DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Additive and Joining Technologies)**
Department : **Department of Mechanical and Industrial Engineering**
Year : **I**
Model : **2**

Teaching Scheme					**Contact Hours/Week**			**Exam Duration**	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	MIC-501	Measurements and Instrumentation	PCC	4	3	0	2	3	0
2.	MIC-503	Finite Element Methods	PCC	4	3	0	2	3	0
3.	MIC-505	Numerical Methods for Engineers	PCC	4	3	1	0	3	0
4.	MIC-507	Continuum Mechanics	PCC	4	3	1	0	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.		Program Elective-II	PEC	4	-	-	-	-	-
3.		Program Elective-III	PEC	4	-	-	-	-	-
4.		Program Elective-IV	PEC	4	-	-	-	-	-
5.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
6.	MIC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**21**					

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Program Code : **XXX M.Tech. (Additive and Joining Technologies)**
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Year : **II**
Model : **2**

Teaching Scheme					**Contact Hours/Week**			**Exam Duration**	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	MIC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	MIC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**13**					
Semester-II (Spring)									
1.	MIC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		**14**					

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	18	21	13	14
Total Credits	**66**			

M.Tech. (Additive and Joining Technologies)

Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
1.	MIL-601	Additive Manufacturing	PEC	4	3	1	2/2	3	0
2.	MIL-613	Fusion Joining Technologies	PEC	4	3	1	2/2	3	0
3.	MIL-614	Solid State Joining Technologies	PEC	4	3	1	2/2	3	0
4.	MIL-615	Material Characterization & Testing	PEC	4	3	1	2/2	3	0
5.	MIL-599	Surface Engineering	PEC	4	3	1	2/2	3	0
6.	MIL-610	Laser Material Processing	PEC	4	3	1	0	3	0
7.	MIL-622	Metallurgical Aspects in Joining and Additive Manufacturing	PEC	4	3	1	2/2	3	0
8.	MIL-624	Design and Analysis of Joints	PEC	4	3	1	2/2	3	0
9.	MIL-501	Failure Analysis and Prevention Joints	PEC	4	3	1	2/2	3	0
10.	MIL-627	Hybrid Joining Technologies	PEC	3	2	1	0	3	0
11.	MIL-629	Reverse Engineering and Rapid Tooling	PEC	3	2	0	2/2	3	0
12.	MIL-631	Dissimilar Metal Joining	PEC	4	3	1	0	3	0
Students should mandatorily earn a minimum of 3 credits from practical components in a program. These practical components can be part of a course or a dedicated practical /laboratory course.									

M.Tech. (Additive and Joining Technologies)

Science, Technology, and Advanced Research-tools Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	MIT-501	Value Engineering	STAR	3	2	1	0	3	0