TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – I

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
1	CEMA-CC-1-1-TH	INORGANIC CHEMISTRY - 1	Dr. Madhusudan Shit	1) Extra nuclear Structure of atom		14
			Dr. Rajesh Bera	2) Acid-Base reactions		12
			Dr. Dibakar Sardar	3) Redox Reactions		14
		ORGANIC CHEMISTRY - 1A	Dr. Malay Kumar Bhattacharya	1) Basics of Organic Chemistry	Bonding and Physical Properties (a) Valence Bond Theory (b) Physical properties	9
			Dr. Tanya Das	1) Basics of Organic Chemistry	(a) Electronic displacements (b) MO theory	9
				2) General Treatment of Reaction Mechanism I	Mechanistic classification	2
	CEMA-CC-1-2-TH	ORGANIC CHEMISTRY – 1B	Dr. Malay Kumar Bhattacharya	General Treatment of Reaction Mechanism II	Reactive intermediates	3
			Dr. Tanya Das	Stereochemistry I	(a) Bonding geometries of carbon compounds and representation of molecules (b) Concept of chirality and symmetry (c) Relative and absolute configuration (d) Optical activity of chiral compounds	17

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – I

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
1	CEMA-CC-1-2-TH	PHYSICAL CHEMISTRY - 1	Biswajit Halder	1) Kinetic Theory and Gaseous state	(a) Kinetic Theory of gases (b) Maxwell's distribution of speed and energy (c) Real gas and virial equation	20
			Chandana Pramanik	2) Transport processes	(a) Diffusion (b) Viscosity	8
			Chandana Pramanik	3) Chemical kinetics	(a) Rate law, order and molecularity (b) Role of Temperature (c) Homogeneous catalysis	12

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – II

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
2	CEMA-CC-2-3-TH	ORGANIC CHEMISTRY - 2	Dr. Malay Kumar Bhattacharya	1) General Treatment of Reaction Mechanism III	(a) Reaction thermodynamics (b) Tautomerism (c) Reaction kinetics	20
				2) Substitution and Elimination Reactions	(a) Free-radical substitution reaction	6
			Dr. Tanya Das	1) Stereochemistry II	(a) Chirality arising out of stereoaxis (b) Concept of prostereoisomerism (c) Conformation	20
				2) Substitution and Elimination Reactions	(a) Nucleophilic substitution reactions (b) Elimination reactions	14
	CEMA-CC-2-4-TH	INORGANIC CHEMISTRY - 2	Dr. Rajesh Bera	1) Chemical Bonding-I	(a) Ionic bond (b) Covalent bond	20
			Dr. Madhusudan Shit	2) Chemical Bonding-II		30
			Dr. Dibakar Sardar	3) Radioactivity		20

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – III

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
3	CEMA-CC-3-5-TH	PHYSICAL CHEMISTRY - 2	Biswajit Halder	1) Chemical Thermodynamics I	(a) 1st law of Thermodynamics (b)Thermochemistry	10
			Biswajit Halder	2) Chemical Thermodynamics II	(a) Second Law (b)Thermo - dynamic relations (c) Systems of Variable Composition	20
			Biswajit Halder	3) Applications of Thermodynamics – I	Chemical Equilibrium	6
			Chandana Pramanik	4) Electrochemistry	(a) Conductance and transport number (b) Ionic equilibrium (c) Electromotive Force	24
	CEMA-CC-3-6-TH	INORGANIC CHEMISTRY - 3	Dr. Dibakar Sardar	1) Chemical periodicity		15
			Dr. Madhusudan Shit	2) Chemistry of s and p Block Elements		30
			Dr. Madhusudan Shit	3) Noble Gases		
			Dr. Rajesh Bera	4) Inorganic Polymers		
			Dr. Rajesh Bera	5) Coordination Chemistry-I		15

