

Program : B.Sc.Chemistry

PO(Program Outcome)

At the completion of B. Sc. in Chemistry the students are able to:

- Provide a broad foundation in chemistry that stresses scientific reasoning and Analytical problem solving with a molecular perspective.
- Achieve the skills required to succeed in graduate school, the chemical industry and professional school. Get exposures of a breadth of experimental techniques using modern instrumentation.
- Understand the importance of the Periodic Table of the Elements, how it came to be, and its role in organizing chemical information.
- Understand the interdisciplinary nature of chemistry and to integrate knowledge of mathematics, physics and other disciplines to a wide variety of chemical problems.
- Learn the laboratory skills needed to design, safely and interpret chemical research.
- Acquire a foundation of chemistry of sufficient breadth and the depth to enable them to understand and critically interpret the primary chemical literature.
- Develop the ability to communicate scientific information and research results in written and oral formats.
- Learn professionalism, including the ability to work in teams and apply basic ethical principles.

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PSO(Program Specific Outcome)

- To encourage students to fix their feet and bright their carrier in the fields of science and technology for sustainable future and solve the emerging opportunities and challenges.
- To encourage our budding scientist in the field of chemical research for human well beings.
- To encourage and motivate the students to understand the chemistry in our daily life.
- To inspire students to follow the principles of green chemistry which provides guideline for the exploration of nature without disturbing equilibrium of the nature.
- We help the students to understand theoretical chemistry by its practical applications in which traditional and modern apparatus are used.
- To create awareness and understanding of various critical perspectives and environmental challenges.
- To encourage students to adopt comparative understanding with mathematical, biological and social sciences.
- To understand the diversity of the subject in the different fields.
- To encourage the student towards creativity and generates scientific attitude.

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CO(Course Outcome)

SEMESTER - I

CC CH 101

After completion students will be able to

- Understand bondings in chemical compounds.
- Understand f block elements and their periodic properties
- Develop the understanding of chemical structure and chemical properties
- Understand thermodynamics of chemical reactions and processes
- Know applications of analytical methods.

SECH 101

After completion students will be able to

- Know types of soils, fertilizers and various insecticides

LC CH 101

After completion students will be able to

- To develop skills for qualitative analysis and quantitative estimation using the different branches of volumetric Analysis

SEMESTER - II

CC CH 201

After completion students will be able to

- Know coordination chemistry of inorganic compounds
- Understanding the stereo chemistry of organic compounds
- To develop understanding to chemical kinetics and nuclear chemistry
- Inorganic quantitative analysis understanding by volumetric analysis

SECH 201

After completion students will be able to

- Basic understanding of Medicinal chemistry.

LC CH 201

After completion students will be able to

- Understand the concept of origin of chemistry.
- Develop an understanding of the chemical properties of compounds.
- Gain knowledge about the structure, function and applications of the chemicals compounds.

SEMESTER - III

CC CH- 301

After completion students will be able to

- Understand the concept of Inorganic and physical chemistry
- Develop an understanding of the chemical systems around us

CC CH-302

After completion students will be able to

- Understand the concept of various biochemical entities in the body.
- Develop an understanding of the biochemical systems around us.
- Gain knowledge about the structure, function and applications of various inorganic compounds.

SE CH- 301A

After completion students will be able to

- Various types of pollutants.
- Preventions for the pollution free society

SE CH- 301B

After completion students will be able to

- Application of ceramics in today's world

LC CH 301

After completion students will be able to

- Understand the concept of origin of chemistry.
- Develop an understanding of the chemical properties of compounds.
- Gain knowledge about the structure, function and applications of the chemicals compounds.

LC CH 302

After completion students will be able to

- Correlating the principles of chemistry by performing physico-chemical experiments.
- Strengthening the theory concepts of Physical Chemistry.
- Developing instrumental operational skills and analytical abilities.

SEMESTER - IV

CC CH-401

After completion students will be able to

- Understand the concept of coordination compounds and their magnetic properties.
- Introduction to heterocycles and their reactions.
- Understanding the behavior of ionic solutions, conductometric titrations and hydrolysis of salts.

CC CH-402

After completion students will be able to

- Understanding the chemistry of electro deficient boron hydrides.
- Strengthening the concepts of spectroscopy and applications of electronic spectra.
- Extension to solution chemistry and cell potentials and EMF.

SE CH-401A

After completion students will be able to

- Understand the concept of name reactions and its applications in current chemical experiments..
- Develop an understanding of the chemical reactions.

