

Indian Institute of Technology Palakkad

Curriculum

Program : Master of Science

Stream : Chemistry

Year : 2025 Onwards



The credit requirement of the program is as follows:

Credit requirements:

Category of the course	Credits
Program Major Core (PMC)	48
Program Major Electives (PME)	6
Project Based Courses	8
Open Electives (OE)	6
Communication Skills	1
Technical Writing	1
Total	70

The list of PMC's with their credits is given below:

S No.	Course Name	Credits
1	Basic Quantum Chemistry	3
2	Symmetry and Group Theory	3
3	Stereochemistry & Physical Organic Chemistry	3
4	Main Group Chemistry	3
5	Organic Reaction mechanisms	3
6	Inorganic lab	2
7	Electrochemistry and Kinetics	3
8	Molecular Spectroscopy	3
9	Organic Synthesis	3

10	Chemistry of Transition and Inner Transition Elements	3
11	Chemistry of Materials	3
12	Organic Chemistry lab	2
13	Physical and Computational lab	2
14	Classical and Statistical Thermodynamics	3
15	Biochemistry	3
16	Basic Organometallic Chemistry	3
17	Elucidation of Molecular structure	3

The list of project-based courses with their credits is given below:

1	Project	8
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To guide the students towards arriving at a feasible ordering of courses, a course plan is proposed below. It is not mandatory to follow this plan. Multiple variations of this plan may be possible. However, students need to ensure that the credit requirements as mentioned in the table above are met. While this system allows flexibility for students to take courses in an order different from that mentioned below, the constraint that prerequisites for each course have to be cleared in advance to be able to take it, necessitates a judicious choice to complete the program within the expected time frame.

Semester I

No.	Code	Course Title	L	T	P	C	Category
1		Basic Quantum Chemistry	3	0	0	3	PMC
2		Symmetry and Group Theory	3	0	0	3	PMC
3		Stereochemistry & Physical Organic Chemistry	3	0	0	3	PMC
4		Main Group Chemistry	3	0	0	3	PMC
5		Organic Reaction mechanisms	3	0	0	3	PMC
6		Inorganic lab	0	0	3	2	PMC
7		Communication Skills	0	0	0	1	
		Semester Total	16	0	3	18	

Semester II

No.	Code	Course Title	L	T	P	C	Category
1		Electrochemistry and Kinetics	3	0	0	3	PMC
2		Molecular Spectroscopy	3	0	0	3	PMC
3		Organic Synthesis	3	0	0	3	PMC
4		Chemistry of Transition and Inner Transition Elements	3	0	0	3	PMC
5		Chemistry of Materials	3	0	0	3	PMC
6		Organic Chemistry lab	0	0	3	2	PMC
7		Physical and Computational lab	0	0	3	2	PMC
8		Technical writing				1	
Semester Total			15	0	6	20	

Semester III

No.	Code	Course Title	L	T	P	C	Category
1		Classical and Statistical Thermodynamics	3	0	0	3	PMC
2		Biochemistry	3	0	0	3	PMC
3		Basic Organometallic Chemistry	3	0	0	3	PMC
4		Elucidation of Molecular structure	3	0	0	3	PMC
5		Project	0	0	3	2	Project
6		Elective I	3	0	0	3	PME/ OE
Semester Total			15	0	3	17	

Semester IV

No.	Code	Course Title	L	T	P	C	Category
1		Elective II	3	0	0	3	PME/OE
2		Elective III	3	0	0	3	PME/OE
3		Elective IV	3	0	0	3	PME/OE
4		Project	0	0	9	6	Project
Semester Total			9	0	9	15	