

I - Academic PlannerTeacher's Name: **Dr. Jai Prakash Chaudhary**, Department: Chemistry**A - Teaching Plan (2021-2022, Semester: Odd)**

S. No.	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1	32177901	B.Sc.(H) Chemistry, 3 rd year (Sem-V): Novel Inorganic Solids (Theory)	DSE-1	Unit-1: Basic Introduction to Solid state chemistry, Synthesis of Inorganic Solids: Conventional heat and beat method, Co-precipitation method, Sol-gel method, Hydrothermal method, Chemical vapor deposition (CVD), Ion-exchange and Intercalation method. Assignment	26/07/2021	17/08/2021
				Unit-3:Cationic, anionic and mixed solid electrolytes and their applications. Inorganic pigments – coloured, white and black pigments. One-dimensional metals, molecular magnets, inorganic liquid crystals, Solid oxide fuel cell.	23/08/2021	20/09/2021
				Unit-5: Composite materials: Introduction, limitations of conventional engineering materials, role of matrix in composites, classification, matrix materials, reinforcements, metal-matrix composites, polymer-matrix composites, fibre-reinforced composites, bio-nanocomposites, environmental effects on composites, applications of composites.	20/09/2021	27/09/2021

				Unit-2: Characterisation techniques of inorganic solids: Powder X-ray Diffraction, UV-visible spectroscopy, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Fourier-Transform Infrared (FTIR) spectroscopy, Brunauer–Emmett–Teller (BET) surface area analyser, Dynamic Light Scattering (DLS), Introduction to the Conducting polymers	28/09/2021	26/10/2021
				Synthesis, properties and applications of various conducting polymers	27/10/2021	08/11/2021
				Ceramic & Refractory materials, Question for practice and assignment	08/11/2021	15/11/2021
2	32177901	B.Sc.(H) Chemistry, 3 rd year (Sem-V): Novel Inorganic Solids (Practical)	DSE-1	Synthesis of AgNPs through chemical reduction and green route, assignment	26/07/2021	09/08/2021
				Synthesis of Polyaniline	16/08/2021	16/08/2021
				Synthesis of Inorganic pigments, Intercalation of Hydrogen in WO ₃ , Synthesis of ZnO and Cu-doped ZnO nanoparticles,	26/08/2021	27/09/2021
				Synthesis of metal sulfides nanoparticles, Preparation of Zeolite A and removal of Ca & Mg ions from water	04.10.2021	18.10.2021
				Assignment/ Mock Test & Viva Preparation, final assignment	25/10/2021	08/11/2021
3	32173902	B.Sc.(H) CHEMISTRY, 2 nd year (Sem-III): Basic Analytical Chemistry (PRACTICAL)	SEC	Determination of DO of water sample, Paper chromatographic separation of Co ²⁺ & Ni ²⁺ , Assignment	21.08.2021	04.09.2021
				Determination of pH, acidity and alkalinity, Determination of caffeine and benzoic acid in soft drink, Spectrophotometric determination of iron in vitamin tablet	11.09.2021	25.09.2021

				Complexometric titrations, Determination of pH of soil, Determination of ion exchange capacity of cation/anion exchange resin	09.10.2021	30.10.2021
				Estimation of macro-nutrients by flame photometer, Analysis of gasoline, Assignment/ Mock Test & Viva Preparation	06.11.2021	12.11.2021
4	32171101	B.Sc.(H) Chemistry, 1 st year (Sem-I): INORGANIC CHEMISTRY-I (THEORY)	CORE	Bohr's theory, its limitations and atomic spectrum of hydrogen atom. Wave mechanics: de Broglie equation, Heisenberg's Uncertainty Principle and its significance. Schrödinger's wave equation, significance of ψ and ψ^2 . Quantum mechanical treatment of H- atom, Quantum numbers and their significance. Normalised and orthogonal wave functions. Sign of wave functions. Radial and angular wave functions for hydrogen atom. Radial and angular distribution curves. Shapes of <i>s</i> , <i>p</i> , and <i>d</i> orbitals, Relative energies of orbitals	23/11/2021	29/12/2021
				Pauli's Exclusion Principle, Hund's rule of maximum spin multiplicity, Aufbau principle and its limitations, Slaters rule. Test, Introduction of periodic Table	04/01/2022	25/01/2022

				Periodic properties, Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table, Atomic and ionic radii, Ionization enthalpy, Successive ionization enthalpies and factors affecting ionization enthalpy and trends in groups and periods. Electron gain enthalpy and trends in groups and periods. (e) Electronegativity, Pauling's/ Allred Rochow's scales. Variation of electronegativity with bond order, partial charge, hybridization, group electronegativity.	02/02/2022	09/03/2022
5	32171101	B.Sc.(H) Chemistry, 1 st year (Sem-I): INORGANIC CHEMISTRY-I (PRACTICAL)	CORE	Titrimetric Analysis, Acid Base Titration	26/11/2021	07/01/2022
				Oxidation- reduction Titrimetry	14/01/2022	18/02/2022
				Assignment/ Mock Test & Viva Preparation	18/02/2022	11/03/2022

FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic						
Type / Nature (FDP/Webinar/ Workshop etc.)						
Organizing In-charge						
Details regarding invited Resource Person						
Nature of Participation (e.g. Invited Speaker, Participant etc.)						
Date/s		Timing/s		Mode		

Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
DSE-1	B.Sc.(H) Chemistry, III rd year (Sem-V): NOVEL INORGANIC SOLIDS (THEORY)	32177901	Synthesis of Inorganic Solids, Solid electrolytes & Inorganic pigments, One dimensional metal, molecular magnets, Inorganic liquid crystals. Characterization techniques	01.11.2021	Nov - 2021
CORE	B.Sc.(H) Chemistry, I st year (Sem-I): INORGANIC CHEMISTRY-I (THEORY)	32171101	Atomic structure & Periodicity of elements	08.02.2022	Feb-2022

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**

Organization of Department/College Society Meetings by Staff Advisor/Convener

Department/Society	Meeting Date	Purpose

College Functions

College Function	Function Date	Role to be played

For Departments

A. Department activities for students – Election/Freshers/Welcome/Farewell/Department Seminars/Society functions

Event	Date	Timing	Venue	Event In-charge / Supervisor
Department Election				
Fresher's Welcome				
Farewell				
Department Society functions				

Department Seminars				
Any Other ()				

B. Outstation Field Visit for Students

Project Name / Paper Name			
Destination		Travel Mode	
Departure Month		Return	
Faculty-in-Charge		Number of Students going	

C. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Department

Event Topic				
Type / Nature (FDP/Webinar/Workshop etc.)				
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S. No.	UPC	Course Name	Paper Name	Core/ AEC C/ GE/ SEC	Topic/Unit	Start Date	End Date
1	42174401	B.Sc.(P) Analytical Chemistr, 1st year	Separation Methods II (Theory)	Core	General Introduction of Chromatography, matrix materials, column packing, chromatogram, Van deemter Equation	04.01.2022	15.01.2022
					High performance liquid chromatography, Ion exchange chromatography,	15.01.2022	25.01.2022
					Affinity chromatography, Gel chromatography, Numerical problems, Ion exchange capacity, Adsorption Chromatography and Partition Chromatography, numerical practices, class test	29.01.2022	05.03.2022
					Introduction to electrophoretic techniques, Paper, Cellulose acetate electrophoresis, Agarose gel electrophoresis, 2D Gel Electrophoresis, SDS-PAGE, Support Media, Gradient Gel,	05.03.2022	15.03.2022
					Isoelectric Focussing, Capillary Electrophoresis and Recovery of proteins, Blotting Techniques	22.03.2022	29.03.2022
					Radioisotopes techniques, Biological importance adsorption isotherms, Numerical problems, Class Test	02.04.2022	25.04.2022

2	32173911	B.Sc.(P) Analytical Chemistry, II year	Pesticide Chemistry (Theory)	SEC	General introduction to pesticides, Benefits & adverse effects, Classification of pesticides, changing concepts of pesticides, Structure & activity relationship	07/01/2022	18/02/2022
					Structure & activity relationship with respect to acetylcholine, Carbamates-Carbaryl, Carbofuron, Assignment	25/02/2022	28/03/2022
					Pesticide Formulations including solid and liquid, Test, Control Release of Pesticides	18.03.2022	22.04.2022
3	42171204	B.Sc.(P) Analytical Chemistr, 1st year	(Separation Methods-I) (Theory)	Core	Introduction to Dialysis and Filtration, filter medium, Dialysis & types of dialysis	07.03.2022	22.04.2022
					Electrodialysis, polycarbonates, Nitrocellulose, fiberglass, General laboratory methods	02.06.2022	30.06.2022
					Theory and practice; Introduction of chromatography, classification, column packing, elution, retention time, retention volume, separation factor, Column efficiency, resolution, sample preparation	07.07.2022	21.07.2022
6	42177926	BSc (P) Life Science, III year	Organometal lic, Bio- Inorganic Chemistry, Poly Nuclear Hydrocarbon s & UV, IR (Practical)	DSE	Qualitative organic analysis of organic compounds possessing monofunctional groups (-COOH, Alcoholic, aldehydic and ketonic group) and preparation of one derivative, assignments	03.01.2022	19.04.2022
7	32171601	B.Sc.(H) Chemistry, III year	Inorganic Chemistry- IV (Practical)	COR E	Analysis of mixtures containing 3 cations & 3 anions, Assignment	06.01.2022	21.04.2022

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CBCS	B.Sc.(P) Analytical Chemistry 2 nd year (THEORY)	42174401	Separation Methods-II	09.04.2022	April 2022
CBCS	B.Sc.(P) Analytical Chemistry 2 nd year (Theory)	32173911	Pesticide Chemistry	19.04.2022	April 2022
CBCS	B.Sc.(P) Analytical Chemistry 1 st year (Theory)	42171204	Separation Methods-I	17.07.2022	July 2022

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Farewell				
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Department Seminars				
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