

M.Sc Chemistry Curriculum 2025-27

Semester -I

S. No.	Course Type	Course Title	L	T	P	C
1	Discipline Core 1	Stereochemistry & Reaction mechanisms	4	0	2	6
2	Discipline Core 2	Advanced Inorganic Chemistry and Spectroscopy	3	0	2	5
3	Discipline Core 3	Chemical Dynamics and Interface Science	4	0	2	6
4	Discipline Core 4	Advanced Analytical Chemistry: Principles, Techniques, and Applications	3	0	1	4
5	University Core 1	Professional Communication	0	0	2	2
		Total	15	0	8	23

Semester -II

S. No.	Course Type	Course Title	L	T	P	C
1	Discipline Core 5	Organic Spectroscopy	4	0	0	4
2	Discipline Core 6	Reaction mechanism and Group theory	3	0	0	3
3	Discipline Core 7	Quantum Chemistry and Molecular Spectroscopy	4	0	2	6
4	Discipline Core 8	Advanced Analytical Separation and Instrumental Techniques	3	0	2	5
5	Discipline Core 9	Computer Applications for chemistry	1	0	1	2
6	Elective 1	Elective 1	3	0	0	3
		Total	18	0	5	23

Semester –III (Inorganic Chemistry Specialization)

S. No.	Course Type	Course Title	L	T	P	C
1	DSE 1	Organometallic Chemistry and Applications	4	0	1	5
2	DSE 2	Spectroscopic techniques in Inorganic Chemistry	4	0	1	5
3	DSE 3	Bio-Inorganic Chemistry	4	0	1	5
4	Elective 2	Elective 2	3	0	0	3
5	University Core 2	Research Methodology	2	0	0	2
6	University Core 3	Research, Innovation & IPR	2	0	0	2
		Total	19	0	3	22

Semester –III (Organic Chemistry Specialization)

S. No.	Course Type	Course Title	L	T	P	C
1	DSE 1	Photo chemistry & Pericyclic reaction	4	0	1	5

2	DSE 2	Reagents and Heterocyclic Chemistry	4	0	1	5
3	DSE 3	Chemistry of Natural Products and Retrosynthesis	4	0	1	5
4	Elective 2	Elective 2	3	0	0	<u>3</u>
5	University Core 2	Research Methodology	2	0	0	2
6	University Core 3	Research, Innovation & IPR	2	0	0	2
		Total	19	0	5	22

Semester –III (Physical Chemistry Specialization)

S. No.	Course Type	Course Title	L	T	P	C
1	DSE 1	Applied Electrochemistry	4	0	2	5
2	DSE 2	Chemical Kinetics and Surface Chemistry	4	0	2	5
3	DSE 3	Molecular Spectroscopy	4	0	2	5
4	Elective 2	Elective 2	3	0	0	<u>3</u>
5	University Core 2	Research Methodology	2	0	0	2
6	University Core 3	Research, Innovation & IPR	2	0	0	2
		Total	19	0	5	22

Semester –III (Analytical Chemistry Specialization)

S. No.	Course Type	Course Title	L	T	P	C
1	DSE 1	Electroanalytical methods	4	0	2	5
2	DSE 2	Quality control and quality assurance	4	0	2	5
3	DSE 3	Advanced Instrumentation methods	4	0	2	5
4	Elective 2	Elective 2	3	0	0	<u>3</u>
5	University Core 2	Research Methodology	2	0	0	2
6	University Core 3	Research, Innovation & IPR	2	0	0	2
		Total	19	0	5	22

Semester -IV

S. No.	Course Type	Course Title	L	T	P	C
1	Project	Project	0	0	0	12
		Total	0	0	0	12

List of Elective I

S. No		Name of the Electives	L	T	P	C
1	Elective 1	Polymer chemistry	3	0	0	3

2	<i>Elective 1</i>	<i>Industrial chemistry</i>	3	0	0	3
3	<i>Elective 1</i>	<i>Solid State chemistry</i>	3	0	0	3
4	<i>Elective 1</i>	<i>Environmental analytical chemistry</i>	3	0	0	3

