## DEPARTMENT OF CHEMISTRY

## PROGRAMME SPECIFIC OUTCOME

On successful completion of the **B.Sc Chemistry** programme, students will

| | |
|---|---|
| **PSO1:** | Understanding basic ideas behind chemical phenomena and recent developments in Chemistry. |
| **PSO2:** | Getting trained in organic and inorganic qualitative and quantitative analysis. |
| **PSO3:** | Acquirement of good experimental skills and data interpretation. |
| **PSO4:** | Employability guaranteed chapters. |
| **PSO5:** | Founding fundamental concepts and applications. |
| **PSO6:** | Getting training in critical thinking, applying rationale and thereby solving problems. |
| **PSO7:** | Gaining employment in industries such as water treatment, paint, pharmaceutical, petroleum refining, nuclear power, cement, fertilizer, Oil mills……. etc. |

On successful completion of the **M.Sc Chemistry** programme, students will

| | |
|---|---|
| **PSO1:** | Understanding application oriented concept of all areas including the recent in a nano and green chemistry. |
| **PSO2:** | Getting expertise in qualitative & quantitative determination including volumetric, gravimetric, potentiometric, conductometric, spectrometric and magnetic susceptibility experiments. |
| **PSO3:** | Training in systematic approach in qualitative analysis and recording & data interpretation. |
| **PSO4:** | Separating and estimation of organic and inorganic compounds. |
| **PSO5:** | Trained the preparation of simple co-ordination compounds. |
| **PSO6:** | Getting employments in industries such as Fertilizer, Paint, Pharmaceutical, Cement ……. etc. |

On successful completion of the **M.Pill Chemistry** programme, students will

| | |
|---|---|
| **PSO1:** | Be prepared for various competitive examination such as CSIR, GATE, NET ….etc. |
| **PSO2:** | Learn systematic literature search. |
| **PSO3:** | Studying instrumentation of various instruments including various spectrometers. |
| **PSO4:** | Learning data recording and processing. |

## COURSE OUTCOMES- I B.Sc Chemistry

## SEMESTER 1

Subject Name: **Introduction to Chemistry**

Subject Code: **U2CHC1**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the fundamentals concepts such as atomic structure, periodic properties and basics of organic chemistry. |
| **CO2:** | Knowing the basic idea of gaseous state. |

Subject Name: **Oils and Fats-I**

Subject Code: **U2CHA11**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting a detailed account of physical properties and characteristic term for various oils and fats. |

Subject Name: **Principles of Chemical analysis**

Subject Code: **U2CHS11**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing the basics concepts of electron transfer reactions. |
| **CO2:** | Understanding the theories behind the chemistry practical and purification techniques. |

Subject Name: **Chemical Bonding - I**

Subject Code: **U2CHS12**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting knowledge about the properties of elements and bonds. |
| **CO2:** | Studying the principles of chemical bond formation. |

**Semester – II**

Subject Name: **General Chemistry**

Subject Code: **U2CHC2**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting required ideas about stereochemical isomers. |
| **CO2:** | Getting expertised in surface chemistry and colloidal states. |

Subject Name: **Oils and Fats-II**

Subject Code: **U2CHA21**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing a detailed account of different types of milk products. |
| **CO2:** | Getting trained in the analysis of milk and milk products. |
| **CO3:** | Enabling to analyze various samples of Oils and Fats products. |
| **CO4:** | Understanding the basic details of Milk and Milk products. |
| **CO5:** | Gaining the knowledge about petrochemical and petroleum products. |

Subject Name: **Principles of Chemical analysis - II**

Subject Code: **U3CHS21**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the concept of purification of organic compounds. |
| **CO2:** | Mastering over molecular formulae calculations. |
| **CO3:** | Learning fundamental concepts of analytical chemistry. |

