



DEPARTMENT OF CHEMISTRY

COURSE OUTCOMES

SEMESTER – I

Course I (Inorganic & Physical Chemistry)

Paper Code: 20C1302A

Course outcomes:

At the end of the course, the student will be able to;

1. Understand the basic concepts of p-block elements
2. Explain the difference between solid, liquid and gases interms of inter molecular interactions.
3. Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses.

LABORATORY COURSE -I

Practical-I Analysis of SALT MIXTURE

Paper Code: 20C1302AP

Course outcomes:

At the end of the course, the student will be able to;

1. Understand the basic concepts of qualitative analysis of inorganic mixture
2. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
3. Apply the concepts of common ion effect, solubility product and concepts related to qualitative analysis



SEMESTER – II

Course II – (Organic & General Chemistry)

Paper Code: 20C2302A

Course outcomes:

At the end of the course, the student will be able to;

1. Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.
2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
3. Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.
4. Correlate and describe the stereo chemical properties of organic compounds and reactions.

LABORATORY COURSE-II

Practical-II Volumetric Analysis

Paper Code: 20C2302AP

At the end of the course, the student will be able to;

1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. Understand and explain the volumetric analysis based on fundamental concepts learnt in ionic equilibria
3. Learn and identify the concepts of a standard solutions, primary and secondary standards
4. Facilitate the learner to make solutions of various molar concentrations. This may include: The concept of the mole; Converting moles to grams; Converting grams to moles; Defining concentration; Dilution of Solutions; Making different molar concentrations.



SEMESTER - III

Course III (ORGANIC CHEMISTRY & SPECTROSCOPY)

Paper Code: 20C3302A

Course outcomes:

At the end of the course, the student will be able to;

1. Understand preparation, properties and reactions of halo alkanes, halo arenes and oxygen containing functional groups.
2. Use the synthetic chemistry learnt in this course to do functional group transformations.
3. To propose plausible mechanisms for any relevant reaction

LABORATORY COURSE -III

Practical Course-III Organic preparations and IR Spectral Analysis

Paper Code: 20C3302A

Course outcomes:

On the completion of the course, the student will be able to do the following:

1. how to use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. how to calculate limiting reagent, theoretical yield, and percent yield
3. how to engage in safe laboratory practices by handling laboratory glassware, equipment, and chemical reagents appropriately
4. how to dispose of chemicals in a safe and responsible manner
5. how to perform common laboratory techniques including reflux, distillation, re crystallization, vacuum filtration.
6. how to create and carry out work up and separation procedures
7. how to critically evaluate data collected to determine the identity, purity, and percent yield of products and to summarize findings in writing in a clear and concise manner



SEMESTER - IV

Course IV (INORGANIC, ORGANIC AND PHYSICAL CHEMISTRY)

Paper Code: 20C4302A

Course outcomes:

At the end of the course, the student will be able to;

1. To learn about the laws of absorption of light energy by molecules and the subsequent photochemical reactions.
2. To understand the concept of quantum efficiency and mechanisms of photochemical reactions.

LABORATORY COURSE -IV

Practical Course-IV Organic Qualitative analysis

Paper Code: 20C4302AP

Course outcomes:

At the end of the course, the student will be able to;

1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. Determine melting and boiling points of organic compounds
3. Understand the application of concepts of different organic reactions studied in theory part of organic chemistry



SEMESTER - IV

Course V (INORGANIC & PHYSICAL CHEMISTRY)

Paper Code: 20C4302B

Course outcomes:

At the end of the course, the student will be able to;

1. Understand concepts Of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values
2. Application of quantization to spectroscopy.
3. Various types of spectra and the irusein structure determination.

SEMESTER - IV

LABORATORY COURSE

Practical-Course –V Conductometric and Potentiometric Titrimetry

Paper Code: 20C4302B

Course outcomes:

At the end of the course, the student will be able to;

1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. Apply concepts of electrochemistry in experiments
3. Be familiar with electro analytical methods and techniques in analytical chemistry which study an analyte by measuring the potential (volts) and/or current (amperes) in an electrochemical cell containing the analyte



Semester-V

Course6-B: Analytical Methods in Chemistry-1

Paper Code: 20C53026B

I. Learning Outcomes:

Students after successful completion of the course will be able to:

1. Identify the importance of solvent extraction and ion exchange method.
2. Acquire knowledge on the basic principles of volumetric analysis and gravimetric analysis.
3. Demonstrate the usage of common laboratory apparatus used in quantitative analysis.
4. Understand the theories of different types of titrations.
5. Gain knowledge on different types of errors and their minimization methods.

Course6-B: Analytical methods in chemistry-1-PRACTICALSYLLABUS

Paper Code: 20C53026BP

II. Learning Outcomes:

On successful completion of this practical course, student shall be able to:

1. Estimate Iron(II) using standard Potassium dichromate solution
2. Learn the procedure for the estimation of total hardness of water
3. Demonstrate the determination of chloride using Mohr's method
4. Acquire skills in the operation and calibration of pH meter
5. Perform the strong acid vs strong base titration using pH meter



Semester-V

Course 7-B: Analytical Methods in Chemistry-2

Paper Code: 20C53027B

I. Learning Outcomes:

Students after successful completion of the course will be able to:

1. Identify the importance of chromatography in the separation and identification of compounds in a mixture
2. Acquire a critical knowledge on various chromatographic techniques.
3. Demonstrate skills related to analysis of water using different techniques.
4. Understand the principles of spectro chemistry in the determination of metal ions.
5. Comprehend the applications of atomic spectroscopy.

Course 7-B: Analytical Methods in Chemistry-2- PRACTICAL SYLLABUS

Paper Code: 20C53027BP

V. Learning Outcomes:

On successful completion of this practical course, student shall be able to:

1. Perform the separation of a given dye mixture using TLC
2. Learn the preparation of TLC plates
3. Demonstrate the separation of mixture of amino acids using paper chromatography
4. Acquire skills in using column chromatography for the separation of dye mixture