

**M.Sc.Chemistry – I,II,III & IV Semesters**

<b>Code</b>	<b>Course Name</b>	<b>Course Outcomes</b>
<b>M.Sc.Chemistry – I Semester</b>		
<b>PCHT11</b>	<b>Organic Chemistry–I</b>	<p>Upon completing the course, the students will be able</p> <p>Identify the different types of reactive intermediates and appreciate their importance in organic reactions</p> <p>Understanding the various mechanisms of organic reactions</p> <p>Understand and apply the concepts of stereochemistry</p> <p>Identify aromatic, non-aromatic and anti-aromatic compounds</p>
<b>PCHT12</b>	<b>Inorganic Chemistry –I</b>	<p>On learning the course, the students will be able to</p> <p>Understand the principles of various bonding theories and identify the structure and bonding of simple molecules.</p> <p>Recognize the various types of solid state packing and the types of chemical forces</p> <p>the structure and bonding of main group elements and their compounds</p> <p>to appreciate the existence and application of polymeric inorganic compounds</p>
<b>PCHT13</b>	<b>Physical Chemistry - I</b>	<p>On learning the course, the students will be able to</p> <p>Calculate change in thermodynamic properties, equilibrium constants, partial molar quantities, chemical potential.</p>

		<p>Identify factors affecting equilibrium constant.</p> <p>Understand and appreciate the advanced concepts and rate equations in chemical kinetics.</p> <p>Understand and apply the concepts and laws of electrochemistry and photochemistry</p>
<b>PCHP11</b>	<b>Organic Chemistry Practicals</b>	<p>On learning the course, the students will be able to</p> <ol style="list-style-type: none"> <li>1. Understand in basic chromatographic methods.</li> <li>2. Learn simple extraction techniques</li> <li>3. Develop skill in simple organic synthesis</li> <li>4. Understand and develop the principles of quantitative and qualitative analysis of organic compounds.</li> </ol>
<b>PCHE11</b>	<b>Medicinal Chemistry And Drug Design</b>	<p>On learning the course, the students will be able to</p> <p>Comprehend and apply the concept of molecular modeling</p> <p>Perform quantum chemical calculations</p> <p>Appreciate the importance of bio-organic compound and bio- inorganic compounds in medicine</p> <p>Understand the structure and mechanism of action of drugs.</p>

Code	Course Name	Course Outcomes
<b>M.Sc.Chemistry – II Semester</b>		
<b>PCHT21</b>	<b>Organic Chemistry – II</b>	<p>On learning the course, the students will be able to</p> <p>Evaluate the stability of various conformers of acyclic and cyclic systems using steric, electronic and stereoelectronic effects and correlate them to reactivity.</p> <p>Use various models for determining stereoselectivity of various organic transformation</p> <p>Understand and apply the various reagents in organic synthesis and design organic synthetic reactions.</p> <p>Apply asymmetric transformations in a logical manner for the synthesis of chiral molecules.</p>
<b>PCHT22</b>	<b>Inorganic Chemistry – II</b>	<p>On learning the course, the students will be able to</p> <p>Identify the bonding, structure and reactivity of selected coordination complexes</p> <p>Interpret their electronic spectra and magnetic properties.</p> <p>Utilize the principles of transition metal coordination complexes in understanding functions of biological systems.</p> <p>Understand the bonding , structure and applications of organometallic compounds</p>
<b>PCHT23</b>	<b>Physical Chemistry – II</b>	<p>On learning the course, the students will be able to</p> <p>Solve the model problems in quantum mechanics and analyze the basis behind the postulatory method of quantum mechanics</p> <p>apply time independent perturbation theory to complex problems of molecular energy levels</p> <p>Appreciate and apply the principles of green chemistry and polymer chemistry</p>

		Understand and appreciate the importance of the reactions in surface and catalysis
<b>PCHP21</b>	<b>Inorganic Chemistry Practicals</b>	On learning the course, the students will be able to  Identify less common metal ions.  .Estimate metal ions through complexometric titrations.  Estimate metal ions through redox titrations.  Estimate metal ion through spectrophotometry
<b>PCHE22</b>	<b>Analytical Techniques</b>	On learning the course, the students will be able to  Apply various chromatographic techniques for separation and analysis of compounds  Understand and apply the different types of electroanalytical techniques  .Apply AAS, XRD analytical techniques for compound identification and characterization.  Apply thermogravimetric techniques for characterization of compounds

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<b>M.Sc.Chemistry – III Semester</b>		
<b>PCHT31</b>	<b>Organic Chemistry – III</b>	Understand the basic concepts of photochemistry and various organic photochemical reactions

		<p>Understand pericyclic reactions</p> <p>Apply NMR, IR, MS, UV-Vis spectroscopic techniques in solving structure of organic molecules and in determination of their stereochemistry.</p> <p>Interpret the above spectroscopic data of unknown compounds.</p>
<b>PCHT32</b>	<b>Inorganic Chemistry – III</b>	<p>On learning the course, the students will be able to Analyze inorganic compounds using various spectroscopic techniques.</p> <p>Understand the principles and applications of nuclear reactions</p> <p>Familiarize the important inorganic photochemical reactions.</p> <p>Apply the knowledge gained in the above concepts.</p>
<b>PCHT33</b>	<b>Physical Chemistry – III</b>	<p>On learning the course, the students will be able to</p> <p>Determine the symmetry operations of any small and medium-sized molecule and apply point group theory to the study of hybridization and spectroscopy.</p> <p>Have a sound knowledge of the theories behind various spectroscopic techniques</p> <p>Apply the concepts of statistical thermodynamics for the study of equilibrium reactions.</p> <p>Understand to apply the concepts of statistical thermodynamics for the study of reaction rates.</p>
<b>PCHP33</b>	<b>Physical Chemistry Practicals</b>	<p>On learning the course, the students will be able to. Explain the principle behind the experiments</p> <p>Plan and Perform experiments</p> <p>Interpret experimental results</p> <p>Perform estimation through conductometry and</p>

		potentiometry
<b>PCHE33</b>	<b>Environmental Chemistry and Green Chemistry</b>	On learning the course, the students will be able to Identify environmental problems related to pollution Identify and utilize eco-friendly methods to protect environment, Understand and apply green chemical methods Solve the problems related to environmental pollution

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<b>M.Sc.Chemistry – IV Semester</b>		
<b>PCHT41</b>	<b>Chemistry Of Natural Products And Bioinorganic Chemistry</b>	On learning the course, the students will be able to  Understand the structure of organic natural products.  Identify the structures of metalloproteins and metalloenzymes.  Appreciate the importance of natural products and bio-inorganic compounds.  Know and appreciate the importance of chemistry of nature.
<b>PCHT42</b>	<b>Nanochemistry And Supramolecular Chemistry</b>	On learning the course the students will be able to  Appreciate the importance of Nanoscience and Technology.  Familiarize the synthetic techniques and applications of Nanomaterials.  Comprehend the concept of Supramolecular chemistry and its applications  Apply the knowledge gained in the above concepts.
<b>PCHP43</b>	<b>Project Work</b>	On learning the course, the students will be able to  Analyze the existing problems for which research

		<p>can provide solutions and Select the problem for research</p> <p>Know the various chemical publishers, journals and perform literature survey</p> <p>Synthesize new chemical compounds through various methods</p> <p>Characterize the compounds using various analytical and spectroscopical studies</p>
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