Subject Name: **Chemical Bonding - II**

Subject Code: **U3CHS22**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing Valence bond & Molecular Orbital theories in detail. |
| **CO2:** | Knowing the concept of hybridization and VSEPR theory. |
| **CO3:** | Studying the relationship between the molecular structure and bonding theories. |
| **CO4:** | Getting mastery over MO diagrams of different molecules and ions. |

Subject Name: **LAB: Volumetric analysis**

Subject Code: **U2CHC2P**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing the applications of volumetric analysis. |
| **CO2:** | Understanding the principles of redox reactions. |

Subject Name: **LAB1: Oil Analysis**

Subject Code: **U2CHA2P**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the basis of food adulterations. |
| **CO2:** | Occurring knowledge about physical and chemical parameters of Oils. |

Subject Name: **General Chemistry-I for Physical Science**

Subject Code: **U3CHA1X1**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing the basics ideas about organic chemistry. |
| **CO2:** | Knowing the details about periodic table and its periodic properties. |
| **CO3:** | Learning chemical equilibrium and its importance in industrial processes. |
| **CO4:** | Acquiring knowledge about petroleum and petrochemical products. |

Subject Name: **General Chemistry-II for Physical Science**

Subject Code: **U2CHA1X2**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the basics gaseous state. |
| **CO2:** | Getting idea about the polymer and its applications. |
| **CO3:** | Studying adequate knowledge about nuclear chemistry. |

Subject Name: **General Chemistry-I for Biological Science**

Subject Code: **U3CHA1Y**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing the basics of colloids. |
| **CO2:** | Studying the fundamental ideas about organic chemistry. |
| **CO3:** | Acquiring a knowledge about petrochemical products and polymers. |

Subject Name: **General Chemistry –II for Biological science**

Subject Code: **U3CHA2Y**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the basics of chemical calculation. |
| **CO2:** | Gaining adequate knowledge about dyes. |
| **CO3:** | Studying the separation of chemical by chromatography techniques. |
| **CO4:** | Knowing the structure of protein and function of hormones. |

Subject Name: **Volumetric Analysis**

Subject Code: **U2CHA2PX1**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the applications of volumetric analysis. |

**II B.Sc Chemistry**

**Semester -III**

Subject Name: **Inorganic and Physical chemistry**

Subject Code: **U2CHC3**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the metallurgy process of metals and also to study the preparation of pure metals. |
| **CO2:** | Learning the fundamentals of nuclear reactions, phase rule, distribution law and liquid crystal. |
| **CO3:** | They are studied the application of distribution law to solvent extraction and purification of solvents. |

Subject Name: **Oils and Fats – III**

Subject Code: **U2CHA31**

In this course the students will

| | |
|---|---|
| **CO1:** | Gaining knowledge about oil extraction and constituents and chemical properties of different oils. |
| **CO2:** | Studying the fundamentals of hydrolytic and oxidative rancidity. |
| **CO3:** | Mastering over purification process such as refining and bleaching processes. |

**Semester -IV**

Subject Name: **Organic and Physical chemistry**

Subject Code: **U2CHC4**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting expertised in arenes and heterocycles. |
| **CO2:** | Gaining structural knowledge about different carbohydrates and crystals. |
| **CO3:** | Understanding the basics and application of colligative property. |

Subject Name: **Oils and Fats – IV**

Subject Code: **U2CHA41**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the role of constituents of food and lipids. |
| **CO2:** | Studying the balanced diet. |
| **CO3:** | Getting expertised in the food preservation. |

Subject Name: **LAB: Semi-Micro Inorganic Qualitative Analysis**

Subject Code: **U1CHC4P**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the fundamentals of inorganic qualitative analysis. |
| **CO2:** | Practicing the identification of various anions and cations present in minerals. |

Subject Name: **LAB: Food Analysis**

Subject Code: **U1CHA4P**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the role of food Adulterants. |
| **CO2:** | Getting the basic knowledge about nutrients. |

