Teaching Plan for Academic Year 2023-2024 (Even Semester)

Faculty Name	Course Name	Paper Name	Sem	Month	Topic	Course Completed	Any Remarks
Dr.Anil K Aggarwal	B.Sc Physical Science	Conductance Electrochemistry and Chemical Kinetics DSE6	VI	January	UNIT-3 The concept of reaction rates, effect of temperature, pressure, catalyst and other factors on reaction rates. Order and molecularity of a reaction, integrated rate equations for zero, first and second order reactions (derivation not required), half-life of a reaction, Concept of activation energy and its calculation from Arrhenius equation. Catalysis	30%	-
				Februar y	(UNIT-2) Concept of reversible and irreversible electrochemical cells, Standard hydrogen electrode, standard electrode potential, concept of EMF of a cell, measurement of EMF of a cell, Nemst cquation and its importance, types of electrodes (Reference and inert electrodes), electrochemical series.	20%	
				March	(UNIT-2) Thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S from EMF data. Calculation of equilibrium constant from EMF data. pH determination using glass electrode, Potentiometric titrations-qualitative treatment (acid-base and oxidation-reduction only).	20%	

	April	(UNIT-1) Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes, Kohlrausch Law of independent migration of ions, lonic velocity, mobility and heir determination, transference number and its relation to ionic mobility. Conductometric titrations (only acid-base).	25%	
	MAY	Revison, Test and **Previous Year Question Papers**	5%	

(Academic Year 2023-24) Teaching Plan for the Academic session (Jan - May 2024)

Faculty Name	Course Name	Paper Name	Semester	Section	Month (1)	Topic	Total course %	Course complete %	ICT Tools used	Any remarks
Dr. P.K. Sahu	B.Sc(H) Chemistry	Electrochemistry (Physical Chemistry) (21720124003)	(IV)	(N/A)	January	Unit I Electrochemical Cell upto Application of emf Numbers	12%		Whatsapp & Google Classroom for sharing Notes	
					Febrary	Concn Cell & Application of emf Numbers	28%		"	
					March	Chemical Kinetics upto Chain Rxn	28%		"	ASSIGNMENT I
					April & May	Collision Theory & Catalysis Revision & Tying Question	32% 06% Revision		"	ASSIGNMENT II Class Test

Dr. P.K. Sahu

Teaching Plan for Academic year 2023-24 (Even Semester):

Faculty Name	Course Name	Paper Name	Semester	Section	Month	Topic	Total Course %	Course Completed %	ICT Tools	Any Remarks
Dr. Neena Khanna (50 % syllabus covered by me (Shared with Dr Yogesh Kumar)	B.Sc. (H) Chemistry	Spectroscopy and applied organic chemistry	VI	---	January	Dyes	10	10	Chalk and blackboard	Assignment taken
					February	Dyes	10	10	Chalk and Blackboard	Test was taken
					March	Dyes	10	10	Chalk and Blackboard	
					April	Pharmaceutical compounds	10	10	Chalk and Blackboard	
					May	Pharmaceutical compounds	10	10	Chalk and Blackboard	

Teaching Plan for the Academic Year: 2023-2024 (Even Semester)

Faculty Name	Course Name	Paper Name	Semester	Section	Month	Topic/Unit	Total Course (%)	ICT Tools used	Remarks
Prof. Nand Gopal Giri	B.Sc. (Life Science)	Organometallics… IR, UV spectroscopy	VI	B	January	Polycyclic aromatic hydrocarbons	12.5 %	Offline mode	Topic explained and notes shared
					February	Reactive methylene compounds	12.5 %	Offline mode	Topic explained and notes shared
					March	Heterocyclic compounds	12.5 %	Offline mode	Topic explained and notes shared
					April	IR & UV spectroscopy	12.5 %	Offline mode	Topic explained and notes shared