List of Elective II

S. No		Name of the Electives				
			L	T	P	C
1	<i>Elective 2</i>	<i>Bio-organic Chemistry</i>	3	0	0	3
2	<i>Elective 2</i>	<i>Advanced Green Chemistry</i>	3	0	0	3
3	<i>Elective 2</i>	<i>Carbon Materials</i>	3	0	0	3
4	<i>Elective 2</i>	<i>Advance Metallurgical Sciences</i>	3	0	0	3
5	<i>Elective 2</i>	<i>Industrial Biochemistry</i>	3	0	0	3

M. Sc One year (Organic chemistry)- Sem I

S. No.	Course Type	Course Title	L	T	P	C
1	<i>DSE 1</i>	Photo chemistry & Pericyclic reaction	4	0	1	5
2	<i>DSE 2</i>	Reagents and Heterocyclic Chemistry	4	0	1	5
3	<i>DSE 3</i>	Chemistry of Natural Products and Retrosynthesis	4	0	1	5
4	<i>Elective 1</i>	Elective-1	3	0	0	3
5	<i>Elective-1</i>	Elective 2	3	0	0	3
6	<i>University Core I</i>	Professional Communication	1	0	1	2
		TOTAL	19	0	4	23

M. Sc. One year (Inorganic chemistry) Sem I

S. No.	Course Type	Course Title	L	T	P	C
1	<i>DSE 1</i>	Organometallic Chemistry	4	0	1	5
2	<i>DSE 2</i>	Spectroscopic techniques in Inorganic Chemistry	4	0	1	5
3	<i>DSE 3</i>	Bio-Inorganic Chemistry	4	0	1	5
4	<i>Elective 1</i>	Elective-1	3	0	0	3
5	<i>Elective-1</i>	Elective 2	3	0	0	3
6	<i>University Core I</i>	Professional Communication	1	0	1	2
		TOTAL	19	0	4	23

M. Sc One year (Physical Chemistry) - Sem I

S.No.	Course Type	Course Title	L	T	P	C
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1	DSE 1	Applied Electrochemistry	4	0	1	5
2	DSE 2	Chemical Kinetics and Surface Chemistry	4	0	1	5
3	DSE 3	Molecular Spectroscopy	4	0	1	5
4	Elective 1	Elective-1	3	0	0	3
5	Elective-1	Elective 2	3	0	0	3
6	University Core I	Professional Communication	1	0	1	2
		TOTAL	19	0	4	23

M. Sc One year (Analytical chemistry)- Sem I

S. No.	Course Type	Course Title	L	T	P	C
1	DSE 1	Electroanalytical methods	4	0	1	5
2	DSE 2	Quality control and quality assurance	4	0	1	5
3	DSE 3	Advanced Instrumentation methods	4	0	1	5
4	Elective 1	Elective-1	3	0	0	3
5	Elective-1	Elective 2	3	0	0	3
6	University Core I	Professional Communication	1	0	1	2
		TOTAL	19	0	4	23

Semester -II

S. No.	Course Code	Course Title	L	T	P	C
1	Project	Project	0	0	0	14
2	University Core 2	Research Methodology	2	0	0	2
3	University Core 3	Research, Innovation & IPR	1	0	0	1
		Total	3	0	0	17

List of Elective I

S. No		Name of the Electives	L	T	P	C
1	Elective 1	Polymer chemistry	3	0	0	3
2	Elective 1	Industrial chemistry	3	0	0	3
3	Elective 1	Solid State chemistry	3	0	0	3
4	Elective 1	Environmental analytical chemistry	3	0	0	3

<i>List of Elective II</i>							
<i>S. No</i>		<i>Name of the Electives</i>					
			<i>L</i>	<i>T</i>	<i>P</i>	<i>C</i>	
<i>1</i>	<i>Elective 2</i>	<i>Bio-organic Chemistry</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>3</i>	
<i>2</i>	<i>Elective 2</i>	<i>Advanced Green Chemistry</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>3</i>	
<i>3</i>	<i>Elective 2</i>	<i>Carbon Materials</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>3</i>	
<i>4</i>	<i>Elective 2</i>	<i>Advance Metallurgical Sciences</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>3</i>	
<i>1</i>	<i>Elective 2</i>	<i>Industrial Biochemistry</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>3</i>	