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – III

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
3	CEMA-CC-3-7-TH	ORGANIC CHEMISTRY - 3	Dr. Malay Kumar Bhattacharya	1) Aromatic Substitution	(a) Electrophilic aromatic substitution (b) Nucleophilic aromatic substitution	10
				2) Carbonyl and Related Compounds	Nucleophilic addition to α,β-unsaturated carbonyl system	10
				3)Organometallics	Grignard reagent; Organolithiums; Gilman cuprates	5
			Dr. Tanya Das	1) Chemistry of alkenes and alkynes	(a) Addition to C=C (b) Addition to C≡C (c) Conformation	15
				2) Carbonyl and Related Compounds	(a) Addition to C=O (b) Exploitation of acidity of α-H of C=O	20
	SEC - A2	ANALYTICAL CLINICAL BIOCHEMISTRY	Dr. Tanya Das	1(a) Carbohydrates (b) Proteins (c) Enzymes (d) Lipids (e) Lipoproteins		25
				2) Biochemistry of disease: A diagnostic approach by blood/ urine analysis	(a) Blood (b) Urine	5

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – IV

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
4	CEMA-CC-4-8-TH	ORGANIC CHEMISTRY - 4	Dr. Malay Kumar Bhattacharya	1) Nitrogen compounds	(a) Amines: Aliphatic & Aromatic (b) Nitro compounds (aliphatic and aromatic) (c) Alkylnitrile and isonitrile (d) Diazonium salts and their related compounds	12
				2) Organic Spectroscopy	(a) UV Spectroscopy (b) IR Spectroscopy (c) NMR Spectroscopy	20
			Dr. Tanya Das	1) Rearrangements	Mechanism with evidence and stereochemical features for the following ; (a) Rearrangement to electron- deficient carbon (b) Rearrangement to electron - deficient nitrogen (c) Rearrangement to electron - deficient oxygen (d) Aromatic rearrangements: Migration from oxygen to ring carbon (e) Aromatic rearrangements: Migration from nitrogen to ring carbon	14
				2) The Logic of Organic Synthesis	(a) Retrosynthetic analysis (b) Strategy of ring synthesis (c) Asymmetric synthesis	14

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – IV

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
4	CEMA-CC-4-9-TH	PHYSICAL CHEMISTRY - 4	Biswajit Halder	1) Application of Thermo - dynamics – II	(a) Colligative properties (b) Phase Equilibrium (c) Binary solutions	20
			Chandana Pramanik	1) Application of Thermodynamics – II		
			Biswajit Halder	2) Foundation of Quantum Mechanics	(a) Beginning of Quantum Mechanics (b) Wave function (c) Concept of Operators (d) Particle in a box	25
			Chandana Pramanik	3) Crystal Structure	(a) Bravais Lattice and Laws of Crystallography (b) Crystal planes (c) Specific heat of solid	15
	CEMA-CC-4-10-TH	INORGANIC CHEMISTRY - 4	Dr. Madhusudan Shit	1) Coordination Chemistry-II		30
			Dr. Rajesh Bera	2) Chemistry of d- and f- block elements	(a) Transition Elements (b) Lanthanoids and Actinoids	15
			Dr. Madhusudan Shit	3) Reaction Kinetics and Mechanism		15
	SEC – B4	PESTICIDE CHEMISTRY	Dr. Dibakar Sardar	Pesticide Chemistry		30

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – V

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
5	CEMA-CC-5-11-TH	PHYSICAL CHEMISTRY - 4	Biswajit Halder	1) Quantum Chemistry II	(a) Simple Harmonic Oscillator (b) Angular momentum (c) Hydrogen atom and hydrogen-like ions (d) LCAO	30
			Chandana Pramanik	2) Statistical Thermo – dynamics	(a) Configuration (b) Boltzmann distribution (c) Partition function (d) 3rd law (e) Adiabatic demagnetization	20
			Biswajit Halder	3) Numerical Analysis		10
	DSE – A2	APPLICATION OF COMPUTERS IN CHEMISTRY	Biswajit Halder Chandana Pramanik			60
	DSE - B1	INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE	Dr. Dibakar Sardar	1) Silicate Industries	(a) Glass (b) Ceramics (c) Cements	16
			Dr. Dibakar Sardar	2) Fertilizers		8
			Dr. Rajesh Bera	3) Surface Coatings		10
			Dr. Rajesh Bera	4) Batteries		6
			Dr. Madhusudan Shit	5) Alloys		10
			Dr. Madhusudan Shit	6) Catalysis		6
			Dr. Madhusudan Shit	7) Chemical explosives		4