Prof. (Dr.) Nand Gopal Giri

Teaching Plan for The Academic Year: 2023-2024 (Even Semester)										
Faculty Name	**Course Name**	**Paper Name**	**Semester**	**Section**	**Month (s)**	**Topics/Units**	**Total Course (%)**	**Course Completed (%)**	**ICT Tools Used**	**Any Remarks**
Dr. Vandana Katoch	B.Sc (H) Chemistry	Thermodynamics and its applications	II	None	January	Basics of Chemical Thermodynamics	20	20	Class room Teaching	-
					February	First and Second Law of Therodynamics	35	35	Class room Teaching	-
					March	Third Law of Therodynamics and Thermo chemistry	20	20	Class room Teaching	-
					April	Systems of Variable composition	25	25	Class room Teaching	

					May	Test and powerpoint presentation			Test and powerpoint presentation	Test and powerpoint presentation

VANDANA KATOCH

Teaching Plan for the Academic Year: 2023-2024 (Even Semester)

Faculty Name	Course Name	Paper Name	Sem.	Section	Month(s)	Topics/Units	Total Course (%)	Course Completed (%)	ICT Tools Used
Dr. Sunil Yadav	BSc. (H) Chemistry	Chemistry of s- and p-Block Elements (DSC-4: Inorganic Chemistry -II)	II	None	January	UNIT – I: General Principles of Metallurgy, UNIT – II: Chemistry of s- Block Elements General characteristics: melting point, flame colouration, reducing nature, diagonal relationships and anomalous behavior of first member of each group. Reactions of alkali and alkaline earth metals with oxygen, hydrogen, nitrogen and water.	25	25	Google Classroom
					February	Common features such as ease of formation, thermal stability, energetics of dissolution, and solubility of the following alkali and alkaline earth metal compounds: hydrides, oxides, peroxides, superoxides, carbonates, nitrates, sulphates. Complex formation tendency of s-block elements; structure of the following complexes: crown ethers and cryptates of Group I; basic beryllium acetate, beryllium nitrate, EDTA complexes of calcium	25	25	Google Classroom

						and magnesium. Solutions of alkali metals in liquid ammonia and their properties			
					March	UNIT – III: Chemistry of *p*-Block Elements Electronic configuration, atomic and ionic size, metallic/non-metallic character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Catenation, Allotropy of C, P, S; inert pair effect, diagonal relationship between B and Si and anomalous behaviour of first member of each group.	25	25	Google Classroom
					April	UNIT – IV: Compounds of *p*-Block Elements Acidic/basic nature, stability, ionic/covalent nature, oxidation/reduction, hydrolysis, action of heat on the following: Hydrides of Group 13 (only diborane), Group 14, Group 15 (EH_3 where E = N, P,As, Sb, Bi), Group 16 and Group 17. Oxoacids of phosphorus, sulphur and chlorine	22	22	Google Classroom
					May	Interhalogen and pseudohalogen compound Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF_2) and	03	03	Google Classroom

						discussion of previous years papers			
Dr. Sunil Yadav	BSc. (H) Chemistry	Coordination Chemistry and Reaction Mechanism (DSC-10: Inorganic Chemistry -IV)	IV	None	January	Werner's Coordination theory, simple problems based on this theory IUPAC nomenclature of coordination compounds, isomerism in coordination compounds (coordination numbers 4 and 6)	12	12	Google Classroom
					February	Valence bond theory and its application to complexes of coordination numbers 4 and 6.	12	12	Google Classroom
					March	Brief discussion of thermodynamic and kinetic stability, Factors affecting stability of complexes, such as chelate effect, macrocyclic effect, resonance effect etc., trends in step wise formation constant, interpretation of lability and inertness based on VBT and CFT.	12	12	Google Classroom
					April	Introduction to inorganic reaction mechanisms, concept of reaction pathways, transition state, intermediate and activated complex. Substitution reactions in square planar complexes	12	12	Google Classroom
					May	Factors affecting the rate of Substitution reactions in square planar complexes-	05	05	Google Classroom

