

**DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: **39** **M.Tech. (Industrial Metallurgy)**
 Department: **MT** **Metallurgical and Materials 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.	MA-501F	Numerical Methods, Probability and Statistics	PCC	4	3	1	0	3	0	25	-	25	50	-	
2.	MTN-501	Structure of Materials	PCC	4	3	1	0	3	0	25	-	25	50	-	
3.	MTN-503	Characterization of Materials	PCC	4	3	0	2	3	0	15	25	20	40	-	
4.		Program Elective-I	PEC	4	3	1	0	3	0	25	-	25	50	-	
5.		Program Elective-II	PEC	4	3	1	0	3	0	25	-	25	50	-	
		Total		20	9	2	2								
Semester-II (Spring)															
1.	MTN-502	Modelling, Simulation and Computer Applications	PCC	4	3	0	2	3	0	15	25	20	40	-	
2.	MTN-504	Phase Transformation	PCC	4	3	1	0	3	0	25	-	25	50	-	
3.	MTN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-	
4.		Program Elective-III	PEC	4	3	1	0	3	0	25	-	25	50	-	
5.		Program Elective-IV	PEC	4	3	1	0	3	0	25	-	25	50	-	
		Total		18	6	1	2								

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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.	MTN-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.	MTN-701B	Dissertation Stage-II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

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

Program Elective Courses (Industrial Metallurgy)

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
Electives I-II (Autumn)														
1.	MTN-505	Non Destructive testing	PEC	4	3	1	0	3	0	25	-	25	50	-
2.	MTN-507	Casting and Solidification	PEC	4	3	1	0	3	0	25	-	25	50	-
3.	MTN-512	Joining of Materials	PEC	4	3	1	0	3	0	25	-	25	50	-
4.	MTN-518	Theory of Metal Forming	PEC	4	3	1	0	3	0	25	-	25	50	-
5.	MTN-522	Composite Materials	PEC	4	3	1	0	3	0	25	-	25	50	-
Electives III-IV (Spring)														
6.	MTN-514	Powder Metallurgy	PEC	4	3	1	0	3	0	25	-	25	50	-
7.	MTN-516	Principles of Materials Selection	PEC	4	3	1	0	3	0	25	-	25	50	-
8.	MTN-526	Failure Analysis	PEC	4	3	1	0	3	0	25	-	25	50	-
9.	MTN-528	Tribology of Engineering Materials	PEC	4	3	1	0	3	0	25	-	25	50	-
10.	MTN-532	Corrosion Protection Methods	PEC	4	3	1	0	3	0	25	-	25	50	-