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – V

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
5	CEMA-CC-5-12-TH	ORGANIC CHEMISTRY - 5	Dr. Malay Kumar Bhattacharya	1) Carbocyles and Heterocycles	(a) Polynuclear hydrocarbons and their derivatives	4
				2) Organic Spectroscopy	(a) UV Spectroscopy (b) IR Spectroscopy (c) NMR Spectroscopy	20
				3) Carbohydrates	(a) Monosaccharides (b) Disaccharides	14
				4) Biomolecules	(a) Aminoacids (b) Peptides (c) Nucleic acids	12
			Dr. Tanya Das	1) Carbocyles and Heterocycles	(a) Heterocyclic compounds	12
				2) Cyclic Stereochemistry	Alicyclic compounds	10
				3) Pericyclic reactions	Mechanism, stereochemistry, regioselectivity in case of (a) Electrocyclic reactions (b) Cycloaddition reactions (c) Sigmatropic reactions	8

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – VI

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPICS	No. Of Lectures
6	CEMA-CC-6-13-TH	INORGANIC CHEMISTRY - 5	Dr. Dibakar Sardar	1) Theoretical Principles in Qualitative Analysis		10
			Dr. Madhusudan Shit	2) Bioinorganic Chemistry		25
			Dr. Rajesh Bera	3) Organometallic Chemistry		25
			Dr. Rajesh Bera	4) Catalysis by Organometallic Compounds		
	DSE-A-4	ANALYTICAL METHODS IN CHEMISTRY - 5	Dr. Dibakar Sardar	1) Optical methods of analysis	(a) Introduction (b) UV-Visible Spectrometry (c) Basic principles of quantitative analysis (d) Infrared Spectrometry (e) Flame Atomic Absorption and Emission Spectrometry	30
				2) Thermal methods of analysis		8
				3) Electroanalytical methods		7
				4) Separation techniques		15
	CEMA-CC-6-14-TH	PHYSICAL CHEMISTRY - 5	Biswajit Halder	1) Molecular Spectroscopy	(a) Rotation spectroscopy (b) Vibrational spectroscopy (c) Electronic Spectroscopy (d) Raman spectroscopy	25
			Chandana Pramanik	2)Photochemistry and Theory of reaction rate	(a) Lambert-Beer's law (b) Rate of Photochemical processes	15
			Chandana Pramanik	3) Surface phenomenon	(a) Surface tension and energy (b) Adsorption (c) Colloids	15
			Biswajit Halder	4) Dipole moment and polarizability		5

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – VI

SEM	PAPER	Unit	Name of Teacher	TOPICS	No. Of Lectures
6	DSE-A-3	GREEN CHEMISTRY AND CHEMISTRY OF NATURAL PRODUCTS	Dr. Tanya Das	1) Introduction to Green Chemistry	4
				2) Principles of Green Chemistry and Designing a Chemical synthesis	16
				3) Examples of Green Synthesis/ Reactions and some real world cases	20
				4) Future Trends in Green Chemistry	12
			Dr. Malay Kumar Bhattacharya	1) Alkaloids	5
				2) Terpenes	3

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – I

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
1	CEMA-CC-1-1-TH	INORGANIC CHEMISTRY - 1	Dr. Madhusudan Shit	1) Extra nuclear Structure of atom		14
			Dr. Rajesh Bera	2) Acid-Base reactions		12
			Dr. Dibakar Sardar	3) Redox Reactions		14
		ORGANIC CHEMISTRY - 1A	Dr. Malay Kumar Bhattacharya	1) Basics of Organic Chemistry	Bonding and Physical Properties (a) Valence Bond Theory (b) Physical properties	9
			Dr. Tanya Das	1) Basics of Organic Chemistry	(a) Electronic displacements (b) MO theory	9
				2) General Treatment of Reaction Mechanism I	Mechanistic classification	2
	CEMA-CC-1-2-TH	ORGANIC CHEMISTRY – 1B	Dr. Malay Kumar Bhattacharya	General Treatment of Reaction Mechanism II	Reactive intermediates	3
			Dr. Tanya Das	Stereochemistry I	(a) Bonding geometries of carbon compounds and representation of molecules (b) Concept of chirality and symmetry (c) Relative and absolute configuration (d) Optical activity of chiral compounds	17

