

# Programme Outcomes: B. Sc. Chemistry

## Chemistry (Semester-III)

<b>Department of chemistry</b>	After successful completion of three year degree program in Chemistry a student should be able to;
<b>Programme Outcomes</b>	<ol style="list-style-type: none"> <li>1. Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.</li> <li>2. Solve the problem and also think methodically, independently and draw a logical conclusion.</li> <li>3. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.</li> <li>4. Create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community.</li> <li>5. To inculcate the scientific temperament in the students and outside the scientific community.</li> <li>6. Use modern techniques, decent equipments and Chemistry software's</li> </ol>
<b>Programme Specific Outcomes</b>	<ol style="list-style-type: none"> <li>1. Gain the knowledge of Chemistry through theory and practical's.</li> <li>2. To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.</li> <li>3. Identify chemical formulae and solve numerical problems.</li> <li>4. Understand good laboratory practices and safety.</li> <li>5. make aware and handle the sophisticated instruments/equipments</li> </ol>
<b>Course B. Sc Chemistry Semester-I</b>	
<b>Course</b>	CHEMISTRY DSC2A: Atomic Structure , Bonding, General organic chemistry and Aliphatic hydrocarbons Theory: 60 Lectures Section A: Inorganic chemistry-I Section B: Organic chemistry-I  CHEMISTRY LAB: DSC 2A LAB: Atomic

	<p>Structure , Bonding, General organic chemistry and Aliphatic hydrocarbons 60 Lectures Section A: Inorganic chemistry Section B: Organic chemistry</p>
<p><b>Course B. Sc Chemistry</b> <b>Semester-II</b></p>	
<b>Course</b>	<p>CHEMISTRY-DSC 2B: CHEMICAL ENERGETICS, EQUILIBRIA &amp; FUNCTIONAL ORGANIC CHEMISTRY (Credits: Theory-04, Practicals-02) Theory: 60 Lectures <i>Section A: Physical Chemistry-1 (30 Lectures)</i> <i>Section B: Organic Chemistry-2 (30 Lectures)</i> CHEMISTRY LAB- DSC 2B LAB: CHEMICAL ENERGETICS, EQUILIBRIA &amp; FUNCTIONAL ORGANIC CHEMISTRY 60 Lectures <i>Section A: Physical Chemistry</i> <i>Section B: Organic Chemistry</i></p>
<p><b>Course B. Sc Chemistry</b> <b>Semester-III</b></p>	
<b>Course</b>	<p>CHEMISTRY-DSC 2C: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL GROUP ORGANIC CHEMISTRY-II (Credits: Theory-04, Practicals-02) Theory: 60 Lectures <i>Section A: Physical Chemistry-2 (30 Lectures)</i> <i>Section B: Organic Chemistry-3 (30 Lectures)</i> CHEMISTRY LAB-DSC 2C LAB: SOLUTIONS, PHASE EQUILIBRIUM, CONDUCTANCE, ELECTROCHEMISTRY &amp; FUNCTIONAL ORGANIC CHEMISTRY-II 60 Lectures <i>Section A: Physical Chemistry</i> <i>Section B: Organic Chemistry</i></p>
<p><b>Course B. Sc Chemistry</b> <b>Semester-IV</b></p>	
<b>Course</b>	<p>CHEMISTRY-DSC 2D: COORDINATION CHEMISTRY, STATES OF MATTER &amp; CHEMICAL KINETICS (Credits: Theory-04, Practicals-02) Theory: 60 Lectures <i>Section A: Inorganic Chemistry-3 (30 Lectures)</i></p>



