

Maulana Azad National Institute of Technology, Bhopal – 462003  
**Mechanical Engineering Department**

**M Tech in Advanced Material Technology**  
 [Erstwhile: M. Tech in Engineering Materials]

**SCHEME OF STUDY (January 2021)**

**First Semester:**

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
AM 101	Advanced Computational Techniques	3	-	-	3
AM 102	Material Technology	3	-	-	3
AM 103	Mechanical Behavior of Materials	3	-	-	3
AM 104	Reliability Engineering	3	-	-	3
	Elective-1 (A)	3	-	-	3
	Elective-2 (B)	3	-	-	3
AM 105	Behavior of Materials Laboratory	-	-	2	1
AM 106	Seminar-I	-	-	2	1
AM 107	Communication Skills NPTEL/ MOOC/ Humanities Department	2	-	-	2
Total Hours: 24 Total Credits: 22		Total Semester Credits			22

**Second Semester:**

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
AM 201	Material Processing	3	-	-	3
AM 202	Advanced Composite Materials	3	-	-	3
AM 203	Failure and Fracture Analysis	3	-	-	3
	Elective-3 (A)	3	-	-	3
	Elective-4 (A)	3	-	-	3
	Elective-5 (C)	3	-	-	3
AM 204	Advanced Materials Laboratory	-	-	2	1
AM 205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
AM 206	Seminar-II	-	-	2	1
Total Hours: 24 Total Credits: 44		Total Semester Credits			22

**Third Semester:**

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
AM 301	Project Phase-I	-	-	24	1 6
Total Hours: 24 Total Credits: 60		Total Semester Credits			1 6

**Fourth Semester:**

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
AM 401	Project Phase-II	-	-	12	20
Total Hours: 80 Total Credits: 80		Total Semester Credits			20

<b>List of Electives A</b>		<b>List of Electives B</b>	
AM501	Process Planning in Material Systems	IT102	Fundamentals of Tribology
AM502	Mechanics of Bio Materials	IT103	Maintenance Strategies and Policies
AM503	Materials for Automotive Applications	ID504	Design for Reliability
AM504	Impact Mechanics	ID507	Material Selection in Mechanical Design
AM505	Material Management and Inventory Control	ID103	Product Planning & Design for Market
AM506	Intellectual Property Rights	TH501	Renewable Energy
AM507	Product Design & Material Selection	ID511	Additive Manufacturing
AM508	Concurrent Engineering	IT505	Industrial Maintenance & Management
AM509	Material Characterization	SV517	Product Design & Development
AM510	Powder Materials Processing	<b>List of Electives C</b>	
AM511	Industrial Psychology	EN202	Solid Waste Management
AM512	Organizational Behavior	GE203	Reinforced Soil Structures
AM513	Nano Materials, SMAs and Plastics	GI201	Basic Concepts of GIS
AM514	Aerospace Materials	HY201	Characteristics of Hydraulic Machines
AM515	Forming Processes	ST203	Theory of Plates & Shells
		TR201	Highway Construction & Maintenance
		WR203	Ground Water Engineering
		PS201	Modern Control Systems
		ED202	Advanced Control Systems
		VE202	VLSI Technology
		DC203	Digital Image Processing
		AC203	Optimization Techniques
		AI202	Deep Learning
		CN203	Graph Theory & Network Algorithm
		IS201	Applied Cryptography
		MS202	Deformation Behavior of Materials
		CH203	Industrial Safety & Hazard Management
		HS1204	Housing Finance
		UP1203	Infrastructure Planning
		NT201	Nano Structures Characterization Techniques
		BI203	Optimization Techniques & Graph
		CSB201	Mathematical Modeling & Simulation of Biological Systems
		RE202	Solar Energy Systems
		ES202	Energy Management in Buildings
		BIO201	Cheminformatics & Drug Designing

**Group A: Program Electives.**

**Group B: Departmental Electives.**

**Group C: Open Electives.**  
**{It may also be opted as NPTEL Course after approval from Chairman Senate}**