

## Indian Institute of Technology Palakkad

### Curriculum

**Program : Master of Technology**  
**Stream : Manufacturing and Materials Engineering**  
**Year : 2024 Onwards**



IIT PALAKKAD

#### Introduction:

The primary aim of this M. Tech program is to prepare graduate students with the skills needed to tackle challenges in research and industries focused on manufacturing and materials. Additionally, the program emphasizes on enhancing research abilities and fostering a passion for pursuing doctoral studies. Core courses include Advanced Engineering Materials, Advanced Manufacturing Processes, Mechanics of Machining, Computer Integrated Manufacturing, Mechanical Behaviour of Materials, and Computer Aided Metrology. Electives in the curriculum offer specialized knowledge tailored to individual interests. The first two semesters involve extensive coursework, while the third and fourth semesters are dedicated to project work.

The credit requirement of the program is as follows:

#### Credit requirements :

Category of the course	Credits
Program Major Core (PMC)	24
Program Major Electives (PME)	6
Project Based Courses	22
Open Electives (OE)	6
Humanities and Social Sciences Elective (HSE)	0
Communication Skills	1
Technical Writing	1
<b>Total</b>	<b>60</b>

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

S No.	Course Name	Credits
1	Advanced Engineering Materials	3
2	Modern Manufacturing Processes	3
3	Mechanics of Machining	3
4	Digital Manufacturing	3
5	Mechanical Behaviour of Materials	3
6	Computer Aided Metrology	3
7	Manufacturing Processes & Material Characterisation Laboratory	3
8	Modelling and Simulation Laboratory	3

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.	Course code	Course Title	L	T	P	C	Category
1	ME5007	Advanced Engineering Materials	3	0	0	3	PMC
2	ME5005	Modern Manufacturing Processes	3	0	0	3	PMC
3	ME5013	Mechanics of Machining	3	0	0	3	PMC
4	ME5009	Digital Manufacturing	3	0	0	3	PMC

5	ME5012	Manufacturing Processes and Characterisation Laboratory	1	0	2	3	PMC
6	MEXXXX	Open Elective 1	3	0	0	3	OE
7	GNXXXX	Communication skills	1	0	0	1	Institute Common Course (ICC)
		Semester Total				19	

### Semester II

No.	Course code	Course Title	L	T	P	C	Category
1	ME5004	Mechanical Behaviour of Materials	3	0	0	3	PMC
2	ME5002	Computer Aided Metrology	3	0	0	3	PMC
3	ME5101	Modelling and Simulation Laboratory	1	0	2	3	PMC
4	MEXXXX	Professional Major Elective 1	3	0	0	3	PME
5	MEXXXX	Professional Major Elective 2	3	0	0	3	PME
6	MEXXXX	Open Elective 2	3	0	0	3	OE
7	GNXXXX	Technical Writing	1	0	0	1	Institute Common Course (ICC)
		Semester Total				19	

### Semester III

No.	Course code	Course Title	L	T	P	C	Category
1	ME5110	MTP Stage 1	0	0	0	10	Project
		Semester Total				10	

### Semester IV

No.	Course code	Course Title	L	T	P	C	Category
1	ME5120	MTP Stage 2	0	0	0	12	Project
		Semester Total				12	

A list of approved PME's can be found below:

S No.	Course Name	Credits
1	Additive Manufacturing	3
2	Advanced Finishing Technologies	3
3	Advanced Heat Transfer	3
4	Welding Technology	3
5	Material Characterisation	3
6	Fundamentals of micro-nano manufacturing	3
7	Mechanics of Composite Materials	3