

PERIYAR MANIAMMAI INSTITUTE OF SCIENCE & TECHNOLOGY

FACULTY OF SCIENCE AND HUMANITIES

DEPARTMENT OF CHEMISTRY

M.Sc. Chemistry

CURRICULUM - REGULATIONS 2024

Category of courses and minimum credit requirement as per new guidelines of UGC for M.Sc. Chemistry programme are outlined below:

Sl. No.	Course Category	Credits
1.	Foundation Courses	04
2.	Programme Core Courses	42
3.	Programme Elective Courses	12
4.	Online Courses	03
5.	Employability Enhancement Courses (Internship / Field Visit / Professional Practices /Project / Research / Thesis / Dissertation)	23
6.	Value Added/Value Addition Courses (IKS, Community Engagement	07
	Total Credits	91

SEMESTER I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	P24CH101	Chemistry Essentials: Organic, Inorganic Compounds and States of Matter	3	1	0	4
2	P24CH102	Organic Reactions and Stereochemistry Fundamentals	3	1	0	4
3	P24CH103	Inorganic Materials	3	0	0	3
4	P24CH104	Physical Methods in Chemistry	3	1	0	4
5	P24CH105	Analytical Chemistry	3	1	0	4
6	P24CH9XX	Programme Elective – I	3	0	0	3
Practical						
7	P24CH106	Qualitative and Quantitative Inorganic Analysis Laboratory	0	0	4	2
Total			18	4	4	24

SEMESTER II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	P24CH151	Coordination Chemistry	3	1	0	4
2	P24CH152	Chemical Dynamics and Electrochemistry	3	1	0	4
3	P24CH153	Inorganic Spectroscopy	3	1	0	4
4	P24CH9XX	Programme Elective - II	3	0	0	3
5	P24RD001	Research Methodology	3	0	0	3
Practical						
6	P24CH154	Kinetics and Phase Equilibria Laboratory	0	0	4	2
7	P24CH155	Electrochemistry Laboratory	0	0	4	2
Internship / Field Visit						
8	P24VA002	Community Engagement and Social Responsibility	1	0	2	2
Total			16	3	10	24

SEMESTER III

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	P24CH201	Organic Reagents and Natural Products	3	1	0	4
2	P24CH202	Chemistry of Nanomaterials	3	0	0	3
3	P24CH203	Quantum Chemistry	3	1	0	4
4	P24CH9XX	Programme Elective - III	3	0	0	3
5	P24VA013	Metallurgical Heritage	3	0	0	3
Practical						
6	P24CH204	Organic Chemistry Laboratory: Qualitative Analysis and Synthesis	0	0	4	2
7	P24CH205	Computer Applications in Chemistry Laboratory	0	0	4	2
Internship / Project						
8	P24EM201	Internship	0	0	4	2
Total			15	2	12	23

SEMESTER IV

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	P24CH8XX	Online Course	3	0	0	3
2	P24CH9XX	Programme Elective - IV	3	0	0	3
3	P24VA001	Cyber Security	2	0	0	2
Project Work						
4	P24EM252	Project / Dissertation	0	0	24	12
Total			8	0	24	20

Suggested List of Courses for Programme Elective – I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH901	Material Chemistry	3	0	0	3
2	P24CH902	Green Chemistry	3	0	0	3
3	P24CH903	Chemistry of Natural Products	3	0	0	3

Suggested List of Courses for Programme Elective – II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH951	Environmental Chemistry	3	0	0	3
2	P24CH952	Biology for Chemists	3	0	0	3
3	P24CH953	Macromolecular Chemistry	3	0	0	3

Suggested List of Courses for Programme Elective – III

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH904	Environmental, Industrial Analytical Chemistry	3	0	0	3
2	P24CH905	Bio Physical Chemistry	3	0	0	3
3	P24CH906	Polymers	3	0	0	3

Suggested List of Courses for Programme Elective – IV

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH954	Solid State Chemistry	3	0	0	3
2	P24CH955	Applications of Green Chemistry	3	0	0	3
3	P24CH956	Phyto Chemistry	3	0	0	3

**Credit wise Distribution (In all Categories of Courses)
M.Sc. Chemistry**

Sl.No.	Course Category	Sem. I	Sem. II	Sem. III	Sem. IV	Total Credits
1.	Foundation Courses	04	-	-	-	04
2.	Programme Core Courses	13	16	13	-	42
3.	Programme Elective Courses	03	03	03	03	12
4.	Open Elective Courses (Online)	-	-	-	03	03
5.	Employability Enhancement Courses (Internship / Field Visit / Professional Practices / Project / Research / Thesis / Dissertation)	04	03	04	12	23
6.	Value Added / Value Addition Courses (IKS, Community Engagement)	-	02	03	02	07
Total Credits		23	24	23	20	91

List of Courses under each Category

Foundation Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH101	Chemistry Essentials: Organic, Inorganic Compounds and States of Matter	3	1	0	4
Total			3	1	0	4

Major (Core)

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH102	Organic Reactions and Stereochemistry Fundamentals	3	1	0	4
2	P24CH103	Inorganic Materials	3	0	0	3
3	P24CH105	Analytical Chemistry	3	1	0	4
4	P24CH106	Qualitative and Quantitative Inorganic Analysis Laboratory	0	0	4	2
5	P24CH151	Coordination Chemistry	3	1	0	4
6	P24CH152	Chemical Dynamics and Electrochemistry	3	1	0	4
7	P24CH153	Inorganic Spectroscopy	3	1	0	4
8	P24CH154	Kinetics and Phase Equilibria Laboratory	0	0	4	2
9	P24CH155	Electrochemistry Laboratory	0	0	4	2
10	P24CH201	Organic Reagents and Natural Products	3	1	0	4
11	P24CH202	Chemistry of Nanomaterials	3	0	0	3
12	P24CH203	Quantum Chemistry	3	1	0	4
13	P24CH204	Organic Chemistry Laboratory: Qualitative Analysis and Synthesis	0	0	4	2
Total			27	7	16	42

Value Added Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24VA002	Community Engagement and Social Responsibility	1	0	2	2
2	P24VA013	Metallurgical Heritage	3	0	0	3
3	P24VA001	Cyber Security	2	0	0	2
Total			6	0	2	7

Employability Enhancement Courses

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24CH104	Physical Methods in Chemistry	3	1	0	4
2	P24CH205	Computer Applications in Chemistry Laboratory	0	0	4	2
3	P24RD001	Research Methodology	3	0	0	3
Total			6	1	4	9

Internship

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24EM201	Internship	0	0	4	2
Total			0	0	4	2

Research Project / Dissertation

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	P24EM252	Project / Dissertation	0	0	24	12
Total			0	0	24	12