						such as charge effect, solvent effect and Trans- effect (Theories of trans-effect) and discussion of previous years papers			
Dr. Sunil Yadav	BSc. (H) Chemistry	Organometallic Chemistry & Bio-inorganic Chemistry, INORGANIC CHEMISTRY - IV	VI	None	March	Unit 1: Theoretical Principles in Qualitative Analysis (H_2S Scheme)			Google Classroom
					April	Unit 3: Bioinorganic Chemistry Metal ions present in biological systems, classification of elements according to their action in biological system. Geochemical effect on the distribution of metals. Sodium / K-pump, carbonic anhydrase and carboxypeptidase. Excess and deficiency of some trace metals. Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Use of chelating agents in medicine, Cisplatin as an anti-cancer drug.			Google Classroom
					May	Iron and its application in bio-systems, Haemoglobin, Myoglobin; Storage and transfer of iron. and discussion of previous years papers			Google Classroom
Dr. Sunil Yadav	BSc. (P) Life Sciences	Organometallics, Bioinorganic Chemistry, Polynuclear	VI	A	January	Unit 1: Chemistry of 3d metals: General discussion of 3d metals. Oxidation states displayed by Cr, Fe,	12		Google Classroom

		Hydrocarbons and UV, IR Spectroscopy				Co, Ni and Cu. A study of the following compounds (including preparation and important properties): $K_2Cr_2O_7$, $KMnO_4$, $K_4[Fe(CN)_6]$ Unit 2: Organometallic Compounds Definition and classification with appropriate examples based on nature of metal-carbon bond (ionic, s, p and multicentre bonds).			
					February	Structure and bonding of methyl lithium and Zeise's salt. Structure and physical properties of ferrocene. 18-electron rule as applied to carbonyls. Preparation, structure, bonding and properties of mononuclear and polynuclear carbonyls of 3d metals. π-acceptor behavior of carbon monoxide (MO diagram of CO to be discussed),	12	12	Google Classroom
					March	Synergic effect and use of IR data to explain extent of back bonding. Unit 3: Bio-Inorganic Chemistry; A brief introduction to bio-inorganic chemistry	12	12	Google Classroom
					April	Role of metal ions present in biological systems with special reference to Na^+, K+	12	12	Google Classroom

						and Mg^{2+} ions: Na/K pump; Role of Mg^{2+} ions in energy production and chlorophyll. Brief introduction to oxygen transport and storage (haemoglobin -myoglobin system).			
					May	Brief introduction about toxicity of metal ions (Hg^{2+} and Cd^{2+}) and discussion of previous years papers	02	02	Google Classroom
Dr. Sunil Yadav	BSc. (P) Life Sciences	Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy	VI	B	January	General discussion of 3d metals. Oxidation states displayed by Cr, Fe, Co, Ni and Cu.	06	06	Google Classroom
					February	$K_2Cr_2O_7$, $KMnO_4$, $K_4[Fe(CN)_6]$	06	06	Google Classroom
					March	A brief introduction to bio-inorganic chemistry. Role of metal ions present in biological systems with special reference to Na^+, K^+ and Mg^{2+} ions: Na/K pump; Role of Mg^{2+} ions in energy production and chlorophyll.	06	06	Google Classroom
					April	Brief introduction to oxygen transport and storage (haemoglobin - myoglobin system). Brief introduction about toxicity of metal ions ($Hg^{2+}$and Cd^{2+}).	07	07	Google Classroom
					May	Revision and discussion of previous years papers			Google Classroom

Sunil

Teaching Plan for Academic year 2023-24 (Even Semester):

Faculty Name	Course Name	Paper Name	Semester	Section	Month	Topic	Total Course %	Course Completed %	ICT tools Used	Any Remarks
Dr. Priyanka Kumari	B.Sc. (H) Chemistry	Analytical Methods in Chemical Analysis	VI	---	January	Error, Accuracy, Gaussian Distribution	10	10	Google Classroom for sharing notes	----
					February	Mean and standard Deviation and Confidence limits	10	10	Google Classroom for sharing notes	
					March	Solvent Extaction	15	15	Google Classroom for sharing notes	
					April	Chromatography	10	10	Google Classroom for sharing notes	Test and Power point presentation
					May	Discussion of Previous Papers	5	5	Google Classroom for sharing notes	Test and Power point presentation
	Life Science	Atomic Structure	II	A	January	Atomic and ionic Radii,			Google Classroom	