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – I

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
1	CEMA-CC-1-2-TH	PHYSICAL CHEMISTRY - 1	Biswajit Halder	1) Kinetic Theory and Gaseous state	(a) Kinetic Theory of gases (b) Maxwell's distribution of speed and energy (c) Real gas and virial equation	20
			Chandana Pramanik	2) Transport processes	(a) Diffusion (b) Viscosity	8
			Chandana Pramanik	3) Chemical kinetics	(a) Rate law, order and molecularity (b) Role of Temperature (c) Homogeneous catalysis	12

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – II

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
2	CEMA-CC-2-3-TH	ORGANIC CHEMISTRY - 2	Dr. Malay Kumar Bhattacharya	1) General Treatment of Reaction Mechanism III	(a) Reaction thermodynamics (b) Tautomerism (c) Reaction kinetics	20
				2) Substitution and Elimination Reactions	(a) Free-radical substitution reaction	6
			Dr. Tanya Das	1) Stereochemistry II	(a) Chirality arising out of stereoaxis (b) Concept of prostereoisomerism (c) Conformation	20
				2) Substitution and Elimination Reactions	(a) Nucleophilic substitution reactions (b) Elimination reactions	14
	CEMA-CC-2-4-TH	INORGANIC CHEMISTRY - 2	Dr. Rajesh Bera	1) Chemical Bonding-I	(a) Ionic bond (b) Covalent bond	20
			Dr. Madhusudan Shit	2) Chemical Bonding-II		30
			Dr. Dibakar Sardar	3) Radioactivity		20

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – III

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
3	CEMA-CC-3-5-TH	PHYSICAL CHEMISTRY - 2	Biswajit Halder	1) Chemical Thermodynamics I	(a) 1st law of Thermodynamics (b)Thermochemistry	10
			Biswajit Halder	2) Chemical Thermodynamics II	(a) Second Law (b)Thermo - dynamic relations (c) Systems of Variable Composition	20
			Biswajit Halder	3) Applications of Thermodynamics – I	Chemical Equilibrium	6
			Chandana Pramanik	4) Electrochemistry	(a) Conductance and transport number (b) Ionic equilibrium (c) Electromotive Force	24
	CEMA-CC-3-6-TH	INORGANIC CHEMISTRY - 3	Dr. Dibakar Sardar	1) Chemical periodicity		15
			Dr. Madhusudan Shit	2) Chemistry of s and p Block Elements		30
			Dr. Madhusudan Shit	3) Noble Gases		
			Dr. Rajesh Bera	4) Inorganic Polymers		
			Dr. Rajesh Bera	5) Coordination Chemistry-I		15

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – III

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
3	CEMA-CC-3-7-TH	ORGANIC CHEMISTRY - 3	Dr. Malay Kumar Bhattacharya	1) Aromatic Substitution	(a) Electrophilic aromatic substitution (b) Nucleophilic aromatic substitution	10
				2) Carbonyl and Related Compounds	Nucleophilic addition to α,β-unsaturated carbonyl system	10
				3)Organometallics	Grignard reagent; Organolithiums; Gilman cuprates	5
			Dr. Tanya Das	1) Chemistry of alkenes and alkynes	(a) Addition to C=C (b) Addition to C≡C (c) Conformation	15
				2) Carbonyl and Related Compounds	(a) Addition to C=O (b) Exploitation of acidity of α-H of C=O	20
	SEC - A2	ANALYTICAL CLINICAL BIOCHEMISTRY	Dr. Tanya Das	1(a) Carbohydrates (b) Proteins (c) Enzymes (d) Lipids (e) Lipoproteins		25
				2) Biochemistry of disease: A diagnostic approach by blood/ urine analysis	(a) Blood (b) Urine	5

