MAHARAJAS COLLEGE

DEPARTMENT OF CHEMISTRY

The UG courses in Chemistry Department were revised in the year 2016 as per the "Academic Autonomy" implemented in our College. This year the department has modified the syllabus with some **omissions and additions. Additions include a course in environmental chemistry and human rights and study tour.**

BSc Chemistry (Model I) Programme Outcomes (PSO)

1. *Social Responsibility*
   a) Develop the sense of social being
   b) Develop self-critical abilities and also the ability to view problems and social issues from humanity perspective.
2. *Sense of Environmental issues*
   a) To know the role of chemistry in nature and society.
   b) Realize the impact of pollution and exploitation of nature
   c) Develop a sense of environmental awareness and attitude of eco-friendly activities
   d) Develop a mind of sustainable development.
2. *Critical Thinking*
   a) Acquire the ability to apply the basic logic and science to to thoughts and actions.
   b) Develop self-critical abilities and ability to view problems and social issues.
3. *Effective Citizenship*
   a) Learn to participate in nation building by adhering to the principles of sovereignty
   of the nation, socialism, secularism and democracy.
4. *Effective Communication*
   a) Acquire the ability to speak, write, read and listen
   b) Learn to analyse, synthesise and evaluate ideas and situations.
5. *Interdisciplinarity*
   a) Students are free to acquire knowledge in their choice

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b) Promote interdisciplinary studies for their better future in a technologically developed society.

CHE1COR01 – INORGANIC CHEMISTRY – I
(GENERAL INORGANIC CHEMISTRY)

- To have an outline of methodology of Science in general and Chemistry in particular
- To study the periodic properties of elements and its compounds
- To study the analytical principles and good laboratory practice
- To develop skills required for qualitative and quantitative inorganic analysis
- To study various atom models.
- To study the environmental chemistry.

CHE2COR02: INORGANIC CHEMISTRY –II
(ATOMIC STRUCTURE, CHEMICAL BONDING AND BASIC COORDINATION CHEMISTRY)

- To understand the important features of the quantum mechanical model of the atom.
- To explain the formation of different types of bonds
- To predict the geometry of simple molecules
- To explain the different types of hybridization and draw shapes of simple covalent molecules
- To understand the molecular orbital theory of diatomic molecules
- To understand the basic ideas of coordination compounds
- To study the isomerism in metal complexes
- To study the basic theories of coordination compounds

CHE2P01-QUALITATIVE INORGANIC ANALYSIS

- To understand the basic ideas of qualitative and quantitative inorganic analysis
- To study the basic theories of characterization of inorganic mixture

CHE3COR03– ORGANIC CHEMISTRY -1
(REACTION MECHANISM & STEREOCHEMISTRY)

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- To have a basic understanding about the classification and nomenclature of organic compounds, fundamentals of organic reaction mechanism, aromaticity and stereochemistry.
- To make students capable of understanding and studying organic reactions.
- To have exposure to various emerging new areas of organic chemistry.
- To develop skills required for the qualitative analysis of organic compounds.

CHE3COR04 ORGANIC CHEMISTRY II (FUNCTIONAL GROUP CHEMISTRY)

- To learn the chemistry of alcohols, phenols, carboxylic acids, derivatives of carboxylic acids, sulphonic acids, carbonyl compounds, poly nuclear hydrocarbons, active methylene compounds, synthetic reagents and Grignard reagents.
- To understand and study organic reaction mechanisms.
- To develop skills required for the qualitative analysis of organic compounds

CHE5COR06- ORGANIC CHEMISTRY-III (NATURAL PRODUCTS)

- To learn in detail the chemistry of carbohydrates.
- To learn in detail the chemistry of amino acids, proteins and nucleic acids.
- To understand the structure and functions of enzymes, proteins and nucleic acids.
- To study the fundamentals of terpenoids, alkaloids, vitamins, lipids and steroids, Green Fluorescent Proteins
- Todevelopbasicskillsrequiredforcrystallisation,distillation,solventextraction, TLC and column chromatography.

