Department of Chemistry

Programme Outcomes (U.G)

- After persuing B.Sc course (B.Z.C,M.P.C &.B.CCS) students will gain both Theoretical and Practical knowledge in chemistry and able to handle with chemicals.
- With the knowledge of chemistry, students can get placements in private pharmaceuticals as well as in government services like health inspector, pharmacist , lab assistant etc.
- Students will aquire the skills, which are required to succeed in getting employment and is the chemical industries like cement, paint , rubber,food processing & fertilizer industries etc.
- Mainly This programme is useful for the students of biotechnology(B.B.C) to work with the structures of biomolecules and their interactive relations to the environment.
- Students will gain knowledge of experimental techniques of modern instrumentation used in industries.
- Students can understand the importance of the elements in the periodic table including their physical and chemical nature and their role in with daily life.
- Understand the concept of chemistry to inter relate with other subject like Mathematics, Physics, zoology, Botany etc.
- Students will learn safe and secure measures when doing experiments in laboratory.

Course Outcomes (U.G)

Semester-I -Paper-I Inorganic and Physical Chemistry

1.To make student understand the modern periodic table which stand the backbone in understanding Chemistry and the periodic properties like Atomic and Ionic size Ionization Energy Electron Affinity Electro negativity and making student understand the P-Blockelements of Group 13&14 Elements in a periodic table.
2.They know the Classification ,Nomenclature of Organo metallic compounds.
Physical chemistry is the branch of chemistry which supports in different ways to understand the subject theoretically which needs the help of certain tools and the mathematical tools are important amongst it thus understanding the mathematical ideas the subject can be better enriched
3.The drugs may used any of the states of the matter like solid, liquid, gaseous state.

Semester-II- Paper-II Organic and General chemistry

1. Students become eligible to study the subject initially by understanding the basic things for chemical reactions i.e. Substrate and Reagents Types of reagents Electrophilic and Nucleophilic Homolytic and heterolytic fission & Inductive effect etc.
.Many of the daily used materials are organic compounds and majority of them are hydrocarbons therefore this topic makes the concept regarding their formation.
They know about the Basic of the alkenes and alkynes and describe the structure of Benzene with respect to the chemical point of view.

2.The research and the development has evolved to the level high and as a result of that the human life standard has thus enhanced day by day medicinal, infrastructural home utilities etc facilities like.
3.In majority of the daily routine thing used for its surface utilization and therefore understanding the surface phenomenon.
4. The students will gain Knowledge about Different types of Hybridisation.and also the concept of Hydrogen bonding and describe the MOT Theory of Homo and Hetero Atomic molecules. the importance of optical isomerism and understand the terms of Enantiomers, Diastereomers and Meso compounds.

Semester-III- Paper-III Organic chemistry and Spectroscopy

1.The students will be an Understand the distinguish aliphatic and aromatic halogenated organic compounds and they know the preparation methods for the halogenated organic compounds.The students will Understand the interpret reactivity of aldehydes and ketones.

2.The students write different preparation methods for carboxylic acids and their derivatives.and also understand the design reactions of carboxylic acids and their derivatives of active metylene compounds.
3.The students will gain an understand the Spectroscopy and how to analyzed the unknown organic compounds by using instrumentation of spectrophotometers of IR spectroscopy Electronic spectroscopy and proton magnetic resonance spectroscopy.
4.. The fundamentals of electronic structure and bonding in conjugated and aromatic systems by using Electronic spectroscopy

Semester-IV- Paper-IV Inorganic,Organic & Physical Chemistry

1. The students will gain an understand how to classify of coordination compounds,Valence.
2. Describe the electronic selection rules and correlate the intensity and wavelength of Coordination geometry
3. Students will be provided with an introduction to the fundamentals of electrochemistry and solution properties. And understand how simple ions added to aqueous solution affect the structure of water.
4. The students Understand why a solution conducts electricity and how it can be measured.and the relationship between the cell potential, and also how to measure a standard electrode potential using a standard reference electrode.
5. Defines the importance of phase diagrams in the field of material science. And define the importance of basic definitions Phase,Equilibrium,Component,Degree of freedom and phase rule concept.

Semester-IV - Paper-V- Inorganic,Physical and Organic Chemistry

1. The students will gain an understand how to classify of coordination compounds,Valencebond theory,Hybridisation.
2. Describe the electronic selction rules and correlate the intensity and wavelength of Coordinationgeometry.
3. The students will gain an understand the classification and nomenclature &named reactions of nitro hydrocarbons.
4. They know the nomenclature,classification of primary,secondry,tertiary &quaternary amines and its synthesis and applications of nitrogen compounds.
5. Students will gain an understanding of the first law of Thermodynamics and how to express its mathematical application and calculate energy.

Semester-V - Paper-VI- D- Environmental Chemistry

1. Understand the environment functions and how it is affected by human activities.

2. Acquire chemical knowledge to ensure sustainable use of the world's resources and ecosystems services.

3. Engage in simple and advanced analytical tools used to measure the different types of pollution.

4. Explain the energy crisis and different aspects of sustainability.

5. Analyze key ethical challenges concerning biodiversity and understand the moral principles, goals and virtues important for guiding decisions that affect Earth's plant and animal life.

Semester-V - Paper-VII- D- Green chemistry and Nanotecnology

1. Understand the importance of Green chemistry and Green synthesis.

2. Engage in Microwave assisted organic synthesis.

3. Demonstrate skills using the alternative green solvents in synthesis.

4. Demonstrate and explain enzymatic catalysis.

5.Analyse alternative sources of energy and carry out green synthesis.

6. Carry out the chemical method of nanomaterial synthesis.