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – IV

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
4	CEMA-CC-4-8-TH	ORGANIC CHEMISTRY - 4	Dr. Malay Kumar Bhattacharya	1) Nitrogen compounds	(a) Amines: Aliphatic & Aromatic (b) Nitro compounds (aliphatic and aromatic) (c) Alkylnitrile and isonitrile (d) Diazonium salts and their related compounds	12
				2) Organic Spectroscopy	(a) UV Spectroscopy (b) IR Spectroscopy (c) NMR Spectroscopy	20
			Dr. Tanya Das	1) Rearrangements	Mechanism with evidence and stereochemical features for the following ; (a) Rearrangement to electron- deficient carbon (b) Rearrangement to electron - deficient nitrogen (c) Rearrangement to electron - deficient oxygen (d) Aromatic rearrangements: Migration from oxygen to ring carbon (e) Aromatic rearrangements: Migration from nitrogen to ring carbon	14
				2) The Logic of Organic Synthesis	(a) Retrosynthetic analysis (b) Strategy of ring synthesis (c) Asymmetric synthesis	14

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – IV

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
4	CEMA-CC-4-9-TH	PHYSICAL CHEMISTRY - 4	Biswajit Halder	1) Application of Thermo - dynamics – II	(a) Colligative properties (b) Phase Equilibrium (c) Binary solutions	20
			Chandana Pramanik	1) Application of Thermodynamics – II		
			Biswajit Halder	2) Foundation of Quantum Mechanics	(a) Beginning of Quantum Mechanics (b) Wave function (c) Concept of Operators (d) Particle in a box	25
			Chandana Pramanik	3) Crystal Structure	(a) Bravais Lattice and Laws of Crystallography (b) Crystal planes (c) Specific heat of solid	15
	CEMA-CC-4-10-TH	INORGANIC CHEMISTRY - 4	Dr. Madhusudan Shit	1) Coordination Chemistry-II		30
			Dr. Rajesh Bera	2) Chemistry of d- and f- block elements	(a) Transition Elements (b) Lanthanoids and Actinoids	15
			Dr. Madhusudan Shit	3) Reaction Kinetics and Mechanism		15
	SEC – B4	PESTICIDE CHEMISTRY	Dr. Dibakar Sardar	Pesticide Chemistry		30

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – V

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
5	CEMA-CC-5-11-TH	PHYSICAL CHEMISTRY - 4	Biswajit Halder	1) Quantum Chemistry II	(a) Simple Harmonic Oscillator (b) Angular momentum (c) Hydrogen atom and hydrogen-like ions (d) LCAO	30
			Chandana Pramanik	2) Statistical Thermo – dynamics	(a) Configuration (b) Boltzmann distribution (c) Partition function (d) 3rd law (e) Adiabatic demagnetization	20
			Biswajit Halder	3) Numerical Analysis		10
	DSE – A2	APPLICATION OF COMPUTERS IN CHEMISTRY	Biswajit Halder Chandana Pramanik			60
	DSE - B1	INORGANIC MATERIALS OF INDUSTRIAL IMPORTANCE	Dr. Dibakar Sardar	1) Silicate Industries	(a) Glass (b) Ceramics (c) Cements	16
			Dr. Dibakar Sardar	2) Fertilizers		8
			Dr. Rajesh Bera	3) Surface Coatings		10
			Dr. Rajesh Bera	4) Batteries		6
			Dr. Madhusudan Shit	5) Alloys		10
			Dr. Madhusudan Shit	6) Catalysis		6
			Dr. Madhusudan Shit	7) Chemical explosives		4