	<p><i>Section B: Physical Chemistry-3 (30 Lectures)</i>  CHEMISTRY LAB-DSC 2D LAB: COORDINATION CHEMISTRY, STATES OF MATTER &amp; CHEMICAL KINETICS  60 Lectures  <i>Section A: Inorganic Chemistry</i>  <i>Section B: Physical Chemistry</i></p>
<b>Course B. Sc Chemistry</b> <b>Semester-V</b>	
<b>Course</b>	CHEMISTRY-DSE: ANALYTICAL METHODS IN CHEMISTRY (Credits: Theory-04, Practicals-02) Theory: 60 Lectures DSE LAB: ANALYTICAL METHODS IN CHEMISTRY (60 Lectures) SKILL ENHANCEMENT COURSE BASIC ANALYTICAL CHEMISTRY (Credits: 02) 30 Lectures
<b>Course B. Sc Chemistry</b> <b>Semester-VI</b>	
<b>Course</b>	DSE: ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY (Credits: Theory-04, Practicals-02) Theory: 60 Lectures <i>Section A: Inorganic Chemistry-4 (30 Lectures)</i> <i>Section B: Organic Chemistry-4 (30 Lectures)</i> DSE LAB : 60 Lectures <i>Section A: Inorganic Chemistry</i> <i>Section B: Organic Chemistry</i> SKILL ENHANCEMENT COURSE GREEN METHODS IN CHEMISTRY (Credits: 02) Theory: 30 Lectures
<b>Department of Chemistry</b>	After successful completion of two year degree program in chemistry a student should be able to;
<b>Programme Outcomes</b>	<ol style="list-style-type: none"> <li>1. Determine molecular structure by using UV, IR and NMR.</li> <li>2. Study of medicinal chemistry for lead compound.</li> <li>3. Synthesis of Natural products by using proper mechanisms.</li> <li>4. Study of Asymmetric synthesis.</li> <li>5. Determine the aromaticity of different</li> </ol>

Programme Specific Outcomes	compounds
	<ol style="list-style-type: none"> <li>1. Know the structure and bonding in molecules/ ions and predict the Structure of molecule/ions.</li> <li>2. Understand the various type of aliphatic, aromatic, nucleophilic substitution reaction.</li> <li>3. Understand and apply principles of Organic Chemistry for understanding the scientific phenomenon in Reaction mechanisms.</li> <li>4. Learn the Familiar name reactions and their reaction mechanisms.</li> <li>5. Understand good laboratory practices and safety.</li> <li>6. Study of organometallic reactions.</li> <li>7. Study of free radical, bicyclic compound, conjugate addition of Enolates and pericyclic reactions.</li> <li>8. Study of biological mechanisms using amino acids</li> </ol>

**Course M. Sc. Organic Chemistry  
Semester-I**

<b>Course</b>	PAPER I- Inorganic Chemistry I	C001
	PAPER II- Organic Chemistry	C002
	PAPER III- Physical Chemistry	C003
	PAPER IV- Group theory and spectroscopy	C004
	Lab. Course IA	C005
	Lab. Course IB	C006

**Course M. Sc. Organic Chemistry  
Semester-II**

<b>Course</b>	PAPER I- Inorganic Chemistry II	C007
	PAPER II- Organic Chemistry II	C008
	PAPER III- Physical Chemistry II	C009
	PAPER IV- Spectroscopy & Separation methods	C010
	Lab. Course IA	C011
	Lab. Course IB	C012

**Course M. Sc. Organic Chemistry  
Semester-III**

<b>Course</b>	Organic Synthesis & Photochemistry	C018
	Bioorganic, Bioorganic & Bio.	E002
	Physical Chemistry I	
	Spectroscopy & Solid State	E005
	Organometallic reagents and	E006
	Organic Synthesis	
	Spectroscopy X-ray & Solid State (Self Study)	E001
	Laboratory course- Organic IIIA	C016
Laboratory course- Organic IIIB	C017	



**Course Outcomes M. Sc. Organic Chemistry  
Semester-IV**

<b>Course</b>		
	Natural Products	C027
	Spectroscopy	E009
	Bioinorganic, Bioorganic and	E010
	Biophysical Chemistry II	
	Environmental Chemistry	E012
	Laboratory course- Organic IVA	C025
	Laboratory course- Organic IVB	C026