

M. Tech in Material Science and Technology

SCHEME OF STUDY (wef July 2021)

First Semester:

Course No.	Subject	Scheme of studies period per week			Total Credits
		L	T	P	
MTH 511	Advanced Mathematics	3	-	-	3
MS 511	Advanced Thermodynamics of Materials	3	-	-	3
MS 512	Advanced Physical Metallurgy	3	-	-	3
MS 513	Advanced Characterization Techniques	3	-	-	3
HUM 511	Communication Skills	2	-	-	2
	Elective-1 (A)	3	-		3
	Elective-2 (A)	3	-		3
MS 514	Materials Characterization Lab.	-	-	2	1
MS 515	Seminar-1	-	-	2	1
Total hours: 24 Total Credits: 22		Total Semester Credits			22

Second Semester:

Course No.	Subject	Scheme of studies period per week			Total Credits
		L	T	P	
MS 521	Advanced Materials Processing	3	-	-	3
MS 522	Deformation Behavior of Materials	3	-	-	3
MS 523	Phase Equilibria and Phase Transformations	3	-	-	3
	Elective-3 (A)	3	-		3
	Elective-4 (A)	3	-		3
	Elective-5 (C)	3	-		3
MS 524	Research Methodology	1	1	-	2
MS 525	Materials Processing lab	-	-	2	1
MS 526	Seminar-2	-	-	2	1
Total hours: 24 Total Credits: 44		Total Semester Credits			22

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Third Semester:

Course No.	Subject	Scheme of studies period per week			Total Credits
		L	T	P	
MS 611	Dissertation Phase - I	-	-	32	16
Total hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subject	Scheme of studies period per week			Total Credits
		L	T	P	
MS 621	Dissertation Phase - II	-	-	40	20
Total hours: 40 Total Credits: 80		Total Semester Credits			20

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List of Program Electives A		List of Open Electives C	
MS551	Powder Processing Materials	ARP - 581	Introduction to Urban Planning
MS552	Semiconductors and Devices	BSE – 581	Bioprocess Engineering
MS553	Advanced Ceramic Materials	BSE – 582	Biophysics Tools and Techniques
MS554	Advanced Manufacturing Technology	CHE – 581	Analytical Techniques
MS555	Advanced Composite Materials	CHE – 582	Green Technology & Processes
MS556	Advanced Casting and Solidification	CE – 581	Solid Waste Management
MS557	Corrosion Science and Engineering	CE – 582	Basic Concept of GIS
MS558	High Temperature Materials	CE – 583	Road Safety
MS559	Nano Materials	CSE – 581	Machine Learning
MS560	Advanced Magnetic Materials and their Applications	CSE – 582	Advanced Data Structures and Algorithms
MS561	Advanced Metal Forming Techniques	PHY – 581	Nanotechnology and Nanoscience
MS562	Multi-Functional Materials	EE – 581	Electric Machines & Applications
MS563	Advanced Joining Technologies	EE – 582	Control and Instrumentation
		ECE – 581	Introduction to Fuzzy Logic
		ECE – 582	Neural Networks and its Applications
		EC - 581	Energy Resource Technologies
		HUM – 581	Intellectual Property Rights for Engineers
		HUM – 582	Applied Psychology: Human Centered Design and Engineering
		MTH – 581	Advanced Operations Research
		MTH – 582	Computing Technologies
		ME – 581	Value Engineering
		ME – 582	Design Thinking
		ME - 583	Mechatronics and NDT in Engineering
		MBA-581	Engineering Startup Management