

## COURSE AT A GLANCE (NEP-U.G.)

SUBJECT: CHEMISTRY

ACADEMIC SESSION: 2025-28

### CORE-I COURSE

Course Number	Semester	Course Title	Type of Paper P-Practical NP-Non-practical	Credit Hour	Maximum Weightage of Marks
Paper-I	I	Atomic Structure, Periodicity of elements and Chemical Bonding	P	4	100
Paper-II		Fundamental Organic Chemistry	P	4	100
Paper-III	II	States of matter, and Ionic equilibrium	P	4	100
Paper-IV		Chemical thermodynamics, equilibrium, and Colligative property	P	4	100
Paper-V	III	Acids and Bases, Metallurgy, Chemistry of main group elements	P	4	100
Paper-VI		Chemistry of halogen, oxygen and sulphur containing organic compounds	P	4	100
Paper-VII		Phase equilibrium, Chemical dynamics, catalysis and surface chemistry	P	4	100
Paper-VIII	IV	Coordination Chemistry, Chemistry of d- and f-block elements, Inorganic Reaction Mechanism and electron transfer reactions	P	4	100
Paper-IX		Natural Products, Heterocyclic Compounds, Nitrogen containing compounds and Polynuclear Hydrocarbons	P	4	100
Paper-X		Conductance, electrochemistry, electrical properties of atoms and molecules	P	4	100
Paper-XI	V	Organic Spectroscopy	P	4	100
Paper-XII		Basic quantum chemistry, Molecular & electronic spectroscopy, and photochemistry	P	4	100
Paper-XIII		Chemistry of Organometallic Compounds	P	4	100
Paper-XIV	VI	Chemistry of Biomolecules	P	4	100
Paper-XV		Solid and porous materials, and magnetochemistry and power cells	P	4	100
Paper-XVI	VII	Analytical Methods of Chemistry	NP	4	100
Paper-XVII		Polymer Chemistry	P	4	100
Paper-XVIII		Green Chemistry	P	4	100
Paper-XIX		Oxidation, Reduction, Reagents, Rearrangements and Name Reactions	NP	4	100
Paper-XX	VIII	Quantum chemistry & Statistical Thermodynamics	NP	4	100
Paper-XXI		Chemical group theory, electronic spectra of metal complexes, and nuclear chemistry	P	4	100
Paper-XXII		Pericyclic reactions, Photochemistry and Retrosynthesis	P	4	100
Paper-XXIII		Research Methodology for Chemistry	NP	4	100

### CORE-II/CORE-III COURSE

Course Number	Semester Core-II/ Core-III	Course Title	Type of Paper P-Practical NP-Non-practical	Credit Hour	Maximum Weightage of Marks
Paper-I	I/II	Atomic Structure, Periodicity of elements and Chemical Bonding	P	4	100
Paper-II	III/IV	Fundamental Organic Chemistry	P	4	100
Paper-III	V/VI	States of matter, and Ionic equilibrium	P	4	100

Paper-IV	VII	Chemical thermodynamics, equilibrium, and Colligative property	P	4	100
Paper-V	VIII	Acids and Bases, Metallurgy, Chemistry of main group elements	P	4	100

## OTHER COURSES

### MULTIDISCIPLINARY COURSES (MDC) UNDER NEP-2020

Three courses to be chosen from **baskets of Multidisciplinary courses** for Semester-I/II/III with 3 credits each. Students are advised to choose one course/ Semester from the basket provided. Students are advised to opt for courses outside their discipline. No repetition of courses allowed.