Subject Name: **General Chemistry-III for Biological Sciences**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Gaining the basic knowledge of photochemistry and nuclear chemistry. |
| **CO2:** | Understanding the concept data analysis. |
| **CO3:** | Acquiring basic knowledge in water quality parameters. |
| **CO4:** | Studying the versatility of insecticides. |

Subject Name: **General Chemistry-IV for Biological Science**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the mode of action of drugs. |
| **CO2:** | Learning some chemicals in day- to- day life utility. |
| **CO3:** | Acquire basic idea about the alkaloids and Terpenoids. |
| **CO4:** | Gaining knowledge about the soil chemistry. |
| **CO5:** | Studying the role of catalyst in chemical reactions. |

Subject Name: **General Chemistry for Physical Science**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the basic requirements of chemical calculations. |
| **CO2:** | Understanding the fundamental of bonding. |
| **CO3:** | Knowing the fundamental concept about adsorption, catalysis and co-ordination compounds. |
| **CO4:** | Studying the principles of water analysis. |

Subject Name: **General Chemistry for Physical Sciences**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the basics of chemical equilibrium. |
| **CO2:** | Acquiring basic idea about drugs. |
| **CO3:** | Studying the chromatographic techniques. |
| **CO4:** | Understanding the role of bio-organic materials. |

Subject Name: **Organic Qualitative Analysis**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Gaining the fundamental knowledge about organic analysis. |

**III B.Sc Chemistry**

**Semester – V**

Subject Name: **Organic chemistry - I**

Subject Code: **U2CHC51**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying fundamentals of polynuclear hydrocarbons and green chemistry. |
| **CO2:** | Understanding aromaticity and aromatic substitution reactions. |
| **CO3:** | Acquiring fundamental knowledge about dyes. |

Subject Name: **Physical Chemistry-I**

Subject Code: **U2CHC52**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying thermodynamics in detail and its applications in heat engine & refrigeration. |
| **CO2:** | Understanding the basic concepts of electrochemistry and its applications. |
| **CO3:** | Learning fundamental of chemical kinetics and hence writing reaction path-way of the reaction. |
| **CO4:** | Studying UV and IR spectroscopies in detail. |

Subject Name: **Inorganic Chemistry I**

Subject Code: **U2CHC53**

In this course the students will

| | |
|---|---|
| **CO1:** | Acquiring knowledge about d-block elements, f-block elements and acid-base concepts. |
| **CO2:** | Studying fundamental concepts of co-ordination chemistry. |
| **CO3:** | Understanding the basics of error analysis, curve fitting and data analysis. |

Subject Name: **NME- Chemistry in day-to - day life**

Subject Code: **U2CHN51**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing the basis of different types of polymers and their applications. |
| **CO2:** | Learning the chemical aspects of fuels, oils and their importance. |
| **CO3:** | Understanding the role of chemistry in food science. |

**Semester – VI**

Subject Name: **Organic Chemistry- II**

Subject Code: **U1CHC61**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting mastery over conformational analysis of alkanes, cyclohexanes and mono substituted cyclohexanes. |
| **CO2:** | Knowing the mechanism of various rearrangement reactions. |
| **CO3:** | Learning the fundamentals of UV, IR and NMR. |

Subject Name: **Physical Chemistry -II**

Subject Code: **U2CHC62**

In this course the students will

| | |
|---|---|
| **CO1:** | Knowing the fundamentals of photochemistry and mechanism of photochemical reactions. |
| **CO2:** | Understanding basic principles of group theory. |
| **CO3:** | Studying the application of thermodynamics. |
| **CO4:** | Knowing the fundamentals of IR, Raman, NMR and EPR. |
| **CO5:** | Learning the structural elucidation of compounds. |

Subject Name: **Inorganic Chemistry II**

Subject Code: **U2CHC63**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the basics of thermoanalytical methods. |
| **CO2:** | Learning the basics of metal carbonyls. |
| **CO3:** | Understanding the various Chromatographic techniques. |
| **CO4:** | Learning the basics of bio-inorganic Chemistry. |

