



*Maulana Azad*  
**NATIONAL INSTITUTE OF TECHNOLOGY, Bhopal-462003**  
**DEPARTMENT OF MECHANICAL ENGINEERING**

**M. Tech. in Mechanical Engineering**  
*With Specialization in: Industrial Tribology and Maintenance Engineering*  
**SCHEME OF STUDY (Revised April 2020)**

**First Semester**

Course No.	Course Title	Scheme of Studies Per week			Total Credits
		L	T	P	
MTH101 IT	Statistics and Probabilities	3	1	-	4
IT102	Fundamentals of Tribology	3	1	-	4
IT103	Maintenance Strategies and Policies	3	1	-	4
IT104	Lubrication Engineering and Management	3	1	-	4
	Elective 1 (A)	3	1	-	4
	Elective 2 (B)	3	1	-	4
IT105	Tribology Lab. (Laboratory – I)	-	-	2	1
IT106	Seminar – I	-	-	2	1
IT107	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	
IT201	Advanced Maintenance Practices	3	1	-	4
IT202	Failure Analysis and Prevention	3	1	-	4
IT203	Materials for Tribological Applications	3	1	-	4
	Elective 3 (A)	3	1	-	4
	Elective 4 (A)				
	Elective 5 (C)	3	1	-	4
IT204	Diagnostic Lab. (Laboratory – II)	-	-	2	1
IT205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
IT206	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>	
IT301	Project Phase I	-	-	24	12
<b>Total Hours 24Total Credits</b>					<b>12</b>
<b>Total Credits (Cumulative) 68</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>	
IT401	Project Phase II	-	-	24	12
<b>Total Hours 24Total Credits</b>					<b>12</b>
<b>Total Credits (Cumulative) 80</b>					

### List of Electives

Group A	Group B
IT501 Bulk Solids and Handling IT502 Computer Aided Maintenance Management IT503 Facility Management & Process Planning IT504 Industrial Hydraulics and Pneumatics IT505 Machine Health Monitoring IT506 Maintenance Audit and Design Awareness IT507 Maintenance Economics and Turn around Management IT508 Maintenance of Electrical Machines IT509 Maintenance of Material Handling Systems IT510 Maintenance of Power Plant Machinery IT511 Maintenance of Transport Machinery IT512 Restoration, Repairs and Retrofitting IT513 Risk Analysis and Industrial Safety	IT601 Computer Aided Maintenance Management IT602 Facility Management and Process Planning IT603 Industrial Maintenance and Management IT604 Industrial Organizational Behaviour IT605 Maintenance Audit and Design Awareness
	Group C
	IT701 Automobile Tribology IT702 Energy Conservation & Audit IT703 Industrial Maintenance & Management IT704 Industrial Psychology IT705 Industrial Organizational Behaviour IT 706 Concurrent Engineering

**Group-A Program Electives**

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

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