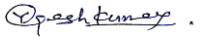
		and Chemical Bonding				Ionization energy			for sharing notes	
					February	Electron gain enthalpy			Google Classroom for sharing notes	
					March	Schrodinger equation, Probability distribution Curves			Google Classroom for sharing notes	
					April	Pauli Principle, Hund rule, Spin multiplicity, Afbau Rule			Google Classroom for sharing notes	Test and Power point presentation
					May	Discussion of Previous Papers			Google Classroom for sharing notes	Test and Power point presentation
	Life Science	Atomic Structure and Chemical Bonding	II	B	January	Atomic and ionic Radii, Ionization energy			Google Classroom for sharing notes	
					February	Electron gain enthalpy			Google Classroom for	

									sharing notes	
					March	Schrodinger equation, Probability distribution Curves			Google Classroom for sharing notes	
					April	Pauli Principle, Hund rule, Spin multiplicity, Afbau Rule			Google Classroom for sharing notes	Test and Power point presentation
					May				Google Classroom for sharing notes	Test and Power point presentation

Teaching Plan for The Academic Year: 2023-2024 (Even Semester)										
Faculty Name	**Course Name**	**Paper Name**	**Sem.**	**Section**	**Month (s)**	**Topics/Units**	**Total Course (%)**	**Course Completed (%)**	**ICT Tools Used**	**Any Remarks**
Dr. Yogesh Kumar 50 % syllabus covered by me (**Shared with Dr Neena Khanna**)	B.Sc (H) Chemistry	ORGANIC CHEMISTRY - V	VI	None	February	General principles Introduction to absorption and emission spectroscopy. And UV Spectroscopy	10	10	Google Classroom for sharing notes	-
					March	IR and NMR Spectroscopy	20	20	Google Classroom for sharing notes	-
					April	NMR Spectroscopy and its application and Dyes	15	15	Google Classroom for sharing notes	-
					May	Discussion of previous year Papers	5	5	Google Classroom for sharing notes	Test and powerpoint presentations were taken

Dr. Yogesh Kumar	B.Sc (H) Chemistry (DSE)	Reactions, Reagents and Chemical Process	IV	None	February	**UNIT – 1: Name Reactions**	15	15	Google classroom for sharing notes	
					March	**UNIT – 1 & 2: Name Reactions & Reducing Reagents**	35	35	Google classroom for sharing notes	
					April	**UNIT –2 &3: Reducing Reagents & Oxidising Agent**	35	35	Google classroom for sharing notes	
					May	**UNIT – 4: Process Chemistry**	15	15	Google classroom for sharing notes	Test and powerpoint presentations were taken
Dr. Yogesh Kumar 50 % syllabus covered by me (**Shared with Mr Dipesh Singh**)	B.Sc (P) Life Sciences (DSE)	Chemistry of Carboxylic Acids & their Derivatives, Amines and Heterocycles DSC-10: Chemistry-04	IV	None	February	Introduction of Amines	10	10	Google classroom for sharing notes	
					March	Amines Preparation and its reactions	20	20	Google classroom for sharing notes	
					April	Electrophilic substitution reactions and Diazonium Salt	15	15	Google classroom for sharing notes	

					May	Discussion of previous year Papers	5	5	Google classroom for sharing notes	Test and powerpoint presentations were taken



Teaching Plan for The Academic Year: 2023-2024 (Even Semester)

