Programme Specific Outcome: B.Sc. Honours (Chemistry) and Minor (under CCFUP, 2023)

The purpose of the undergraduate chemistry program is to provide the key knowledge base and laboratory resources to prepare students for careers as professionals in the field of chemistry.

Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries.

Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.

Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats.

Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.

Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.

Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.

Finally, they will be sufficiently trained to get employment in Govt. sector, non Govt. sector in chemical/ pharmaceutical industry and .other areas.

Course Outcome: B.Sc. Honours (Chemistry) & Minor

Course Code	Course Name	Course Outcome
CEMHMJ101	**MJ1T** **MJ1P** **Organic Chemistry**	Understanding about structure, bonding, stability, physical properties of organic molecules and reaction intermediates, MOT, aromaticity, and stereochemistry Learn the process to separate the components of binary solid mixture by using common laboratory reagents, determine the boiling point of organic liquids
CEMHMJ102	**MJ2T** **MJ2P** **Inorganic Chemistry**	Knowledge about structure of atoms, chemical periodicity, concept of acid and base and concept of redox and precipitation reactions Learn about various types of titration methods such as acid-base and redox titration
CEMSEC01	**SEC1P** **Chemistry of Cosmetics & Perfumes**	Understanding the basics of perfumes and perfume industry. Insight into the cosmetics and hair and nail care products. Understanding the cosmetics for the skin care products. Providing a deep insight into the chemistry of perfumery chemicals. Attaining a deep insight into the chemistry of cosmeceuticals. Providing a better knowledge of the characterization techniques for perfumes and cosmetics.
CEMSEC02	**SEC2P** **Medicinal & Pharmaceutical Chemistry**	Discuss & understand chemistry of active ingredient in turmeric, clove, tea/coffee etc. Importance and ingredients of different herbal and medicinal plants.
CEMMI01	**MI-1T** **MI-1P** **Atomic Structure, Acids and Bases, Redox Reactions, & States Of Matter.**	Conceptual idea about an atom, acid, base, redox reactions. Knowledge about kinetic theory of gas and real gas, Property of liquids and solids Practical knowledge in acid-base and redox titrations and determination of surface tension and viscosity of liquid
CEMMI02	**MI-2T** **MI-2P** **General Organic Chemistry, Aliphatic Hydrocarbons & Chemical Kinetics**	Conceptual idea about fundamental of organic chemistry, aliphatic hydrocarbon, stereochemistry and knowledge about reaction kinetics Practical knowledge about the Qualitative Analysis of Single Solid Organic Compound(s). Learn to carry out experiments related to chemical thermodynamics and kinetics

<u>Programme Specific Outcome: B.Sc. 3Yr UG Programme (Chemistry Multidisciplinary Studies) under CCFUP, 2023 & NEP, 2020</u>

The students pursuing this course would have to develop in depth understanding of various aspects chemistry.

Demonstrate an understanding of the fundamental principles, including scientific reasoning to solve problems, of organic chemistry, inorganic chemistry, analytical chemistry and physical chemistry.

To create foundation for research and development in Chemistry and to familiarize with current and recent developments in Chemistry.

To develop analytical abilities for independent thinking.

To help student's build-up a progressive and successful career in Chemistry.

Students will demonstrate research skills in chemistry, including proper laboratory notebook and record keeping skills, recognizing hazards, minimizing risks, and safe laboratory practices.

To enrich knowledge through programmes such as industrial visits, projects etc.

To train students in skills related to Chemistry for academic and industrial requirement.

Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats.

Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.

Finally, they will be sufficiently trained to get employment in Govt. sector, non Govt. sector in chemical/ pharmaceutical industry and .other areas.

Course Outcome: B.Sc. Honours (Chemistry Multidisciplinary Studies)

Course Code	Course Name	Course Outcome
CEMHMJ101 Disc.-A1	**MJ1T MJ1P Organic & Inorganic Chemistry**	Conceptual idea about an atom, solubility and redox reactions and fundamental of organic chemistry, aliphatic hydrocarbon, stereochemistry Volumetric Analysis and identification of extra elements organic compounds and separation of mixtures by Chromatography
CEMHMJ101 Disc.-B1	**MJ1T MJ1P Organic & Inorganic Chemistry**	(Same as like A1 for students taken Chemistry as Discipline-B)
CEMSEC01	**SEC1P Chemistry of Cosmetics & Perfumes**	Understanding the basics of perfumes and perfume industry. Insight into the cosmetics and hair and nail care products. Understanding the cosmetics for the skin care products. Providing a deep insight into the chemistry of perfumery chemicals. Attaining a deep insight into the chemistry of cosmeceuticals. Providing a better knowledge of the characterization techniques for perfumes and cosmetics.
CEMSEC02	**SEC2P Medicinal & Pharmaceutical Chemistry**	Discuss & understand chemistry of active ingredient in turmeric, clove, tea/coffee etc. Importance and ingredients of different herbal and medicinal plants.
CEMMI01	**MI-1T MI-1P Atomic Structure, Acids and Bases, Redox Reactions, & States Of Matter.**	Conceptual idea about an atom, acid, base, redox reactions. Knowledge about kinetic theory of gas and real gas, Property of liquids and solids Practical knowledge in acid-base and redox titrations and determination of surface tension and viscosity of liquid
CEMMI02	**MI-2T MI-2P General Organic Chemistry, Aliphatic Hydrocarbons & Chemical Kinetics**	Conceptual idea about fundamental of organic chemistry, aliphatic hydrocarbon, stereochemistry and knowledge about reaction kinetics Practical knowledge about the Qualitative Analysis of Single Solid Organic Compound(s). Learn to carry out experiments related to chemical thermodynamics and kinetics