

**Curriculum for Two-Year M. Sc. Program in Chemistry**

<b>Semester : 1</b>				
<b>Minimum Semester Credit Required : 25 Cumulative Semester Credit Required : 25</b>				
<b>Subject Type</b>	<b>Subject No.</b>	<b>Subject Name</b>	<b>L-T-P</b>	<b>Credits</b>
		Mathematics for Chemists	2-0-0	2
DEPTH	<b>CY41009</b>	Introduction to Quantum Chemistry	3-1-0	4
DEPTH	<b>CY41011</b>	Principles of Organic Synthesis	3-1-0	4
DEPTH	<b>CY41005</b>	Inorganic Chemistry: Principles, Structure and Reactivity	3-0-0	3
DEPTH	<b>CY41012</b>	Thermodynamics and Kinetics	3-0-0	3
	<b>CY41018</b>	Structures and Function of Biomolecules	3-0-0	3
DEPTH	<b>CY49001</b>	Advanced Inorganic Chemistry Laboratory	0-0-6	3
DEPTH	<b>CY49011</b>	Advanced Organic Chemistry Laboratory	0-0-6	3
		<b>Total</b>		<b>25</b>

<b>Semester : 2</b>				
<b>Minimum Semester Credit Required : 26 Cumulative Semester Credit Required : 51</b>				
<b>Group Theory For Chemists</b>	<b>Subject No.</b>	<b>Subject Name</b>	<b>L-T-P</b>	<b>Credits</b>
DEPTH	<b>CY49008</b>	Advanced Physical Chemistry Lab.	0-0-6	3
DEPTH	<b>CY41016</b>	Analytical and Environmental Chemistry	3-0-0	3
DEPTH	<b>CY40014</b>	Introduction to Computational Chemistry	3-1-0	4
DEPTH	<b>CY58010</b>	Comprehensive	0-0-0	2
DEPTH	<b>CY41007</b>	Group Theory and Spectroscopy	4-0-0	4
DEPTH	<b>CY41014</b>	Principles of Organometallics and Bioinorganic Chemistry	4-0-0	4
DEPTH	<b>CY50033</b>	Solid State Chemistry	3-0-0	3
DEPTH	<b>CY49006</b>	Biochemical Techniques Laboratory	0-0-6	3
		<b>Total</b>		<b>26</b>

<b>Semester : 3</b>				
<b>Minimum Semester Credit Required : 23 Cumulative Semester Credit Required : 74</b>				
<b>Subject Type</b>	<b>Subject No.</b>	<b>Subject Name</b>	<b>L-T-P</b>	<b>Credits</b>
DEPTH	<b>CY51003</b>	Spectroscopic Methods of Structure Determination	3-1-0	4
DEPTH	<b>CY57005</b>	Project	0-0-12	8
DEPTH	<b>CY58003</b>	Seminar	0-0-3	2
<u>ELECTIVE-I</u>		<u>Elective-I</u>		
<u>ELECTIVE-II</u>		<u>Elective-II</u>		
<u>ELECTIVE-III</u>		<u>Elective-III</u>		
		<b>Total</b>		<b>14</b>

<b>Semester : 4</b>				
<b>Minimum Semester Credit Required : 18 Cumulative Semester Credit Required : 92</b>				
<b>Subject Type</b>	<b>Subject No.</b>	<b>Subject Name</b>	<b>L-T-P</b>	<b>Credits</b>
DEPTH	<b>CY58006</b>	Comprehensive Viva Voce	0-0-0	2
DEPTH	<b>CY57006</b>	Project and Viva	0-0-15	10
<u>ELECTIVE-IV</u>		<u>Elective-IV</u>		
<u>ELECTIVE-V</u>		<u>Elective-V</u>		
		<b>Total</b>		<b>12</b>

**Total Credits: 92**

## LIST OF ELECTIVES

### List of Available Subjects for Elective II (FLEXI)

Subject No	Subject Name	L-T-P	Credit
MM60010	Biomaterials-Tissue Interactions	3-0-0	3
NT70002	Introduction to Nano-Science and Technology	4-0-0	4
TS62002	Quantum Methods in Molecular Simulations	2-0-3	4
CS61060	Computational Biophysics: Algorithms to Applications	3-1-0	4
CY50102	Physical Chemistry of Surfaces	3-0-0	3
CY50104	Molecular Photochemistry	3-0-0	3
CY50106	Electrochemical Methods of Analysis	3-0-0	3
CY50108	Medicinal Inorganic Chemistry	3-0-0	3
CY50110	Techniques for Organic Synthesis	3-0-0	3
CY50112	Enzymes in Organic Synthesis		