Faculty Name	Course Name	Paper Name	Semester	Section	Month (s)	Topics/Units	Total Course (%)	Course Completed (%)	ICT Tools used	Any Remarks
Mr. Deepesh Simgh	B.Sc. (P) Life Science	DSC-Organometallics, Bio-inorganic Chemistry, Polynuclear Hydrocarbons and UV, IR	VI	A	January	Polynuclear hydrocarbon-Naphthalene, Anthracene Heterocycle compounds-Pyrrole, Furan	25	25	Google Classroom for sharing notes	
					February	Heterocycle compounds-Thiophene, Pyridine Active Methylene compounds	20	20		
					March	Reactions of Ethyl acetoacetate. Introduction to spectroscopy-UV visible spectroscopy	25	25		
					April	Application of UV spectroscopy, IR spectroscopy and applications	25	30		Test and Assignments were taken
					May	Discussion of previous year question papers				
	B.Sc. (P) Physical Science	DSC-Organometallics, Bio-inorganic Chemistry, Polynuclear Hydrocarbons and UV, IR	VI	A	January	Polynuclear hydrocarbon-Naphthalene, Anthracene Heterocycle compounds-Pyrrole, Furan	25	25	Google Classroom for sharing notes	
					February	Heterocycle compounds-Thiophene, Pyridine Active Methylene compounds	20	20		
					March	Reactions of Ethyl acetoacetate. Introduction to spectroscopy-UV visible spectroscopy	25	25		
					April	Application of UV spectroscopy, IR spectroscopy	25	25		Test and Assignments were taken
					May	Application of IR ,spectroscopy Discussion of previous year question papers	5	5		

Deepesh Singh

	B.Sc. (P) Life Science	DSC- Chemistry of Carboxylic Acids & their Derivatives, Amines and Heterocycles	IV	B	January	Preparation and reactions of carboxylic acids	15	15	Google Classroom for sharing notes	
					February	Carboxylic acid derivatives preparations	10	10		
					march	Reactions of carboxylic acid derivatives ,active methylene compounds	20	20		
					April	Heterocyclic compounds- pyrrole, furan, thiophene, pyridine	15	15		Test and Assignments were taken
					Mat	Discussion of previous year question papers				

Teaching Plan for the Academic Year: 2023-2024 (Even Semester)										
Faculty Name	**Course Name**	**Paper Name**	**Semester**	**Section**	**Months**	**Topic/Units**	**Total Course (%)**	**Course Completed (%)**	**ICT Tools Used**	**Any Remarks**
Dr Seema	B.Sc.(P) Life Science	Chemical Bonding and Elements in Biological System	II	A+B	February	Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds	15	15	Classroom Teaching and whatsapp group for sharing of notes	
					March	Bond moment, dipole moment and percentage ionic character. Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds, Molecular Orbital Approach: Rules for the LCAO method,	40	40	Classroom Teaching and whatsapp group for sharing of notes	
					April	Bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods and heteronuclear diatomic molecules such as CO, NO and NO+. Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waals forces	40	40	Classroom Teaching and whatsapp group for sharing of notes	Assignment was given and discussed .
					May	Discussion of previous years exam questions	5	5	Classroom Teaching and whatsapp group for sharing of notes	
	B.Sc.(H) Chemistry	DSE Analytical Methods in Chemistry	VI	none	February	**Unit 2: Optical methods of analysis** Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and rules	15	15	Classroom Teaching and whatsapp group for sharing of notes	
					March	UV. Visible Spectrometry: Basic principles of instrumentation (choice of source, monochromator and detector) for single and double beam instrument: Transmittance. Absorbance and Beer-Lambert law Basic principles of quantitative analysis: estimation of metal ions from aqueous solution,	40	40	Classroom Teaching and power point presentations whatsapp group for sharing of notes	

