DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

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

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
Semester-I (Autumn)														
1.	MAN-501C	Probability and statistics	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2.	MIN-601	Additive Manufacturing	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
3.	MIN-613	Fusion Joining technologies	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
4.	MIN-614	Solid State Joining Technologies	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
5.	MIN-615	Material Characterization & Testing	PCC	4	3	1	2/2	3	0	15-30	20	15-25	30-40	-
		Total		**20**										
Semester-II (Spring)														
1.		Program Elective-I	PEC	4	-	-	-	-	-	-	-	-	-	-
2.		Program Elective-II	PEC	4	-	-	-	-	-	-	-	-	-	-
3.		Program Elective-III	PEC	3/4	-	-	-	-	-	-	-	-	-	-
4.		Program Elective-IV	PEC	3/4	-	-	-	-	-	-	-	-	-	-
5.	MIN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
		Total		**16-18**										

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Program Code: **XX** **M.Tech. (Additive and Joining Technologies)**
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Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
Semester-I (Autumn)														
1.	MIN-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		**12**										
Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.														
Semester-II (Spring)														
1.	MIN-701B	Dissertation Stage-II (continued from III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		**18**										

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	**20**	**16-18**	**12**	**18**
Total Credits	**66-68**			

Program Elective Courses M.Tech. (Additive and Joining Technologies)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	MIN-598	Weldability of Metals	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
2.	MIN-599	Surface Engineering	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
3.	MIN-606	Numerical Methods in Manufacturing	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
4.	MIN-610	Laser Material Processing	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
5.	MIN-621	Instrumentation and Experimental Methods	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
6..	MIN-622	Metallurgical aspects in joining and additive manufacturing	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
7.	MIN-623	Inspection and testing for quality assurance	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
8.	MIN-624	Design and analysis of joints	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
9.	MIN-625	Safety analysis of metallic joints	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
10.	MIN-626	Failure Analysis and prevention	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
11.	MIN-627	Hybrid joining technologies	PEC	3	2	1	0	2	-	20-35	-	20-30	40-50	-
12.	MIN-628	FEM for manufacturing processes	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
13.	MIN-629	Reverse engineering and rapid tooling	PEC	3	2	0	2/2	2	-	15-30	20	15-25	30-40	-
14.	MIN-630	Residual stress and distortion	PEC	3	2	1	0	2	-	20-35	-	20-30	40-50	-
15.	MIN-631	Dissimilar metal joining	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-