



*Maulana Azad*  
**NATIONAL INSTITUTE OF TECHNOLOGY, Bhopal-462003**  
**DEPARTMENT OF MECHANICAL ENGINEERING**  
**M. Tech. in Mechanical Engineering**  
*With Specialization in: Advanced Material Technology*  
**SCHEME OF STUDY (Revised April 2020)**

**First Semester**

Course No.	Course Title	Scheme of Studies Per week			Total Credits
		L	T	P	
AM101	Advanced Computational Techniques	3	1	-	4
AM102	Material Technology	3	1	-	4
AM103	Mechanical Behaviour of Materials	3	1	-	4
AM104	Reliability Engineering	3	1	-	4
	Elective 1(A)	3	1	-	4
	Elective 2(B)	3	1	-	4
AM105	Behaviour of Materials Laboratory	-	-	2	1
AM106	Seminar – I	-	-	2	1
AM107	Communication Skills NPTEL/ MOOC/ Humanities Department	2	-	-	2
<b>Total Hours 30</b>		<b>Total Credits</b>			<b>28</b>
<b>Total Credits (Cumulative) 28</b>					

**Second Semester**

Course No.	Course Title	Scheme of Studies Per week			Total Credits
		L	T	P	
AM201	Material Processing	3	1	-	4
AM202	Advanced Composite Materials	3	1	-	4
AM203	Failure and Fracture Analysis	3	1	-	4
	Elective 3(A)	3	1	-	4
	Elective 4(A)	3	1	-	4
	Elective 5(C)	3	1	-	4
AM204	Advanced Materials Laboratory	-	-	2	1
AM205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
AM 206	Seminar – II	-	-	2	1
<b>Total Hours 30</b>		<b>Total Credits</b>			<b>28</b>
<b>Total Credits (Cumulative) 56</b>					

**Third Semester**

<b>Course No.</b>	<b>Course Title</b>	<b>Scheme of Studies Per week</b>			<b>Total Credits</b>
		<b>L</b>	<b>T</b>	<b>P</b>	
<b>AM301</b>	Project Phase I	-	-	24	12
<b>Total Hours 24</b> <b>Total Credits (Cumulative) 68</b>		<b>Total Credits</b>			<b>12</b>

**Fourth Semester**

<b>Course No.</b>	<b>Course Title</b>	<b>Scheme of Studies Per week</b>			<b>Total Credits</b>
		<b>L</b>	<b>T</b>	<b>P</b>	
<b>AM401</b>	Project Phase II	-	-	12	12
<b>Total Hours 80</b> <b>Total Credits (Cumulative) 80</b>		<b>Total Credits</b>			<b>12</b>

### List of Electives

S. No	Group A		S. No	Group B	
1.	AM501	Facility Management and Process Planning	1.	AM601	Product Design & Material Selection
2.	AM502	Aerospace Materials	2.	AM602	Fundamentals of Tribology
3.	AM503	Polymer Technology	3.	AM603	Nuclear Materials
4.	AM504	Material Characterization	4.	AM604	Mechanics of Fibre-reinforced Composites
5.	AM505	Impact Mechanics	5.	AM605	Intellectual Property Rights
6.	AM506	Forming Processes	<b>Group C</b>		
7.	AM507	Nano Materials, SMAs and Plastics			
8.	AM508	Mechanics of Bio Materials	1.	AM701	Materials for Automotive Applications
9.	AM509	Inventory Management & Material Handling	2.	AM702	Organizational Behavior
10.	AM510	Theory of Elastic and Plastic Deformation	3.	AM703	Advanced Optimization Techniques
11.	AM511	Additive Manufacturing Technology	4.	AM704	Materials Science
12.	AM512	Powder Materials Processing	5.	AM705	Industrial Psychology

**Group-A Program Electives**

**Group-B Department Elective (for other programs of same department only)**

**Group-C Institute Elective (for other departments only)**