Subject Name: **NME – Industrial Chemistry**

Subject Code: **U2CHN61**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the toxic effects of metals. |
| **CO2:** | Studying the corrosion protection. |
| **CO3:** | Getting knowledge about the estimation of water parameters. |

Subject Name: **Medicinal Laboratory and Clinical biochemistry**

Subject Code: **U1CHS61**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning basic knowledge in blood and urine analysis. |
| **CO2:** | Studying the basics of lipids and their biological functions. |
| **CO3:** | Understanding the concepts in various analytical techniques. |

Subject Name: **LAB III-Organic preparation and Gravimetric Estimation**

Subject Code: **U1CHC6P1**

In this course the students will

| | |
|---|---|
| **CO1:** | Study the basics of organic preparation. |
| **CO2:** | Acquiring knowledge on gravimetric estimation. |

Subject Name: **LAB IV-Organic Analysis and Organic Estimation**

Subject Code: **U1CHC6P2**

In this course the students will

| | |
|---|---|
| **CO1:** | Acquiring knowledge about the analysis of simple organic compounds. |
| **CO2:** | Knowing fundamental strategies of organic estimation. |

Subject Name: **LAB V-Physical Chemistry Experiments**

Subject Code: **U1CHC6P3**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the applications of conductometric and potentiometric experiments. |
| **CO2:** | Knowing the fundamental concepts of kinetics. |
| **CO3:** | Understanding the theoretical of phase diagram and critical solution temperature. |

Subject Name: **Self Learning Course - Cosmetics**

Subject Code: **U1CHSL5**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the formulation of face powder. |
| **CO2:** | Knowing the herbals in cosmetics. |
| **CO3:** | Understanding the fundamental of cosmetics. |

## I M.Sc Chemistry

## Semester I

Subject Name: **Organic Chemistry I**

Subject Code: **P2CHC11**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the mechanism of various types of organic reactions. |
| **CO2:** | Studying advanced concept of stereochemistry and conformation with special reference to reactivity. |
| **CO3:** | Understanding the basics of aromatic character in organic molecules. |

Subject Name: **Inorganic Chemistry- I**

Subject Code: **P2CHC12**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting in depth knowledge about VB, Mo and VSEPR theories. |
| **CO2:** | Knowing the various bond types and also Born Lande eqn and Born –Haber cycle. |
| **CO3:** | Learning the fundamentals of co-ordination chemistry. |
| **CO4:** | Studying metallurgical process of some d-block and f-block elements. |

Subject Name: **Physical Chemistry - I**

Subject Code: **P2CHC13**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding quantum mechanics and also applications in molecular level too. |
| **CO2:** | Studying thermodynamics and its applications. |
| **CO3:** | Learning the applications of chemical kinetics. |

Subject Name: **Nano science and Nanotechnology**

Subject Code: **P3CHE11**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting synthetic idea of nanomaterials, characterization, properties and application of different nanomaterials. |

Subject Name: **Computer in Chemistry**

Subject Code: **P2CHE12**

In this course the students will

| | |
|---|---|
| **CO1:** | The basic concepts of communication systems. |
| **CO2:** | The basics and applications of valence bond theory in chemistry. |

## Semester II

Subject Name: **Organic Chemistry II**

Subject Code: **P2CHC21**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting mastery over UV, IR and NMR spectroscopies. |
| **CO2:** | Understanding the basics of addition reactions. |
| **CO3:** | Understanding the mechanism of aliphatic and aromatic substitution reactions. |
| **CO4:** | Studying the mechanism of elimination reactions. |
| **CO5:** | Studying the relationship between conformation and reactivity of organic molecules. |
| **CO6:** | Learning the spectral interpretation. |

Subject Name: **Inorganic Chemistry II**

Subject Code: **P2CHC22**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the structure and applications of metal carbonyls. |
| **CO2:** | Understanding the reaction mechanism of coordination compounds. |
| **CO3:** | Studying the molecular rearrangement reactions of coordination complexes. |
| **CO4:** | Knowing the fundamentals of organometallic catalysis. |