						geometrical isomers, keto-enol tautomers.				
					April	Flame Atomic Absorption and Emission Spectrometry: Basic principles of instrumentation (choice o source, monochromator, detector, choice of flame and Bumer designs). Techniques of atomization and sampie introduction; Method of background correcton, sources, of chemical interferences and their method of removal.	40	40	Classroom Teaching and power point presentations, whatsapp group for sharing of notes	Test was taken
					May	Techniques for the quantitative estimation of trace level of metal ions from water. Discussion of previous year question papers	5	5	Classroom Teaching and whatsapp group for sharing of notes	Discussed class test and Previous year question Papers
B.Sc.+ B.A. (Hons and prog courses)	VAC Science and Society	II	None	Februar y		contributions of Indian scientists since ancient times and the contributions of women in science. Philosophy of science, the scientific method, importance of observation, questions and experimental design, rational thinking, myths vs. Facts	20	20	Classroom Teaching and whatsapp group for sharing of notes	
				March		Water harvesting structures and Practices; Construction, architecture and design - use of natural environment-friendly designs and materials; Agriculture including domestication of plants and animals. Public HeaIth: Nutrition, Hygiene,Physical and MentaI HeaIth,	40	40	Classroom Teaching and whatsapp group for sharing of notes	
				April		Vaccines and Antibiotics, Anti microbiaI resistance , Food Security: Green Revolution, White Revolution; IT Revolution, E-Governance; Clean Energy, Renewable Energy; Space Science and Exploration; Evolution, Ecology and Environment	40	40	Classroom Teaching and whatsapp group for sharing of notes	Test and Assignments were taken and discussed

	B.Sc.(H) Chemistry	Core paper: Organometallicchemistry and bioinorganic chemistry	VI	None	March	Metal ions present in biological systems, Classification of elements according to their actions in biological systems, Geochemical effects on the distribution of elements.sodium/ potassium pump, carbonic anhydrase,	40	40	Classroom Teaching and whatsapp group for sharing of notes	
					April	Carboxypeptidase, Iron and its applications in biological systems, Hb, Mb, storage and transfer of iron Excess and deficiency of some trace metals, toxicity of metal ions (Hg, Pb, Cd, and As), reasons for toxicity	40	40	Classroom Teaching and whatsapp group for sharing of notes	Test was taken
					May	Use of chelating agents in medicines, Cisplatin as an anticancer drug Discussion of previous year question papers	20	20	Classroom Teaching and whatsapp group for sharing of notes	Discussed class test and Previous year papers

Teaching Plan for The Academic Year: 2023-2024 (Even Semester)										
Faculty Name	**Course Name**	**Paper Name**	**Semester**	**Section**	**Month (s)**	**Topics/Units**	**Total Course (%)**	**Course Completed (%)**	**ICT Tools Used**	**Any Remarks**
Dr. Richa Arora	B.Sc (H) Chemistry	Applications of Computers in Chemistry	VI	None	January	Basics of computer, number system, memory, languages	20	20	Google Classroom for sharing notes	-
					February	Introduction of BASIC language, its syntax, commands, programs related to matrices	20	20	Google Classroom for sharing notes	-
					March	Numerical methods for finding roots of an equation, integration, best fit curve	30	30	Google Classroom for sharing notes	-
					April	Graphics, string functions	25	25	Google Classroom for sharing notes	Test and powerpoint presentations were taken
					May	Discussion of previous year papers	5	5	Google Classroom for sharing notes	Test and powerpoint presentations were taken

Teaching Plan for Academic Year 2023-2024 (Even Semester)

Faculty Name	Course Name	Paper Name	Sem	Month	Topic	Course Completed	Any Remarks
Dr.Rangnath Ravi	B.Sc Physical Science and Life Science	IT Skills for Chemists (SEC)	VI	January	(UNIT -1) Fundamentals, mathematical functions, polynomial expressions, logarithms, the exponential function, units of a measurement, interconversion of units, constants and variables, equation of a straight line, plotting graphs. Uncertainty in experimental techniques: Displaying uncertainties, measurements in chemistry, decimal places, significant figures, combining quantities. Uncertainty in measurement: types of uncertainties, combining uncertainties. Statistical treatment. Mean, standard deviation, relative error. Data reduction and the propagation of errors. Graphical and numerical data reduction. Numerical curve fitting: the method of least squares (regression). Algebraic operations on real scalar variables. Roots of quadratic equations analytically and iteratively. Numerical methods of finding roots).	25%	-
				Februar y	(UNIT-1) Differential calculus: The tangent line and the derivative of a function, numerical differentiation (e.g., change in pressure for small change in volume of a	20%	

