

Syllabus Module

Department of Chemistry Khatra Adibasi Mahavidyalaya

Session 2022-2023

Faculty Name	1st Semester	3 rd Semester	5 th Semester
	Core C1A - T1 Inorganic	Core C6 - T6 - Inorganic	Core C11 - T11 - Inorganic
	Chemistry	Chemistry II	Chemistry IV
	Atomic Structure	Chemical Bonding-I	Coordination Chemistry-II
D., C	Chemical Periodicity	Chemical Bonding-II	C C11 D11 I
Dr. Swarup	Acids and bases	Radioactivity	Chamistry IV Lab
Kumar Maji	Redox reactions	Core C6 - P6 - Inorganic	Chemistry IV Lab Gravimetry
	Core C1A - P1 Inorganic	Chemistry II Lab	Gravinicary
	Chemistry Lab	Iodo / Iodimetric Titrations	Total Lectures (C11): 60
	Chemistry Lab	Estimation of metal content	Total Lectures (C11): 00
	Total Lectures (C1A): 40	in some selective samples	
	10th Dectares (C111): 40	in some selective samples	
		Total Lectures (C6): 80	
	Core C2 - T2 - Physical	Core C5 - T5 - Physical	DSE1 - T1 – Advanced
	Chemistry I	Chemistry II	Physical Chemistry
	Kinetic Theory and Gaseous	Transport processes	Crystal Structure
	state	Applications of	Statistical Thermodynamics
	Chemical Thermodynamics	Thermodynamics – I	Special selected topics
	Chemical kinetics	Foundation of Quantum	special selected topics
		Mechanics	SEC3 - T3 - IT Skills for
	Core C2 - P2 - Physical		Chemists
	Chemistry I Lab	Core C1C – T3 Physical	Mathematics
Dr. Ramakanta	<i>.</i>	Chemistry	Computer programming
Mondal	Total Lectures (C2): 80	Chemical Energetics	Hands On Practical
	` ,	Chemical Equilibrium	
		Conductance	
			DSE1 - P1 – Advanced
		Core C5 - P5 - Physical	Physical Chemistry Lab
		Chemistry II Lab	Computer Programming
		,	based on numerical methods
		Core C1C – P3 Physical	
		Chemistry Lab	Total Lectures (SEC3): 40
		Thermochemistry	Total Lectures (DSE1): 80
		Conductance	
		Total Lectures (C1C): 40	
		Total Lectures (C5): 80	

		SEC T1 – Basic	Core C11 - T11 - Inorganic
		Analytical Chemistry	Chemistry IV
		Introduction	1
			Chemistry of d- and f- block
		Analysis of soil	elementsTransition Elements
		Analysis of water	Lanthanoids and Actinoids
		Analysis of food products	
		Chromatography	DSE2 - T2 - Green
		Ion-exchange	Chemistry
		Analysis of cosmetics	Introduction to Green
Sri Soumen		Suggested Applications	Chemistry
Rakshit		Suggested Instrumental	Principles of Green
		demonstrations	Chemistry and Designing a
			Chemical synthesis
		Total Lectures (SEC1):	Examples of Green
		40	<u> </u>
		40	Synthesis/ Reactions and
			some real world cases
			Future Trends in Green
			Chemistry
			Core C11 - P11 - Inorganic
			Chemistry IV Lab
			Chromatography of metal
			ions
			DSE2 - P2 - Green
			Chemistry Lab
			Safer starting materials
			Using renewable resources
			Avoiding waste
			Use of enzymes as catalysts
			Alternative Green solvents
			Alternative sources of
			energy
			Total Lectures (C11): 20
			Total Lectures (DSE2): 80
	Core C1 - T1 Organic	Core C7 - T7 - Organic	Core C12 - T12 - Organic
	Chemistry I	Chemistry III	Chemistry V
	Bonding and Physical	Chemistry of alkenes and	Carbocycles and
	Properties	alkynes	Heterocycles
	General Treatment of	Aromatic Substitution	Cyclic Stereochemistry
	Reaction Mechanism I	Carbonyl and Related	Pericyclic reactions
	Stereochemistry-I	Compounds	Carbohydrates
		Organometallics	Biomolecules
	Core C1A - T1 Organic	Organometames	Diomoiceures
	Chemistry	Core C1C - T3 Organic	Core C12 - P12 - Organic
	Fundamentals of Organic	Chemistry II	Chemistry V Lab
		· ·	Chromatographic
	Chemistry	Aromatic Hydrocarbons	
	Stereochemistry Needle and it is Seek at item in a	Organometallic	Separations
	Nucleophilic Substitution	Compounds	Spectroscopic Analysis of
	and Elimination Reactions	Aryl Halides	Organic Compounds
	Aliphatic Hydrocarbons	Alcohols, Phenols and	
Sri Saroj	Alkanes	Ethers	Total Lectures (C12): 80
Modak	Alkenes	Carbonyl Compounds	
	Alkynes		
	Reactions		

	Core C7 - P7 - Organic
Core C1 - P1 – Organic	Chemistry III Lab
Chemistry I Lab	Qualitative Analysis of
Separation	Single Solid Organic
Determination of boiling point	Compounds
Identification of a Pure	Core C1C – P3 Organic
Organic Compound	Chemistry Lab
	Identification of a pure
Core C1A - P1 Organic	organic compound
Chemistry Lab	Total Lectures (C1C): 40
Qualitative Analysis of	Total Lectures (C7): 80
Single Solid Organic	
Compound(s)	
Total Lectures (C1A): 40	
Total Lectures (C1): 80	