Subject Name: **Physical Chemistry - II**

Subject Code: **P2CHC23**

In this course the students will

| | |
|---|---|
| **CO1:** | Getting mastery over group theory. |
| **CO2:** | Overview about polymer chemistry, catalytic and fast reaction. |

Subject Name: **Industrial Chemistry**

Subject Code: **P1CHN21**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the role of chemistry in industry. |
| **CO2:** | Studying raw materials and energy for chemical industries, water conditioners. |
| **CO3:** | Small and large scale chemical process industries. |

Subject Name: **Food Chemistry**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding food additives. |
| **CO2:** | Studying the energy values of various foods. |

Subject Name: **Organic Chemistry Practical I**

Subject Code: **P2CHC2P1**

In this course the students will

| | |
|---|---|
| **CO1:** | Preparing some organic compounds and to practice the separation of mixtures of organic compounds. |
| **CO2:** | Estimating some organic compounds with reference to their functional groups. |

Subject Name: **LAB: Inorganic Chemistry Practical I**

Subject Code: **P2CHC2P2**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the basic idea behind the separation of cations. |
| **CO2:** | Understanding the fundamentals of inorganic qualitative and quantitative analysis. |

Subject Name: **LAB: Physical Chemistry Practical I**

Subject Code: **P2CHC2P3**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the applications of conductometric and potentiometric experiments. |
| **CO2:** | Knowing the fundamental concepts of reaction dynamics. |

**II M.Sc Chemistry**

**Semester -III**

Subject Name: **Organic Chemistry-III**

Subject Code: **P1CHC31**

In this course the students will

| | |
|---|---|
| **CO1:** | Planning and execution of organic synthesis. |
| **CO2:** | Understanding the photochemical, oxidation, reduction and rearrangement reactions. |
| **CO3:** | Studying the reagents in organic synthesis. |

Subject Name: **Inorganic Chemistry- III**

Subject Code: **P2CHC32**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the importance of bio-inorganic compounds in biological system. |
| **CO2:** | Getting mastery over electronic spectra, NMR, EPR and Mossbauer spectra. |
| **CO3:** | Understanding the nuclear chemistry in details. |

Subject Name: **Physical Chemistry-III**

Subject Code: **P1CHC33**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the fundamentals & applications of electrochemistry and statistical thermodynamics. |
| **CO2:** | Learning microwave, infra-red and electronic spectral techniques. |

Subject Name: **Analytical Methods in Chemistry**

Subject Code: **P2CHC34**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding the fundamental, and applications of electroanalytical and thermoanalytical techniques. |
| **CO2:** | Studying the importance of various spectroanalytical techniques. |

Subject Name: **Medicinal and Pharmaceutical Chemistry**

Subject Code: **P1CHE31**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning fundamentals of medicinal chemistry. |
| **CO2:** | Understanding drug action. |
| **CO3:** | Studying the preparation, mechanism, action and applications of various types of drugs. |

Subject Name: **Polymer chemistry**

Subject Code: **P1CHE32**

In this course the students will

| | |
|---|---|
| **CO1:** | Understanding classifications & properties of different polymers. |
| **CO2:** | Learning uses of polymers. |
| **CO3:** | Studying various polymerization techniques. |

**Semester -IV**

Subject Name: **Organic Chemistry - IV**

Subject Code: **P1CHC41**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning retrosynthesis aspects. |
| **CO2:** | Understanding the structural elucidation of heterocycles, alkaloids, terpenoids and steroids. |
| **CO3:** | Learning ORD, CD & chromatographic techniques. |
| **CO4:** | Acquiring basic knowledge in green chemistry. |