**List of Available Subjects for Elective I, II, III**

<b>Subject No</b>	<b>Subject Name</b>	<b>L-T-P</b>	<b>Credit</b>
<b>CY71003</b>	Chemistry of Natural Products	3-1-0	4
<b>MM61207</b>	Fundamentals of Biomaterials and Living Matter	3-1-0	4
<b>BT60007</b>	Computational Structural Biology	3-0-0	3
<b>CS61060</b>	Computational Biophysics: Algorithms to Applications	3-1-0	4
<b>CY60002</b>	Adsorption and Catalysis	3-0-0	3
<b>CY60003</b>	Organic Photochemistry and Pericyclic Reactions	3-0-0	3
<b>CY60004</b>	Biophysical Chemistry	3-0-0	3
<b>CY60005</b>	Drug Design And Development	3-0-0	3
<b>CY60011</b>	Environmental Chemistry and Advances in Green Chemistry	3-0-0	3
<b>CY60013</b>	Bio-Inorganic Chemistry	3-0-0	3
<b>CY60019</b>	Electroanalysis and Sensor	3-0-0	3
<b>CY60030</b>	Inorganic Photochemistry	3-0-0	3
<b>CY60103</b>	Statistical Mechanics for Chemists	3-0-0	3
<b>CY60105</b>	Advanced Quantum Chemistry	3-0-0	3
<b>CY60107</b>	Chemistry of Nanomaterials	3-0-0	3
<b>CY60111</b>	Advanced Stereochemistry	3-0-0	3
<b>CY60113</b>	Agrochemicals	3-0-0	3
<b>CY60115</b>	Biotransformation in Organic Chemistry	3-0-0	3
<b>CY60117</b>	Reagents in Organic Synthesis	3-0-0	3
<b>CY60119</b>	Physical Organic Chemistry	3-0-0	3
<b>CY60121</b>	Chemistry of Materials	3-0-0	3
<b>CY61019</b>	Special Topics in Main Group Chemistry		
	Materials for Electronics and Energy	3-0-0	3
	Medicinal Biochemistry		

**List of Available Subjects for Electives IV, V**

<b>Subject No</b>	<b>Subject Name</b>	<b>L-T-P</b>	<b>Credit</b>
<b>CY71006</b>	Crystal Structure Methods	3-1-0	4
<b>CY71008</b>	Chemistry Of Lipids, Steroids and Hormones	3-1-0	4
<b>MM60010</b>	Biomaterials	3-0-0	3
<b>PH61004</b>	Electron Paramagnetic Resonance in Materials	3-1-0	4
<b>TS62002</b>	Quantum Methods in Molecular Simulations	2-0-3	4
<b>CS61060</b>	Computational Biophysics: Algorithms to Applications	3-1-0	4
<b>CY61001</b>	Advanced Polymer Chemistry	3-0-0	3
<b>CY61004</b>	Advanced Chemical Dynamics	3-0-0	3
<b>CY61006</b>	Applications of Fluorescence Spectroscopy in Chemistry And Biology	3-0-0	3
<b>CY61010</b>	Chemical Bonding and Reactivity	3-0-0	3
<b>CY61016</b>	Metals in Catalysis	3-0-0	3
<b>CY61020</b>	Recent Advances in Analytical Chemistry	3-0-0	3
<b>CY61022</b>	Synthesis and Processing of Ceramics	3-0-0	3
<b>CY61030</b>	Medicinal Chemistry	3-0-0	3
<b>CY61032</b>	Asymmetric Synthesis	3-0-0	3
<b>CY61034</b>	Organometallic Strategies in Organic Synthesis	3-0-0	3
<b>CY61036</b>	Pharmacological Basis of Therapeutics	3-0-0	3
<b>CY61038</b>	Supramolecular Chemistry	3-0-0	3
<b>CY61040</b>	Advanced Heterocyclic Chemistry	3-0-0	3
<b>CY61042</b>	Colloids and Drug Delivery	3-0-0	3
<b>CY61046</b>	Physical Methods in Inorganic Chemistry	3-0-0	3
<b>CY61048</b>	Chemistry Of Nucleosides And Nucleotides	3-0-0	3
<b>CY61050</b>	Metal Complexes in Catalysis And Material Science	3-0-0	3
<b>CY71002</b>	Structure Analysis by Spectroscopic and Crystallographic Studies	3-1-0	4
	Chemical Dynamics	3-0-0	3