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – V

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
5	CEMA-CC-5-12-TH	ORGANIC CHEMISTRY - 5	Dr. Malay Kumar Bhattacharya	1) Carbocyles and Heterocycles	(a) Polynuclear hydrocarbons and their derivatives	4
				2) Organic Spectroscopy	(a) UV Spectroscopy (b) IR Spectroscopy (c) NMR Spectroscopy	20
				3) Carbohydrates	(a) Monosaccharides (b) Disaccharides	14
				4) Biomolecules	(a) Aminoacids (b) Peptides (c) Nucleic acids	12
			Dr. Tanya Das	1) Carbocyles and Heterocycles	(a) Heterocyclic compounds	12
				2) Cyclic Stereochemistry	Alicyclic compounds	10
				3) Pericyclic reactions	Mechanism, stereochemistry, regioselectivity in case of (a) Electrocyclic reactions (b) Cycloaddition reactions (c) Sigmatropic reactions	8

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – VI

SEM	PAPER	Unit	Name of Teacher	TOPICS	SUB TOPICS	No. Of Lectures
6	CEMA-CC-6-13-TH	INORGANIC CHEMISTRY - 5	Dr. Dibakar Sardar	1) Theoretical Principles in Qualitative Analysis		10
			Dr. Madhusudan Shit	2) Bioinorganic Chemistry		25
			Dr. Rajesh Bera	3) Organometallic Chemistry		25
			Dr. Rajesh Bera	4) Catalysis by Organometallic Compounds		
	DSE-A-4	ANALYTICAL METHODS IN CHEMISTRY - 5	Dr. Dibakar Sardar	1) Optical methods of analysis	(a) Introduction (b) UV-Visible Spectrometry (c) Basic principles of quantitative analysis (d) Infrared Spectrometry (e) Flame Atomic Absorption and Emission Spectrometry	30
				2) Thermal methods of analysis		8
				3) Electroanalytical methods		7
				4) Separation techniques		15
	CEMA-CC-6-14-TH	PHYSICAL CHEMISTRY - 5	Biswajit Halder	1) Molecular Spectroscopy	(a) Rotation spectroscopy (b) Vibrational spectroscopy (c) Electronic Spectroscopy (d) Raman spectroscopy	25
			Chandana Pramanik	2)Photochemistry and Theory of reaction rate	(a) Lambert-Beer's law (b) Rate of Photochemical processes	15
			Chandana Pramanik	3) Surface phenomenon	(a) Surface tension and energy (b) Adsorption (c) Colloids	15
			Biswajit Halder	4) Dipole moment and polarizability		5

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B. Sc. (HONOURS) SEMESTER – VI

SEM	PAPER	Unit	Name of Teacher	TOPICS	No. Of Lectures
6	DSE-A-3	GREEN CHEMISTRY AND CHEMISTRY OF NATURAL PRODUCTS	Dr. Tanya Das	1) Introduction to Green Chemistry	4
				2) Principles of Green Chemistry and Designing a Chemical synthesis	16
				3) Examples of Green Synthesis/ Reactions and some real world cases	20
				4) Future Trends in Green Chemistry	12
			Dr. Malay Kumar Bhattacharya	1) Alkaloids	5
				2) Terpenes	3

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B.Sc. GENERAL SEMESTER – I

SEM	PAPER	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
1	CEMG-CC -1 / GE-1-TH	Biswajit Halder	Kinetic Theory of Gases and Real gases		6
		Chandana Pramanik	Liquids		6
		Chandana Pramanik	Chemical Kinetics		8
		Dr. Madhusudan Shit	Atomic Structure		7
		Dr. Dibakar Sardar	Chemical Periodicity		7
		Dr. Rajesh Bera	Acids and bases		6
		Dr. Malay Kumar Bhattacharya	1) Fundamentals of Organic Chemistry	Electronic displacements	8
			2) Nucleophilic Substitution and Elimination Reactions	Elimination reaction	
		Dr. Tanya Das	1) Stereochemistry		12
			2) Nucleophilic Substitution and Elimination Reactions	Substitution reaction	