SE CH-401B

After completion students will be able to

- Know the concept of Green chemistry.
- Develop an understanding of the applications of green chemistry

LC CH 401

After completion students will be able to

- Separations of Inorganic compounds

LC CH 402

After completion students will be able to

- Develop the analytical skills of volumetric and chromatography analysis.

SEMESTER - V**CC CH- 501**

After completion students will be able to

- Understanding inner sphere and out sphere mechanisms in complexes.
- Know OMC and their industrial applications.
- Elaborate the process and chemistry of corrosion.

CC CH-502

After completion students will be able to

- Know stereo compounds and their nomenclature methods.
- Extension to chemistry of carbohydrates and isoprenoids.
- Differentiating the various reactions mechanisms (SN1, SN2).

CC CH- 503

After completion students will be able to

- Elaborating the concepts of EMF, types of various cells and applications.
- Know statistical thermodynamics and various distribution laws.
- Developing understanding on polymer-plastics, their industrial synthesis and applications.

CC CH- 504

After completion students will be able to

- Understanding the symmetrical and non-symmetrical structures of nature and extending them to chemical molecules and applications of group theory.
- Extension of spectroscopic analysis based on proton nucleus and their applications.
- Extension to acid base concepts and acid base titrations

SE CH- 505 A

After completion students will be able to

- Know synthetic dyes, pigments and their classification.

SE CH- 505 B

After completion students will be able to

- Know oil fat and waxes and their chemistry.

SE CH- 505 C

After completion students will be able to

- Know Paints and Varnishes and their industrial production.

SE CH- 505 D

After completion students will be able to

- Know types of Cosmetic chemicals.

SE CH- 505 E

After completion students will be able to

- Know occurrence and production of metals and the chemistry of industrial production.

LC CH-507 A

After completion students will be able to

- Developing analytical skill to separate radicals and determination of metals in alloys.
- Know Synthesis of inorganic compounds by conventional methods

LC CH-507 B

After completion students will be able to

- Developing analytical skill to separate organic compounds/liq. Mixture.

LC CH-507 C

After completion students will be able to

- Correlating the principles of chemistry by performing physico-chemical experiments.
- Strengthening the theory concepts of Physical Chemistry.
- Developing instrumental operational skills and analytical abilities.

LC CH-507 D

After completion students will be able to

- To check the knowledge and the expression of understanding and insight of Chemistry by conducting Viva

SEMESTER - VI

CC CH- 601

After completion students will be able to

- Strengthening the understanding about the valence of elements
- Know bio inorganic synthesis and their mechanisms.
- Elaborating the concepts of metal carbonyls and their catalytic applications.

CC CH-602

After completion students will be able to

- Developing the understanding of addition reactions and differentiating the mode of reactions.
- Know active methylene compounds and their synthetic application.
- Understand aromatic nucleophilic substitution.

CC CH- 603

After completion students will be able to

- Resume of law of thermodynamics and the transformations of industrial processes
- Know photo induced reactions and their chemistry.
- Extension to chemical kinetics, theories of reaction rates and their limitations.

CC CH- 604

After completion students will be able to

- Know spectroscopic term symbols and J-J coupling.
- Develop the skills to determine the Structure of organic compounds by the spectroscopic data (IR, NMR, UV)
- Extension to advance chromatographic techniques and applications.

SE CH- 605 A

After completion students will be able to

- Extension to polymer chemistry synthesis and their molecular determination methods.

SE CH- 605 B

After completion students will be able to

- Know cement and their characteristic standards

SE CH- 605 C

After completion students will be able to

- Classification of food additives, their standards and current industrial growth.

SE CH- 605 D

After completion students will be able to

- Developing the understanding about soaps and detergents and their manufacturing processes.

SE CH- 605 E

After completion students will be able to

- Exploring the applications of chemical analysis in the real world scenario to investigate and evident the crime scenes to support law.

LC CH-607 A

After completion students will be able to

- Developing analytical skill to separate radicals

LC CH-607 B

After completion students will be able to

- Developing analytical skill to estimate the functional groups in organic compounds.
- Synthesis of organic compounds by conventional methods.

LC CH-607 C

After completion students will be able to

- Correlating the principles of chemistry by performing physico-chemical experiments.
- Strengthening the theory concepts of Physical Chemistry.
- Developing instrumental operational skills and analytical abilities.

LC CH-607 D

After completion students will be able to

- To check the knowledge and the expression of understanding and insight of Chemistry by conducting Viva