmal	Optical methods of Analysis, Thermal methods of Analysis, Electroanalytical methods, Separation techniques.
DSC-A4P	Dr. Dasarath Mal, Dr. Debopam Sinha	Practicals
DSC-B4	Dr. Sumita Roy, Dr. Dasarath Mal, Dr. Sayantani Chatterjee, Dr. Debopam Sinha, Mr. Anupam Chowdhury, Mr. Prithwiraj Sasmal, Dr. Anindita Mukherjee	Dissertation

SEMESTER –I (Gen)

Course Code	Name of Teacher	Topic Covered
CC1/GE1(Theory)	Dr. Sayantani Chatterjee	Kinetic Theory of Gases and Real Gases
	Dr. Sayantani Chatterjee	Liquid
	Mr. Prithwiraj Sasmal	Chemical Kinetics
	Mr. Debopam Sinha	Atomic Structure
	Dr. Dasarath Mal	Chemical Periodicity
	Dr. Dasarath Mal	Acids and Bases
	Dr. Anindita Mukherjee	Fundamentals of Organic Chemistry
	Dr. Anindita Mukherjee	Stereochemistry
Dr. Anindita Mukherjee	Nucleophilic Substitution and Elimination Reactions	
CC1/GE1(Practical)	Dr. Dasarath Mal Dr. Debopam Sinha	Practicals

SEMESTER –II (Gen)

Course Code	Name of Teacher	Topic Covered
CC2/GE2(Theory)	Dr. Sayantani Chatterjee	Chemical Thermodynamics
	Mr. Prithwiraj Sasmal	Chemical Equilibrium
	Mr. Prithwiraj Sasmal	Solutions
	Dr. Sayantani Chatterjee	Phase Equilibria
	Mr. Sayantani Chatterjee	Solids
	Dr. Sumita Roy, Dr. Anindita Mukherjee	Aliphatic Hydrocarbon
	Dr. Dasarath Mal	Error Analysis and Computer Applications
Dr. Dasarath Mal	Redox Reactions	
CC2/GE2(Practical)	Dr. Sayantani Chatterjee, Mr. Prithwiraj Sasmal	Practicals

SEMESTER –III (Gen)

Course Code	Name of Teacher	Topic Covered
CC3/GE3(Theory)	Dr. Dasarath Mal	Chemical Bonding and molecular structure
	Dr. Debopam Sinha	Comparative study of p-block elements
	Dr. Debopam Sinha	Transition elements(3d series)
	Dr. Dasarath Mal	Coordination Chemistry
	Mr. Anupam Chowdhury	Ionic Equilibria
	Mr. Anupam Chowdhury	Conductance
	Mr. Anupam Chowdhury	Electromotive Force
	Dr. Sumita Roy	Aromatic Hydrocarbons
	Dr. Sumita Roy	Organometallic Compounds
	Dr. Sumita Roy	Aryl Halides
	CC3/GE3(Practical)	Dr. Dasarath Mal, Dr. Debopam Sinha
SEC-A2	Dr. Sayantani Chatterjee	Analytical Clinical Biochemistry :Lipids, Lypoproteins, Biochemistry of diseases: Urine.
	Dr. Anindita Mukherjee	Analytical Clinical Biochemistry : Carbohydrates, proteins, enzyme, Biochemistry of diseases: Blood

SEMESTER –IV (Gen)

Course Code	Name of Teacher	Topic Covered
CC4/GE4(Theory)	Dr.Sumita Roy	Alcohols, Phenols and Ethers
	Dr.Anindita Mukherjee	Carbonyl Compounds
	Dr.Anindita Mukherjee	Carboxylic Acids and Their Derivatives
	Dr.Sumita Roy	Amines and Diazonium Salts
	Dr.Sumita Roy, Dr.Anindita Mukherjee	Amino Acids and Carbohydrates
	Dr. Dasarath Mal	Crystal Field Theory
	Mr. Anupam Chowdhury	Quantum Chemistry and Spectroscopy
CC4/GE4 (Practical)	Dr.Sumita Roy, Dr.Anindita Mukherjee	Practicals
SEC-B4	Dr. Sayantani Chatterjee	Pesticide chemistry: Synthesis and technical manufacture and use of representative pesticides in the following classes: Carbamates, Quinones, anilides
	Dr.Anindita Mukherjee	Pesticide chemistry: General introduction to pesticides, benefits and adverse effects, changing concepts of pesticides, structure activity relationship, Synthesis and technical manufacture and use of representative pesticides in the following classes: Organochlorines, organophosphate.

SEMESTER –V (Gen)

Course Code	Name of Teacher	Topic Covered
DSC-A2Th	Dr. Dasarath Mal	Silicate Industries, Fertilizers, Surface Coatings
	Dr. Debopam Sinha	Batteries, Alloys, Catalysis, Chemical Explosives
DSC-A2P	Dr. Dasarath Mal, Dr. Debopam Sinha	Practicals

SEMESTER –VI (Gen)

Course Code	Name of Teacher	Topic Covered
DSC-B2Th	Dr.Sumita Roy, Dr. Dasarath Mal, Dr. Sayantani Chatterjee, Dr. Debopam Sinha, Mr. Anupam Chowdhury, Mr. Prithwiraj Sasmal	Optical methods of Analysis, Thermal methods of Analysis, Electro analytical methods, Separation techniques
DSC-B2P	Dr. Dasarath Mal, Dr. Debopam Sinha	Practicals