CHE5COR07 – PHYSICAL CHEMISTRY- I (STATES OF MATTER AND SURFACE CHEMISTRY)

- To study the intermolecular forces in gases and liquids
- To understand the dynamics of the molecules in the gases and liquids
- To study liquefaction of gases
- To learn the structure of solids
- To understand the symmetry of crystals
- To study defects in crystals
- To study adsorption.

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CHE5COR08- PHYSICAL CHEMISTRY- II (QUANTUM MECHANICS, SPECTROSCOPY AND PHOTOCHEMISTRY)

- To differentiate between classical and quantum mechanics
- To study the postulates of quantum mechanics and the quantum mechanical model of the hydrogen atom
- To study valence bond and molecular orbital theory
- To study the principle and applications of microwave, infra red, Raman, electronic and magnetic resonance spectroscopy.
- To study the fundamentals of mass spectrometry
- To study the fundamentals of photochemistry

CHOICE BASED COURSE - I

CHE5CBP01: CHEMISTRY IN EVERYDAY LIFE

- To study the general information about the food we eat, the cloths we wear and the cosmetcis we apply.
- To learn about the pros and cons of using processed food stuff, which is in vogue today.

CHE5CBP02: DAIRY SCIENCE

- To understand the chemical composition of milk
- To know the techniques of milk processing
- To acquire knowledge about various milk products
- To understand the chemistry of other types of special milk
- To acquire knowledge about techniques of fermentation of milk and various milk products

CHE5CBP03: FOOD SCIENCE

- To understand the chemistry of food adulteration and adulterants
- To know the methods of analyzing the adulterants
- To know the chemistry of food poisoning
- To acquire knowledge about food additives
- To understand the chemistry of beverages and soft drinks

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- To know the methods of preparing the soft drinks by field visits
- To acquire knowledge about various edible oils and the processing techniques related to oils

CHE5CBP04: FORENSIC SCIENCE

- To learn Crime investigation through diagnosis of poisoning and postmortem.
- To acquire knowledge about explosions, the causes (gelatin sticks, RDX etc) and the security measures.
- Tounderstandthemethodsofdetectingforgeryinbankandeducationalrecords.
- To acquire a comprehensive knowledge about tracks and traces.
- To understand the chemical methods used in crime investigation.(Medical aspects).

CHE5CBP05: ENVIRONMENTAL CHEMISTRY

- Environmental management and impact assessment
- Toxic effects of pollutants
- Air, water, and soil pollution
- Effluent and waste management

CHE5CBP06: NANOSCIENCE AND NANOTECHNOLOGY

- WhyNanotechnology?
- What are the historical landmarks in the area?
- What are the terms and concepts of Nanoscience?
- What are nanoparticles, nanotubes, nanowires and other low-dimension a systems?
- What are the principal properties used to explore nanomaterials and what are the techniques used?
- How do we manipulate nanomaterials in areas such as biology, biotechnology medicine, medical diagnosis, sensors etc.?
- What are the main social, economic and ethical issues related to Nanotechnology?

CHE6COR09 - INORGANIC CHEMISTRY – IV (ADVANCED INORGANIC CHEMISTRY)

To understand

- the method behind research

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- the preparation and uses of inorganic polymers
- preparation and application of nano materials
- the chemistry of the compounds of p block elements
- thermal and chromatographic techniques

CHE6COR10 - ORGANIC CHEMISTRY- IV (ADVANCED ORGANIC CHEMISTRY)

To enable the students-

- To learn the chemistry of nitro compounds, amines, heterocyclics.
- To understand and study mechanism of reactions of nitro compounds and amines.
- To have an elementary idea of organic spectroscopy, photochemistry and pericyclic reactions.
- To identify organic compound using UV, IR and PMR spectroscopic techniques and elementary idea on green chemistry and.
- To give an outline of applied organic chemistry including chemotherapy, polymer chemistry, green chemistry, supramolecular chemistry and dyes.
- To develop basic skills required for crystallization, distillation, solvent extraction, TLC and column chromatography.