Subject Name: **Inorganic Chemistry- IV**

Subject Code: **P2CHC42**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying lanthanides and actinides. |
| **CO2:** | Learning solid state chemistry in details. |
| **CO3:** | Studying the role of photochemistry in inorganic chemistry. |

Subject Name: **Physical Chemistry –IV**

Subject Code: **P1CHC43**

In this course the students will

| | |
|---|---|
| **CO1:** | Learning the physical chemistry background for various spectral techniques. |
| **CO2:** | Understanding fundamental concepts of colloids and surface chemistry. |
| **CO3:** | Getting a detailed outlook of photochemistry. |
| **CO4:** | Studying the role of physical aspects in some biological process. |

Subject Name: **LAB: Organic Chemistry Practical II**

Subject Code: **P1CHC4P1**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the basics of separation and analysis of mixture of organic compounds. |
| **CO2:** | Learning the interpretation of the UV, IR and NMR spectra of organic compounds. |

Subject Name: **Inorganic Chemistry Practical II**

Subject Code: **P1CHC4P2**

In this course the students will

| | |
|---|---|
| **CO1:** | Practicing the quantitative estimation of more than one cation opting volumetric and gravimetric estimations. |
| **CO2:** | Training the preparation of simple co-ordination compounds. |
| **CO3:** | Studying the basics of photo colorimetric estimation of metals. |

**Self Learning Course**

Subject Name: **Applied Chemistry**

Subject Code:

In this course the students will

| | |
|---|---|
| **CO1:** | Studying the adequate knowledge about the fuels. |
| **CO2:** | Learning the advantages of safety matches. |
| **CO3:** | Knowing the determination of acid value. |

**M.Phill Chemistry**

**Semester - I**

Subject Name: **RESEARCH METHODOLOGY**

Subject Code: **M2CHC11**

In this course the students will

| | |
|---|---|
| **CO1:** | Searching literature from various sources. |
| **CO2:** | Instrumentation of NMR, Cyclic voltammetry, Chromatography, XRD. |
| **CO3:** | Learn supramolecular chemistry and its applications. |

Subject Name: **COURSE WORK**

Subject Code: **M2CHC12**

In this course the students will

| | |
|---|---|
| **CO1:** | Learn organic synthesis and retrosynthetic analytical aspects. |
| **CO2:** | Get mastery over group theory and its application to UV, IR and Raman spectroscopies. |
| **CO3:** | Study metal complexes binding with DNA and hence anticancer drug study. |
| **CO4:** | Learn magnetic properties and EPR spectral study of complexes and their applications. |
| **CO5:** | Understand nanochemistry and its applications. |

Subject Name: **ADVANCED ORGANIC CHEMISTRY**

Subject Code: **M1CHE11**

In this course the students will

| | |
|---|---|
| **CO1:** | Learn retrosynthetic analytical aspects. |
| **CO2:** | Understand various addition reactions and transition metal mediated reactions. |
| **CO3:** | Study about enolates and their applications. |

Subject Name: **ADVANCED INORGANIC CHEMISTRY**

Subject Code: **M1CHE12**

In this course the students will

| | |
|---|---|
| **CO1:** | Study organometallics and inorganic polymers. |
| **CO2:** | Understand the concepts of polyacids and their applications. |

Subject Name: **ADVANCED PHYSICAL CHEMISTRY**

Subject Code: **M1CHE13**

In this course the students will

| | |
|---|---|
| **CO1:** | Studying advanced chemical kinetics and also photocatalytic reactions. |
| **CO2:** | Learning biophysical aspects. |
| **CO3:** | Studying computational quantum mechanics. |
| **CO4:** | Nano particles applications. |

Subject Name: **DISSERTATION AND VIVA-VOCE**

Subject Code: **M1CH2PV**

In this course the students will

| | |
|---|---|
| **CO1:** | Will know the systematic processing of research problem under supervisor and submitting dissertation (thesis) in support of candidature for M.Phil degree. |
| **CO2:** | Will be Presenting research and findings i.e dissertation / thesis to the examiners. |