		van der Waals gas, potentiometric titrations). Numerical integration (Trapezoidal and Simpson's rule, e.g. entropy/enthalpy change from heat capacity data). (UNIT-2) Introductory writing activities: Introduction to word processor and structure drawing (ChemSketch) software. Incorporating chemical structures, chemical equations, expressions from chemistry (e.g. Maxwell-Boltzmann distribution law, Bragg's law, van der Waals equation, etc.) into word processing documents.		
	March	(UNIT-3) Handling numeric data: Spreadsheet software (Excel/ LibreOffice Calc), creating a spreadsheet, entering and formatting information, basic functions and formulae, creating charts, tables and graphs Incorporating tables and graphs into word processing documents. Simple calculations, plotting graphs using a spreadsheet (Planck's distribution law, radial distribution curves for hydrogenic orbitals, gas kinetic theory- Maxwell-Boltzmann distribution curves as function of temperature and molecular weight), spectral data, pressure-volume curves of van der Waals gas (van der Waals isotherms), data from phase equilibria studies.	20%	

		Graphical solution of equations		
	April	(UNIT-4) Numeric modelling: Simulation of pH metric titration curves. Excel functions LINEST and Least Squares. Numerical curve fitting, linear regression (rate constants from concentration- time data, molar extinction coefficients from absorbance data), numerical differentiation (e.g. handling data from potentiometric and pH metric titrations, pKa of weak acid), integration (e.g. entropy/enthalpy change from heat capacity data)	20%	
	MAY	(UNIT-5) Statistical analysis: Gaussian distribution and Errors in measurements and their effect on data sets. Descriptive statistics using Excel. Statistical significance testing: The t test. The F test. Presentation graphics. **Previous Year Question Papers**	15%	

Rangnath Rai

Teaching Plan for the Academic Year: 2023-2024 (Even Semester)										
Faculty Name	Course Name	Paper Name	Sem	Sec	Months	Topic/Units	Total Course (%)	Course Completed (%)	ICT Tools Used	Any Remarks
Dr Reeta	B.Sc. (Life Science)	DSC: Chemistry of Carboxylic Acids & their Derivatives, Amines and Hetero-cycles	IV	A	February	**Unit :** Carboxylic Acids and their Derivatives (aliphatic and aromatic)	25	25	Class room Teaching	
					March	**Unit :** Carboxylic Acids and their Derivatives (aliphatic and aromatic), **Unit :** Amines (aliphatic & aromatic) and Diazonium Salts	35	35	Class room Teaching	
					April	**Unit :** Heterocyclic Compounds	35	35	Class room Teaching	Test and Assignments were taken
					May	**Advanced Topics and Review :** Review all the syllabus previous years question papers	5	5	Class room Teaching	Discussed class test, Assignment and Previous year papers
	B.Sc.(H)	DSC: Carbohydrates, Lipids and Heterocyclic Compounds	IV	None	February	**Unit :** Carbohydrates & Lipids	25	25	Class room Teaching	
					March	**Unit :** Carbohydrates & Lipids **Unit :** Heterocyclic Compounds	35	35	Class room Teaching	
					April	Heterocyclic Compounds	35	35	Class room Teaching	Test and Assignments were taken
					May	**Advanced Topics and Review :**	5	5	Class room	Discussed class

						Review all the syllabus previous years question papers			Teaching	test, Assignment and Previous year papers
		VAC: Science and Society	IV	A	February	**Unit :** Science and Technology- from Ancient to Modern Times	25	25	Class room Teaching	
					March	**Unit :** Science and Technology- from Ancient to Modern Times **Unit :** Scientific Principles, and Concepts in Daily Life	35	35	Class room Teaching	
					April	**Unit :** Scientific Principles, and Concepts in Daily Life	35	35	Class room Teaching	Test and Assignments were taken
					May	**Advanced Topics and Review :** Review all the syllabus previous years question papers	5	5	Class room Teaching	Discussed class test, Assignment and Previous year papers