CHE6COR11 - PHYSICAL CHEMISTRY – III (THERMODYNAMICS AND KINETICS)

- To study the laws of thermodynamics
- To derive Gibbs-Helmholtz, Clausius-Clapeyron, Gibbs-Duhem equations
- To derive the relation between Kp, Kc and Kx
- To derive the phase rule
- To derive the rate equations for zero, first and second order reactions
- To study the phase diagrams of one and two component systems
- To understand the theories of chemical kinetics
- To get an elementary idea of catalysis including enzyme catalysis.

CHE6COR12 - PHYSICAL CHEMISTRY – IV (SOLUTION CHEMISTRY AND ELECTROCHEMISTRY)

- Tostudythebehaviourofbinaryliquidmixtures,CST,azeotropes,colligative properties
- To study solubility of gases in liquids,

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- To study ionic equilibria and electrical properties of ions in solution.
- To study the concepts of acids and bases, pH and buffer solutions.

CHE6CBP01: POLYMER CHEMISTRY

- To know about the types of polymers and the chemistry of polymerisation.
- To understand the physical properties of polymers, their reactions and degradation.
- To acquire knowledge about the polymerisation techniques and polymer processing.
- Toknowthechemistryofindividualpolymers,theirpreparationandproperties
- To have an idea about the recent advances in polymer science

CHE6CBP02: NANOCHEMISTRY AND NANOTECHNOLOGY

To study

- History,terminology,and scales of nano systems
- Synthesis and characterisation of nano systems
- Electrical and optical properties of nano systems
- Applications of nanomaterials

CHE6CBP03: INDUSTRIAL CHEMISTRY

- To understand the requirements to start an industry - different fuels used and the industrial catalysts used.
- To know about different petrochemical industries
- To understand the manufacture of fertilizers and speciality chemicals.
- Toacquireknowledgeaboutoils,soaps,detergents,sugarindustry,leatherand pesticide industries.
- To understand the important process of metallurgy, extraction of metals and environmental problems caused by chemical industries.

CHE6CBP04: ENVIRONMENTAL CHEMISTRY

To study:

- Environmental management and impact assessment
- Toxic effects of pollutants
- Air, water, and soil pollution

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CHE6CBP05: SOIL AND AGRICULTURAL CHEMISTRY

- To understand the soil and its formation
- To know the physical properties of soil and other related aspects
- Toacquireknowledgeaboutchemistryaspectsofsoilandnitrogenfixingprocess
- To understand the chemistry of nutrients that are present in soil
- To understand the chemistry of pesticides, fungicides and herbicides

CHE6CBP06: PHARMACEUTICAL CHEMISTRY

- To understand the common diseases and the cure
- To know the terms of pharmacology
- To understand the mechanism of drug action
- To acquire knowledge about chemotherapy and the antibiotics
- To understand the drugs used for diabetes, hypertension, cholesterolemia
- To acquire knowledge about various health promoting drugs

CHE6P03 - VOLUMETRIC ANALYSIS

- To understand the principles of different types of titrations.
- To develop skill to perform quantitative analysis.
- To develop skill to prepare solutions of various concentrations

CHE6P04 – ORGANIC CHEMISTRY PRACTICAL-II

- To understand the principles of different types of separation techniques.
- To develop skill in handling various organic mixtures
- To develop skill to carry out different single stage organic preparations

CHE6P05 – PHYSICAL CHEMISTRY PRACTICAL

- To develop skill in doing physical chemistry practicals.
- To develop skill in handling different equipments

CHE6P06 – GRAVIMETRIC ANALYSIS

- Develop skill in doing Gravimetric Analysis.
- Skill development in precipitation techniques.

