

DEPARTMENT OF CHEMISTRY
BSc PROGRAMME WITH HONOURS/MAJOR IN CHEMISTRY
(CBCS)
COURSE OUTCOME

SI No.	Semester	Course Name and Code	Outcome and/or Objectives
1	1 st SEM Hons.	CHEMISTRY-C-101 (Inorganic Chemistry)	<p>To develop the basic knowledge of chemistry in relation to atomic Structure, bonding, periodicity etc.</p> <p>Expected Learner Outcome: Students will gain an understanding of</p> <ul style="list-style-type: none"> i. Sign of wave function, counter boundary and probability diagrams etc. ii. Variations of orbital energy with atomic number. iii. Properties of elements, atomic radii, ionic radii, size effect of ionic bond, solvation energy, covalent character of ionic bond, redox equations, principle involved in volumetric analysis etc.

2	1 st SEM Hons	CHEMISTRY-C-102 (Physical Chemistry)	<p>Objective of the Course: To emphasize on different states of matter & their mechanical treatment.</p> <p>Expected Learner Outcome: Students will gain an understanding of</p> <ul style="list-style-type: none"> i. Kinetic molecular model of a gas, behaviour of real gases etc ii. Effect of addition of various solute on surface tension and viscosity. Cleansing action of detergents. iii. Nature of solid state, elementary idea of symmetry. iv. Idea of solubility and solubility product of sparingly soluble salts.
3	3 rd SEM Major	Paper: MM 301 Inorganic Chemistry-I	<p>Objective: To understand Coordination Chemistry, mechanism and the importance of d-and f block elements.</p>

4	3 rd SEM Major	Paper: MM 303 Organic Chemistry-I	Objective: Importance of Halogenated Hydrocarbons, Chemistry of Carbonyls along-with sulphur containing compound are discussed in this course.
5	3 rd SEM NM	Paper: NM 301 Organic Chemistry-I	To understand Organic Chemistry in the light of different types of reaction – to go for the study of broad field of Organic Chemistry.
6	5 th SEM Major	Paper: MM 501 Physical Chemistry II	This course is designed to impart the ideas of kinetics, solution equilibrium and surface phenomena amongst the students.
7	5 th SEM Major	Paper: MM 503 Inorganic Chemistry II	The objective of the paper is to give knowledge on organometallic compounds, Clusters and organic reagents in inorganic analysis.
8	5 th SEM Major	Paper: MM 505 Organic Chemistry-III	To acquire knowledge in different types of organic reaction and to understand Biochemistry.

9	5 th SEM Major	Paper: MM 507 Symmetry and Quantum Chemistry	The objective of the paper is to have knowledge on quantum mechanics with special reference to classical mechanics, symmetry and bonding.
10	5 th SEM NM	Paper: NM 501 Inorganic Chemistry-II + Physical Chemistry-II	In this course/paper, nuclear chemistry, preparative chemistry, Bio-Inorganic as well as the importance of electrochemistry, surface phenomena and photo chemical processes are dealt with.

2 nd SEM Hons	CHEMISTRY-C- 201 (Organic Chemistry)	<p>Objective of the Course: To develop preliminary knowledge in basic organic chemistry, Hydrocarbons, stereochemistry & conformational analysis.</p> <p>Expected Learner Outcome: Students will gain an understanding of ---</p> <ul style="list-style-type: none"> i. Knowledge of basic organic chemistry, definition, classification of stereoisomerism, optical activity, absolute and relative configuration etc. ii. Knowledge of elimination reaction, electrophilic and nucleophilic addition. iii. Relative stability of cyclic hydrocarbon, Bayer's strain theory etc.
-----------------------------	---	--

	2 nd SEM Hons	CHEMISTRY-C- 202 (Physical Chemistry)	<p>Objective of the Course: To develop a strong knowledge on chemical thermodynamics, Their mathematical expression & application.</p> <p>Expected Learner Outcome: Students will gain an understanding of</p> <ul style="list-style-type: none"> i. The application of mathematical tools to calculate thermodynamic properties ii. The concept of free energy change and spontaneity. iii. Thermodynamics derivation of relation between Gibbs free energy of reaction and reaction quotient. iv. Derive relation between the four colligative properties using chemical potential (Thermodynamics derivation)
13	4 th SEM Major	Paper: MM 401 Physical Chemistry-I	Electrochemistry is one of the topics that really revolutionized the world nowadays. This paper deals with this particular aspect.

14	4 th SEM Major	Paper: MM 403 Organic Chemistry-II	This paper deals with active methylene compounds, aliphatic and aromatic amines and heterocyclic compounds
15	4 th SEM NM	Paper: NM 401 Physical Chemistry-I	To understand Physical Chemistry in the form of Physical forces which govern Our surroundings.
16	6 th SEM Major	Paper: MM 601 Physical Chemistry III	To understand different topics like photochemistry, macromolecules, catalysis and Statistical thermodynamics.
17	6 th SEM Major	Paper: MM 603 Inorganic Chemistry III	To understand Bio inorganic Chemistry, Role of metal ion in biological system, Metal ion in medicine, material chemistry, supra molecular interaction, Solid state reactions. Nano materials, Chromatographic Methods, Industrial chemistry, Metal toxicology

18	6 th SEM Major	Paper: MM 605 Organic Chemistry IV	This paper highlights the concept of disconnection approach in organic chemistry as well as different analytical tools like UV, IR, NMR in organic chemistry. Importance of dyes, lipids, polymers are also dealt with.
19	6 th SEM Major	Paper: MM 607 Molecular Spectroscopy	This paper deals with the interaction of electromagnetic radiation with matter in Various forms.
20	6 th SEM NM	Paper: NM 601 Organic Chemistry- II	To understand the preparative Organic Chemistry as well as the importance of Organic Chemistry in life processes.