Teaching plan for the academic year: 2023-2024(Even semester)										
Faculty Name	Course Name	Paper Name	seme ster	section	Months	Topic/Units	Total Course (%)	Course Completed (%)	ICT Tools Used	Any Remarks
Ms. Tamanna	B.Sc.(P) Life Science	Organometallic Chemistry, Bioinorganic Chemistry, Polyhydrocarbons & UV-IR Spectroscopy	VI	B	February	Definition and classification of organometallic compounds based on metal-carbon bonds	25	25	Classroo m Teaching	
					March	Structure and bonding of methyl lithium, Zeise's salt, physical properties of ferrocene, 18-electron rule	35	35	Classroo m Teaching	
					April	Preparation, structure, bonding of mononuclear and polynuclear carbonyls, π-acceptor behavior of CO MO diagram of CO, synergetic effect, use of IR data for back bonding,	35	35	Classroo m Teaching	Assignm ents was given and discusse d it.
					May	Review of previous years exam questions	5	5	Classroo m Teaching	
	B.Sc.(P) Life Science	DSE Biomolecules-I	IV	A+B	February	**Unit 1: Chemistry of Carbohydrates** Classification of carbohydrates, reducing and non-reducing sugars, biological functions, general properties, reactions of glucose and fructose Open chain structure, epimers, mutarotation, anomers, reactions of monosaccharides, determination of glucose configuration (Fischer proof), cyclic structure of glucose and fructose	25	25	Classroo m Teaching	
					March	cyclic structure of glucose and fructose **Unit 2: Nucleosides, Nucleotides, and Nucleic Acids** Components and structure of nucleic acids, Watson-Crick model of DNA	30	30	Classroo m Teaching	

					April	RNA types, genetic code, biological roles of DNA/RNA **Unit 3: Lipids** Introduction to oils and fats, saponification value, acid value, classification of lipids	30	30	Classroom Teaching	Test and Assignments were taken
					May	Biological importance, lipid membrane, biochemical functions of steroid hormones	15	15	Classroom Teaching	Discussed class test, Assignment and Previous year papers
	B.Sc.(H)	GE Coordination And Organometallic Compounds	IV	None	February	**Unit : Organometallic Compounds** Definition, classification, nature of metal-carbon bonds, structure and properties of ferrocene, 18-electron rule, π-acceptor behavior of CO, IR data for back bonding	35	35	Classroom Teaching	
					March	**Unit : Coordination Chemistry** Types of ligands, denticity, chelate concept, IUPAC nomenclature of coordination compounds, monodentate and bidentate ligands	25	25	Classroom Teaching	
					April	**Unit : Bonding in Coordination Compounds** Valence Bond Theory (VBT), Crystal Field Theory (CFT), spectrochemical series, Jahn-Teller distortion, square planar coordination	30	30	Classroom Teaching	Test and Assignments were taken
					May	**Advanced Topics and Review** Review and reinforce key concepts, applications of VBT and CFT, end-of-course assessment and presentations	10	10	Classroom Teaching	Discussed class test, Assignment and Previous year papers

	B.Sc.(H)	GE Chemical Kinetics And Photochemistry	II	None	February	**Introduction to Chemical Kinetics** Concept of reaction rates, effect of temperature, pressure, and catalysts Order and molecularity of reactions	25	25	Classroom Teaching	
					March	Derivation of rate equations for zero, first, and second order reactions; half-life of a reaction	35	35	Classroom Teaching	
					April	**Kinetics of Complex Reactions** Opposing, parallel, and consecutive reactions; integrated rate expressions for complex reactions Activation energy and Arrhenius equation; Theories of reaction rates: Collision theory and activated complex theory	35	35	Classroom Teaching	Test and Assignments were taken
					May	Review of previous year	5	5	Classroom Teaching	Discussed class test, Assignment and Previous year papers