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COMPLEMENTARY COURSES

CHE1CMP01 BASIC THEORETICAL AND ANALYTICAL CHEMISTRY

- The course provides an insight into some of the fundamental concepts and principles that are very essential for the study of chemistry.
- To understand the various postulates and theories which led to the development of structure of atom.
- To understand the concept of equilibrium and thermodynamics which enables the students to examine the properties of bulk matter.
- To develop a thorough background in chemical principles that are particularly important to analytical Chemistry.
- To understand the laboratory skills that allows the students to develop an interest in judging the accuracy and precision of experimental data.
- To understand a wide range of techniques that are useful in modern analytical Chemistry.
- To develop the skills necessary to solve analytical problems in a quantitative manner

CHE2CMP02: BASIC ORGANIC CHEMISTRY

The course provides fundamental aspects of organic chemistry.

- To develop a thorough understanding in Organic Chemistry
- To understand stereochemistry of organic compounds.
- To understand mechanisms of some basic organic reactions through the concept of hybridization.
- To know the classification of polymers, polymerization reactions, and the structure and uses of some commercial and natural polymers.

CHE3CMP03.1 : ADVANCED PHYSICAL CHEMISTRY – I

- To make the concepts and methods of physical chemistry clear and interesting to students, who have basic ideas in mathematics and physics.
- To understand basic ideas of nuclear chemistry, surface chemistry, phase equillibria and give an insight to different states of matters.

CHE3CMP03.2: ADVANCED INORGANIC AND ORGANIC CHEMISTRY

- To understand the facts and concepts in inorganic and organic chemistry.

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- To develop the basic ideas which enables the students a basic understanding of nuclear chemistry and heterocyclic compounds
- To learn about various types of food additives, chemotherapy and the role of chemistry in agriculture.

CHE4CMP04.1: ADVANCED PHYSICAL CHEMISTRY – II

- To understand the basic idea about spectroscopy and photochemistry
- To study the rules governing chemical reactions and factors influencing them and to study basics of electrochemistry, electro motive force and chemical kinetics.

CHE4CMP04.2: ADVANCED BIO- ORGANIC CHEMISTRY

- To study the classification and properties of amino acids.
- To study the structure and functions of proteins and nucleic acids, ADP, ATP and AMP.
- To study classification, properties and structure of carbohydrates.
- To study classification and characteristics of enzymes and mechanism of enzyme action.
- To study fundamentals of vitamins, hormones, steroids, essential oils, lipids and alkaloids.

CHE4CP02.1: Physical Chemistry Practical

- To develop skill in doing physical chemistry practicals.
- To develop skill in handling different equipments

CHE5COR05 - INORGANIC CHEMISTRY III (COORDINATION CHEMISTRY & BIOINORGANIC CHEMISTRY)

- To understand the general characteristics of the d and f block elements
- To study the physical and chemical properties of d and f block elements
- To study the Werner's theory of coordination compounds
- To study isomerism in metal complexes
- To study the bonding in coordination compounds
- To understand the applications of coordination compounds

- To understand the classification, properties and applications of organometallic compounds
- To study the methods of preparation, properties, structure and bonding of metal carbonyls and metal clusters
- To understand the role of metals in biological systems.
- To understand the important analytical and instrumental tools used for practicing chemistry
- To apply these skills in the analysis of experimental data in chemistry practical

B.Sc. CHEMISTRY- ENVIRONMENT & WATER MANAGEMENT

CHE1COR01 – INORGANIC CHEMISTRY – I (GENERAL INORGANIC CHEMISTRY)

- To have a outline of the methodology of science in general and chemistry in particular.
- To study the periodic properties of elements.
- Tostudytheanalyticalprinciplesandgoodlaboratorypracticesandtodevelop skills required for qualitative and quantitative inorganic analysis. various atom models.
- To study the environmental chemistry.

ENV1COR01: BASIC CONCEPTS OF ENVIRONMENTAL SCIENCE

- To understand the components of environment.
- To understand the importance of ecology and ecosystems in environment
- To understand the significance of biodiversity and need for its conservation and various strategies adopted for its conservation.