Tentative date of internal assessment: Mid of November 2022

	2 nd Semester	4 th Semester	6 th Semester
Dr. Swarup	Core C3 - T3 - Inorganic	Core C9 - T9 - Inorganic	Core C13 - T13 - Inorganic
Kumar Maji	Chemistry II	Chemistry III	Chemistry V
	Extra nuclear Structure of	General Principles of	Bioinorganic Chemistry
	atom	Metallurgy	Organometallic Chemistry
	Chemical periodicity	Chemistry of s and p	Catalysis by Organometallic
		Block Elements	Compounds
	Core C1B – T2 Inorganic	Inorganic Polymers	Reaction Kinetics and
	Chemistry		Mechanism
	Chemical Bonding and	Core C1D – T4 Inorganic	
	Molecular Structure	Chemistry	Core C13 - P13 - Inorganic
	Comparative study of p-	Transition Elements	Chemistry V Lab
	block elements	Coordination Chemistry	Qualitative semimicro
		Crystal Field Theory	analysis
	Core C3 - P3 - Inorganic	Analytical and Industrial	Total Lectures (C13): 80
	Chemistry II Lab	Chemistry	
	Acid and Base Titrations		
		Core C9 - P9 - Inorganic	
	Core C1B – P2 Inorganic	Chemistry III Lab	
	Chemistry Lab	Inorganic preparations	
	Qualitative semi-micro		
	analysis of mixtures	Core C1D – P4 Inorganic	
	containing three radicals	Chemistry Lab	
	Total Lectures (C3): 50	Total Lectures (C9): 50	
	Total Lectures (C1B): 40	Total Lectures (C1D): 40	
	Core C1B – T2 Physical	Core C8 - T8 - Physical	Core C14 - T14 - Physical
	Chemistry	Chemistry III	Chemistry IV
	Kinetic Theory of Gases and	Application of	Molecular Spectroscopy
	Real gases	Thermodynamics – II	Photochemistry
	Liquids	Electrical Properties of	Surface phenomenon
	Solids	molecules	
	Chemical Kinetics	Quantum Chemistry	DSE4 - T4 – Polymer
			Chemistry
	Core C1B – P2 Physical	Core C8 - P8 - Physical	Introduction and history of
	Chemistry Lab	Chemistry III Lab	polymeric materials
		Total Lectures (C8): 80	

Surface tension measurement Viscosity measurement Kinetics Study Dr. Ramakanta Mondal Total Lectures (C1B): 40 Total Lectures (C1B): 40 Total Lectures (C1B): 40 Total Lectures (C1B): 40 Determination of molec weight of polymers Glass transition temper (Tg) and determination Polymer Solution Properties of Polymer Core C14 - P14 - Phys Chemistry IV Lab DSE4 - P4 - Polymer Chemistry IV Lab Polymer Synthesis Polymer characterization Polymer analysis Total Lectures (C14): Total Lectures (DSE4) Sri Soumen Rakshit Acid-Base reactions Redox Reactions and precipitation reactions Core C9 - P9 - Inorganic Chemistry-I precipitation reactions Core C9 - P9 - Inorganic Thermal methods of anal	eular ature of Tg ical 80): 80 al
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Sri Soumen Rakshit Core C3 - T3 - Inorganic Rakshit Chemistry II Acid-Base reactions Redox Reactions and precipitation reactions Core C9 - P9 - Inorganic Core C9 - T9 - Inorganic Chemistry II Noble Gases Coordination Chemistry-I Core C9 - P9 - Inorganic Core C9 - P9 - Inorganic Total Lectures (C14): Total Lectures (DSE4) Methods in Chemistry aspects of analysis Optical methods of analysis Thermal methods of analysis): 80 al
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Core C9 - P9 - Inorganic Thermal methods of an	lveie
Core C3 - P3 - Inorganic Chemistry III Lab Electroanalytical method	•
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Chemistry II Lab Complexometric titration Separation techniques	
Oxidation-Reduction	,
Titrations Total Lectures (C9): 30 DSE3 - P3 – Analytica	
Total Lectures (C3): 30 Methods in Chemistry	
Separation Techniques	_
Chromatography	
Solvent Extractions	
Spectrophotometry	
Total Lectures (DSE3)	
Core C4 - T4 - Organic Core C10 - T10 - Organic SEC4 - T4 - Analytica	ıl
Chemistry II Chemistry IV Clinical Biochemistry	
Stereochemistry II Nitrogen compounds Carbohydrates	
General Treatment of Rearrangements Proteins	
Reaction Mechanism II The Logic of Organic Enzymes	
Substitution and Elimination Synthesis Lipids	
Reactions Organic Spectroscopy Structure of DNA (Wat	son-
Crick model) and RNA	
Core C4 - P4 - Organic SEC2 - T2 - Biochemistry of disease	
Chemistry II Lab Pharmaceuticals Hands On Practical	,
Organic Preparations Chemistry Drugg & Pharmacouticals Total Lactures (SECA)	
Drugs & Pharmaceuticals Total Lectures (SEC4)	. 40
Total Lectures (C4): 80 Fermentation): 40
): 40
Sri Saroj Hands On Practical Modak): 40

Core C1D – T4 Organic
Chemistry
Carboxylic Acids and
Their Derivatives
Amines and Diazonium
Salts
Amino Acids and
Carbohydrates
Core C10 - P10 - Organic
Chemistry IV Lab
Core C1D – P4 Organic
Chemistry Lab
Total Lectures (C10): 80
Total Lectures (C1D): 40
Total Lectures (SEC2):
40

Tentative date of internal assessment: Mid of May 2023