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B.Sc. GENERAL SEMESTER – II

SEM	PAPER	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
2	CEMG-CC-2 / GE-2-TH	Biswajit Halder	Chemical Thermodynamics		14
		Biswajit Halder	Chemical Equilibrium		7
		Chandana Pramanik	Solutions		7
		Chandana Pramanik	Phase Equilibria		7
		Chandana Pramanik	Solids		7
		Dr. Malay Kumar Bhattacharya	1) Aliphatic Hydrocarbons	Alkanes	1
		Dr. Tanya Das	1) Aliphatic Hydrocarbons	(a) Alkenes (b) Alkynes	3
		Dr. Dibakar Sardar	Error Analysis and Computer Applications		8
		Dr. Madhusudan Shit	Redox reactions		6

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B.Sc. GENERAL SEMESTER – III

SEM	PAPER	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
3	CEMG-CC-3/GE-3-TH	Dr. Rajesh Bera	Chemical Bonding and Molecular Structure	(a) Ionic Bonding (b) Covalent bonding	18
		Dr. Madhusudan Shit	Comparative study of p-block elements		6
		Dr. Madhusudan Shit	Transition Elements (3d series)		8
		Dr. Dibakar Sardar	Coordination Chemistry		6
		Biswajit Halder	ELECTROCHEMISTRY	Ionic Equilibria	6
		Biswajit Halder	ELECTROCHEMISTRY	Conductance	6
		Chandana Pramanik	ELECTROCHEMISTRY	Electromotive force	6
		Dr. Tanya Das	Aromatic Hydrocarbons		2
		Dr. Malay Kumar Bhattacharya	Organometallic Compounds		1
		Dr. Tanya Das	Aryl Halides		1
	SEC-A-1	Dr. Dibakar Sardar	Basic Analytical Chemistry	(a) Introduction (b) Analysis of soil (c) Analysis of water (d) Analysis of food products (e) Chromatography (f) Ion-exchange (g) Analysis of cosmetics	30

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B.Sc. GENERAL SEMESTER – IV

SEM	PAPER	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
4	CEMG-CC-4/GE-4-TH	Dr. Malay Kumar Bhattacharya	Alcohols, Phenols and Ethers	(a) Alcohols (b) Diols (c) Ethers	8
			Amines and Diazonium Salts		7
			Amino Acids and Carbohydrates		10
		Dr. Tanya Das	Alcohols, Phenols and Ethers	Phenols	3
			Carbonyl Compounds	Aldehydes and Ketones (aliphatic and aromatic)	9
			Carboxylic Acids and Their Derivatives		3
		Dr. Madhusudan Shit	Crystal Field Theory		9
		Biswajit Halder	Quantum Chemistry & Spectroscopy		11
	SEC-A-3	Dr. Rajesh Bera	Pharmaceuticals Chemistry	Drugs & Pharmaceuticals	30
				Fermentation	

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B.Sc. GENERAL SEMESTER – V

SEM	PAPER	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
5	DSE-A-2	Dr. Madhusudan Shit	Inorganic Materials Of Industrial Importance	Silicate Industries	16
		Dr. Madhusudan Shit		Fertilizers	8
		Dr. Madhusudan Shit		Surface Coatings	10
		Dr. Rajesh Bera		Batteries	6
		Dr. Rajesh Bera		Alloys	10
		Dr. Rajesh Bera		Catalysis	6
		Dr. Rajesh Bera		Chemical explosives	4
	SEC-A-2	Dr. Tanya Das	Analytical Clinical Biochemistry	(a) Carbohydrates (b) Proteins (c) Enzymes (d) Lipids (e) Lipoproteins (f) Biochemistry of disease: A diagnostic approach by blood/ urine analysis.	30

TEACHING PLAN (CBCS)
DEPARTMENT OF CHEMISTRY
B.Sc. GENERAL SEMESTER – VI

SEM	PAPER	Name of Teacher	TOPICS	SUB TOPIC	No. Of Lectures
6	DSE-B-1	Dr. Tanya Das	Green Chemistry And Chemistry Of Natural Products	Introduction to Green Chemistry	4
				Principles of Green Chemistry and Designing a Chemical synthesis	16
				Examples of Green Synthesis/ Reactions and some real world cases	20
				Future Trends in Green Chemistry	12
				Alkaloids	5
				Terpenes	3
	SEC-A-4	Dr. Rajesh Bera	Pesticide Chemistry		30