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- To study the need for sustainable use of renewable and non renewable energy resources.

ENV1COR02: ENVIRONMENTAL TOXICOLOGY AND OCCUPATIONAL HEALTH

- To understand importance of air, water and soil in sustaining life in earth.
- To study the toxic effects of chemical in organisms and environment
- To study the occupational health

CHE2COR02: INORGANIC CHEMISTRY –II (ATOMIC STRUCTURE AND CHEMICAL BONDING)

- To study the various atom models
- To understand the important features of the quantum mechanical model of the atom.
- To explain the formation of different types of bonds
- To predict the geometry of simple molecules
- To explain the different types of hybridization and draw shapes of simple covalent molecules
- To understand the molecular orbital theory of diatomic molecules
- To study nuclear models and nuclear reaction

ENV2COR03: ATMOSPHERIC CHEMISTRY AND AIR POLLUTION

- To understand basic concepts of weather and climate
- To study the composition and structure of atmosphere
- To study the chemistry of atmosphere and atmospheric pollution

ENV2COR04: ENVIRONMENTAL POLLUTION

- To know about the water pollutants and their effects in environment.
- To study detrimental effects of soil pollution and its control measures.
- Tounderstandthesourcesandeffectsofnoise,radioactiveandthermalpollution

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CHE3COR03– ORGANIC CHEMISTRY -1 (REACTION MECHANISM & STEREOCHEMISTRY)

- To have a basic understanding about the classification and nomenclature of organic compounds, fundamentals of organic reaction mechanism, aromaticity and stereochemistry.
- To make students capable of understanding and studying organic reactions.
- To have exposure to various emerging new areas of organic chemistry.
- To develop skills required for the qualitative analysis of organic compounds.

ENV3COR05: ENVIRONMENTAL ANALYTICAL TECHNIQUES

- To understand the basics of environmental sampling - water, sediment and biological samples.
- To understand in detail about spectrophotometric and chromatographic methods of analyses.
- To provide the fundamentals of biostatistics.

ENV3COR06: ENVIRONMENTAL ENGINEERING

- To know the sampling methods and techniques which are adopted for water and sediment sampling.
- To study the processes involved in water treatment plant and evaluate its performance.
- To understand the air pollution control measures adopted for environment protection.
- To assess gaseous and particulate pollutants present in the atmosphere both quantitatively and qualitatively.

CHE4COR04 - ORGANIC CHEMISTRY –II (FUNCTIONAL GROUP CHEMISTRY)

- To enable the students-To learn the chemistry of alcohols, phenols, carboxylic acids, derivatives of carboxylic acids, sulphonic acids, carbonyl compounds, poly nuclear hydrocarbons, active methylene compounds, synthetic reagents and Grignard reagents.
- To understand and study organic reaction mechanisms.
- To develop skills required for the qualitative analysis of organic compounds

ENV4COR07: ENVIRONMENTAL MICROBIOLOGY AND BIOTECHNOLOGY

- To get a basic idea on environmental microbiology.
- To understand the influence of microorganisms in biosphere.
- To studyaboutindicatororganismcausesmicrobialinfectionsinhumanbeings.
- To get a basic idea on Environmental biotechnology.

ENV4COR08: ENVIRONMENTAL MANAGEMENT

- To study about environment Impact assessment.
- To understand the significance of planning in various environmental aspects.
- To get an idea about environmental audit
- To know about the significance of ISO 14000 series in Environmental management.
- To study about waste management

CHE5COR06- ORGANIC CHEMISTRY-III (NATURAL PRODUCTS)

- To learn in detail the chemistry of carbohydrates.
- To learn in detail the chemistry of amino acids, proteins and nucleic acids.
- To understand the structure and functions of enzymes, proteins and nucleic acids.
- To study the fundamentals of terpenoids, alkaloids, vitamins, lipids and steroids, Green Fluorescent Proteins

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- Todevelopbasicskillsrequiredforcrystallisation,distillation,solventextraction, TLC and column chromatography.

