

## Master of Science (Chemistry)

Curriculum Version 1.00

(For AY2026-27 onwards)

Credit distribution among baskets (Minimum Credits to be earned = 80)		
Sl. No.	Baskets	Credit Contribution
1	School Core	12
2	Program Core	35
3	Discipline Elective	27
	Common Electives Basket	15
	Specialized Elective Baskets*	12
4	Open Elective	6
	<b>TOTAL CREDITS</b>	<b>80</b>

Specialized Elective Baskets*		
Sl.No.	Name of the Basket	Minimum Credit Requirement
1	Advanced Organic Chemistry	
2	Analytical and Instrumental Chemistry	
3	Advanced Inorganic Chemistry	
4	Materials Science	
	Total*	12
* Remaining Credits, if any, to satisfy Specialized Elective Baskets credit requirement can be taken from any Specialized Elective Basket		

Sl. No.	Course Code	Course Name	L	P	Credits
<b>I. School Core - Minimum Credits to be earned from this basket (A+B+C+D+E) =</b>					<b>12</b>
A	CHE6001	Research Paper	-	-	2
B	CHE6002	M.Sc. Dissertation	-	-	4
<b>C. Computational Skills Basket - Min. credits to be earned from this basket =</b>					<b>2</b>
1	CSE1021	Python Programming	0	4	2
2	CSE5010	Advanced Python	0	4	2
3	CSE1019	Programming in C	0	4	2
<b>D. English Basket - Min. credits to be earned from this basket =</b>					<b>2</b>
1	ENG5001	English Language and Communication Skills	0	2	1
2	ENG5002	Technical Proficiency and Career Building	0	2	1
<b>E. Soft Skills Basket - Min. credits to be earned from this basket =</b>					<b>2</b>
1	SSK2002	Being Corporate Ready	0	2	1
2	SSK3003	Introduction to Soft Skills	0	2	1
3	SSK3004	Beyond Technical Skills	0	2	1
3	SSK3005	Leadership and Career Acceleration	0	2	1

<b>II. Program Core - Minimum Credits to be earned from this basket =</b>					<b>35</b>
1	CHE5001	Organic Reactions and Mechanisms	3	2	4
2	CHE5002	Advanced Organic Reactions and Mechanisms	3	0	3
3	CHE5003	Coordination Chemistry	3	2	4
4	CHE5004	Molecular Spectroscopy: Theory and Instrumentation	3	2	4
5	CHE5005	Chemical Thermodynamics and Kinetics	3	2	4
6	CHE5006	Quantum Chemistry	3	0	3
7	CHE5007	Surface and Solid State Chemistry	3	0	3
8	CHE5008	Advanced Analytical and Instrumental Chemistry	3	2	4
9	CHE5009	Computational Chemistry	2	2	3
10	CHE5010	Advanced Stereochemistry	3	0	3
<b>III. Discipline Electives - Minimum Credits to be earned from both Common and Specialized elective baskets (3A+3B) =</b>					<b>27</b>
<b>IIIA. Common Electives Basket - Minimum Credits to be earned from this basket =</b>					<b>15</b>
1	MAT5009	Applied Statistics using R	2	2	3
2	CHE5011	Chemistry of Nanomaterials	3	2	4
3	CHE5012	Photochemistry and Pericyclic Reactions	3	0	3
4	CHE5013	AIML in Molecular Modelling and Chemical Reactions	3	2	4
5	CHE5014	Chemistry of Biomolecules	3	0	3
6	CHE5015	Bio-Organic Chemistry	3	0	3
7	CHE5016	Chemistry of Fabrics	2	0	2
8	CHE5017	Bio-Inorganic Chemistry	3	0	3
9	CHE5018	Nuclear and Radiochemistry	3	2	4
10	CHE5019	Catalysis in Industrial Processes	2	0	2
11	CHE5020	Electrochemistry for Energy Conversion and Storage	3	2	4

IIIB. Specialized Electives Baskets -			Minimum Credits to be earned =			12
<b>(i) Advanced Organic Chemistry</b>						
1	CHE5021	Important Name Reactions in Organic Synthesis	3	0	3	
2	CHE5022	Asymmetric Synthesis and Stereoselective Reactions	3	0	3	
3	CHE5023	Spectroscopic Analysis of Organic Molecules	2	2	3	
4	CHE5024	Chemistry of Natural Products	2	2	3	
5	CHE5025	Chemistry of Heterocyclic compounds	2	2	3	
<b>(ii) Analytical and Instrumental Chemistry</b>						
1	CHE5026	Advanced Spectroscopic Techniques	2	2	3	
2	CHE5027	Chromatography and Separation Techniques	2	2	3	
3	CHE5028	Electroanalytical Chemistry	2	2	3	
4	CHE5029	Sensor-Based Analytical Techniques	3	0	3	
5	CHE5030	Quality Control in Analytical Chemistry	3	0	3	
<b>(iii) Advanced Inorganic Chemistry</b>						
1	CHE5031	Group Theory and its Applications in Chemistry	3	0	3	
2	CHE5032	Organometallic Chemistry	3	0	3	
3	CHE5033	Chemistry of Semiconductor Materials	3	0	3	
4	CHE5034	Reaction Mechanisms in Inorganic Chemistry	2	2	3	
5	CHE5035	Crystal Field and Ligand Field Theory	3	0	3	
<b>(iv). Materials Science</b>						
1	CHE5036	Fabrication of Advanced Materials	2	2	3	
2	PHY6022	Computational Material Science	2	2	3	
3	PHY6023	Low Dimensional Materials	3	0	3	
4	PHY6024	Advanced Materials Characterization	3	0	3	
5	CHE5037	Photovoltaic Materials	3	0	3	
6	CHE5038	Energy Storage Systems	3	0	3	

4. Open Elective basket - Minimum Credits to be earned from this basket	6
Any course from <b>another</b> 'eligible' curriculum	
Any <b>unused</b> Discipline Elective from his/ her 'own' curriculum	
Any <b>stand-alone</b> course declared as "Open Elective" by School/ Dept. for a specific 'eligible' degree program	
School approved <b>NPTEL/Swayam</b> courses for a maximum of 3 credits	