(Ref: University Letter No-3177/Acd. – I, Dated: 15. 07. 2025 Letter No. 3993/Acd-I Dt: 02.09.2025)

#### SEMESTER: I

Course No.	Semester	Dept. to Teach	Course Title	Type of Paper <b>P</b> -Practical <b>NP</b> -Non-practical	Credit Hour	Maximum Weightage of Marks
Paper-I	Semester-I	Chemistry	Environmental Chemistry	<b>NP</b>	3	100
		Botany	Gardening and Vermicomposting	<b>NP</b>	3	100
		Economics	Economics in Everyday Life	<b>NP</b>	3	100
		History	History of Education in Modern India	<b>NP</b>	3	100
		Odia	Tulanatmak Sahitya	<b>NP</b>	3	100
		Pol. Sc.	Political Process in India	<b>NP</b>	3	100
		English	Ethical Literature	<b>NP</b>	3	100
		Commerce	Financial Literacy	<b>NP</b>	3	100
		Education	Educational Psychology	<b>NP</b>	3	100

#### SEMESTER: II

Course No.	Semester	Dept. to Teach	Course Title	Type of Paper <b>P</b> -Practical <b>NP</b> -Non-practical	Credit Hour	Maximum Weightage of Marks
Paper-II	Semester-II	Statistics	Survival Analysis and Biostatistics	<b>NP</b>	3	100
		Zoology	Apiculture	<b>NP</b>	3	100
		Education	Gender and Education	<b>NP</b>	3	100
		Geography/Geology	Climatology	<b>NP</b>	3	100
		Philosophy	Vedic Culture	<b>NP</b>	3	100
		Hindi	Vigyapan	<b>NP</b>	3	100

			Avadharana Aur Prayojanmulak Aayam			
		Home Science	Food Science and Processing	NP	3	100
		Commerce	Fundamentals of Entrepreneurship and E- Commerce	NP	3	100
		Economics	Demography	NP	3	100

### SEMESTER: III

Course No.	Semester	Dept. to Teach	Course Title	Type of Paper P- Practical NP-Non-practical	Credit Hour	Maximum Weightage of Marks
Paper-III	Semester-III	Mathematics/Computer Science	Programming in C++	NP	3	100
		Physics	Introduction to Spectroscopy	NP	3	100
		History	Indian Knowledge System	NP	3	100
		Pol. Sc.	Human Rights	NP	3	100
		Sociology	Environmental Issues and Challenges	NP	3	100
		Commerce	Entrepreneurship Development and Start-up	NP	3	100
		Psychology	Health psychology	NP	3	100
		Sanskrit	Philosophy of Bhagavad Gita	NP	3	100
		Botany	Herbarium Preparation	NP	3	100

### ABILITY ENHANCEMENT COURSE(AEC) UNDER NEP-2020

Sl. No.	Semester	Course	Credit hour (CH)	Full Mark
Paper-I	I	Odia/Hindi/Sanskrit/Urdu	4	100
Paper-II	II	English	4	100

### SKILL ENHANCEMENT COURSES (SEC) UNDER NEP-2020

Three courses to be chosen from the **baskets of SEC** for Semester-II/V/VI respectively with 3 credits each. Student can opt any one of SEC courses in a particular semester from the basket without repetition.

(Ref: University Letter No-3177/Acd. – I, Dated: 15. 07. 2025) **NB: All courses are non-practical (NP) papers.**

Sl. No.	Semester	Course title	Credit hour (CH)	Marks
Paper-I	II	Personality Development Or Election studies and public opinion Or Quantitative and Logical Thinking Or Analytical Thinking and Logical Reasoning Or Renewable Energy & Energy Harvesting Or Vermicomposting	3	100
Paper-II	V	Yoga in Everyday Life Or Basics of Museum and Achieves Or Working with Communities Or Fundamentals of data science and data management Or Quantitative and Logical Thinking Or Programming With Mathematica	3	100
Paper-III	VI	Life Skill Education Or Quantitative and Logical Thinking Or Income Tax E-return Filing Or Organic Farming Or Biofertilizer Or Type Setting in Latex	3	100

### VALUE AIDED COURSES (VAC) UNDER NEP – 2020

(Ref: University Letter No-3177/Acd. – I, Dated: 15. 07. 2025)

Sl No	Semester	Paper	Course title	Credit	Marks
Paper-I	I	PAPER I	Environmental Studies and Disaster Management	3	100
Paper-I	III	PAPER II	Ethics & Values	3	100
Paper-I	V	PAPER III	Understanding Odisha	3	100
Paper-I	VI	PAPER IV	Creative Writing	3	100