CHE5COR07 – PHYSICAL CHEMISTRY- I (STATES OF MATTER AND SURFACE CHEMISTRY)

- To study the intermolecular forces in gases and liquids
- To understand the dynamics of the molecules in the gases and liquids
- To study liquefaction of gases
- To learn the structure of solids
- To understand the symmetry of crystals
- To study defects in crystals
- To study adsorption.

CHE5COR08- PHYSICAL CHEMISTRY- II (QUANTUM MECHANICS, SPECTROSCOPY AND PHOTOCHEMISTRY)

- To differentiate between classical and quantum mechanics
- To study the postulates of quantum mechanics and the quantum mechanical model of the hydrogen atom
- To study valence bond and molecular orbital theory
- To study the principle and applications of microwave, infra red, Raman, electronic and magnetic resonance spectroscopy.
- To study the fundamentals of mass spectrometry
- To study the fundamentals of photochemistry

CHOICE BASED COURSE - I

CHE5CBP01: CHEMISTRY IN EVERYDAY LIFE

- To study the general information about the food we eat, the cloths we wear and the cosmetcis we apply.
- To learn about the pros and cons of using processed food stuff, which is in vogue today.

CHE5CBP02: DAIRY SCIENCE

- To understand the chemical composition of milk
- To know the techniques of milk processing
- To acquire knowledge about various milk products
- To understand the chemistry of other types of special milk
- To acquire knowledge about techniques of fermentation of milk and various milk products

CHE5CBP03: FOOD SCIENCE

- To understand the chemistry of food adulteration and adulterants
- To know the methods of analyzing the adulterants
- To know the chemistry of food poisoning
- To acquire knowledge about food additives
- To understand the chemistry of beverages and soft drinks
- To know the methods of preparing the soft drinks by field visits
- To acquire knowledge about various edible oils and the processing techniques related to oils

CHE5CBP04: FORENSIC SCIENCE

- To learn Crime investigation through diagnosis of poisoning and postmortem.
- To acquire knowledge about explosions, the causes (gelatin sticks, RDX etc) and the security measures.
- Tounderstandthemethodsofdetectingforgeryinbankandeducationalrecords.
- To acquire a comprehensive knowledge about tracks and traces.
- To understand the chemical methods used in crime investigation.(Medical aspects).

CHE5CBP05: ENVIRONMENTAL CHEMISTRY

- Environmental management and impact assessment
- Toxic effects of pollutants
- Air, water, and soil pollution
- Effluent and waste management

CHE5CBP06: NANOSCIENCE AND NANOTECHNOLOGY

- WhyNanotechnology?

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- What are the historical landmarks in the area?
- What are the terms and concepts of Nanoscience?
- What are nanoparticles, nanotubes, nanowires and other low-dimension a systems?
- What are the principal properties used to explore nanomaterials and what are the techniques used?
- How do we manipulate nanomaterials in areas such as biology, biotechnology medicine, medical diagnosis, sensors etc.?
- What are the main social, economic and ethical issues related to Nanotechnology?

CHE6COR09 - INORGANIC CHEMISTRY – IV (ADVANCED INORGANIC CHEMISTRY)

To understand

- the method behind research
- the preparation and uses of inorganic polymers
- preparation and application of nano materials
- the chemistry of the compounds of p block elements
- thermal and chromatographic techniques

CHE6COR10 - ORGANIC CHEMISTRY- IV (ADVANCED ORGANIC CHEMISTRY)

To enable the students-

- To learn the chemistry of nitro compounds, amines, heterocyclics.
- To understand and study mechanism of reactions of nitro compounds and amines.
- To have an elementary idea of organic spectroscopy, photochemistry and pericyclic reactions.
- To identify organic compound using UV, IR and PMR spectroscopic techniques and elementary idea on green chemistry and.
- To give an outline of applied organic chemistry including chemotherapy, polymer chemistry, green chemistry, supramolecular chemistry and dyes.
- To develop basic skills required for crystallization, distillation, solvent extraction, TLC and column chromatography.

CHE6COR11 - PHYSICAL CHEMISTRY – III (THERMODYNAMICS AND KINETICS)

- To study the laws of thermodynamics
- To derive Gibbs-Helmholtz, Clausius-Clapeyron, Gibbs-Duhem equations
- To derive the relation between Kp, Kc and Kx
- To derive the phase rule
- To derive the rate equations for zero, first and second order reactions
- To study the phase diagrams of one and two component systems
- To understand the theories of chemical kinetics
- To get an elementary idea of catalysis including enzyme catalysis.

CHE6COR12 - PHYSICAL CHEMISTRY – IV (SOLUTION CHEMISTRY AND ELECTROCHEMISTRY)

- Tostudythebehaviourofbinaryliquidmixtures,CST,azeotropes,colligative properties
- To study solubility of gases in liquids,
- To study ionic equilibria and electrical properties of ions in solution.
- To study the concepts of acids and bases, pH and buffer solutions.

CHE6CBP01: POLYMER CHEMISTRY

- To know about the types of polymers and the chemistry of polymerisation.
- To understand the physical properties of polymers, their reactions and degradation.
- To acquire knowledge about the polymerisation techniques and polymer processing.
- Toknowthechemistryofindividualpolymers,theirpreparationandproperties
- To have an idea about the recent advances in polymer science

CHE6CBP02: NANOCHEMISTRY AND NANOTECHNOLOGY

To study

- History,terminology,and scales of nano systems
- Synthesis and characterisation of nano systems
- Electrical and optical properties of nano systems
- Applications of nanomaterials

CHE6CBP03: INDUSTRIAL CHEMISTRY

- To understand the requirements to start an industry - different fuels used and the industrial catalysts used.

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- To know about different petrochemical industries
- To understand the manufacture of fertilizers and speciality chemicals.
- Toacquireknowledgeaboutoils,soaps,detergents,sugarindustry,leatherand pesticide industries.
- To understand the important process of metallurgy, extraction of metals and environmental problems caused by chemical industries.

CHE6CBP04: ENVIRONMENTAL CHEMISTRY

To study:

- Environmental management and impact assessment
- Toxic effects of pollutants
- Air, water, and soil pollution

CHE6CBP05: SOIL AND AGRICULTURAL CHEMISTRY

- To understand the soil and its formation
- To know the physical properties of soil and other related aspects
- Toacquireknowledgeaboutchemistryaspectsofsoilandnitrogenfixingprocess
- To understand the chemistry of nutrients that are present in soil
- To understand the chemistry of pesticides, fungicides and herbicides

CHE6CBP06: PHARMACEUTICAL CHEMISTRY

- To understand the common diseases and the cure
- To know the terms of pharmacology
- To understand the mechanism of drug action
- To acquire knowledge about chemotherapy and the antibiotics
- To understand the drugs used for diabetes, hypertension, cholesterolemia
- To acquire knowledge about various health promoting drugs

CHE6P03 - VOLUMETRIC ANALYSIS

- To understand the principles of different types of titrations.
- To develop skill to perform quantitative analysis.
- To develop skill to prepare solutions of various concentrations

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CHE6P04 – ORGANIC CHEMISTRY PRACTICAL-II

- To understand the principles of different types of separation techniques.
- To develop skill in handling various organic mixtures
- To develop skill to carry out different single stage organic preparations

CHE6P05 – PHYSICAL CHEMISTRY PRACTICAL

- To develop skill in doing physical chemistry practicals.
- To develop skill in handling different equipments

CHE6P06 – GRAVIMETRIC ANALYSIS

- Develop skill in doing Gravimetric Analysis.
- Skill development in precipitation techniques.

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