



**MIT ART, DESIGN AND TECHNOLOGY  
UNIVERSITY, PUNE**

**MIT SCHOOL OF ENGINEERING, PUNE**

**STRUCTURE**

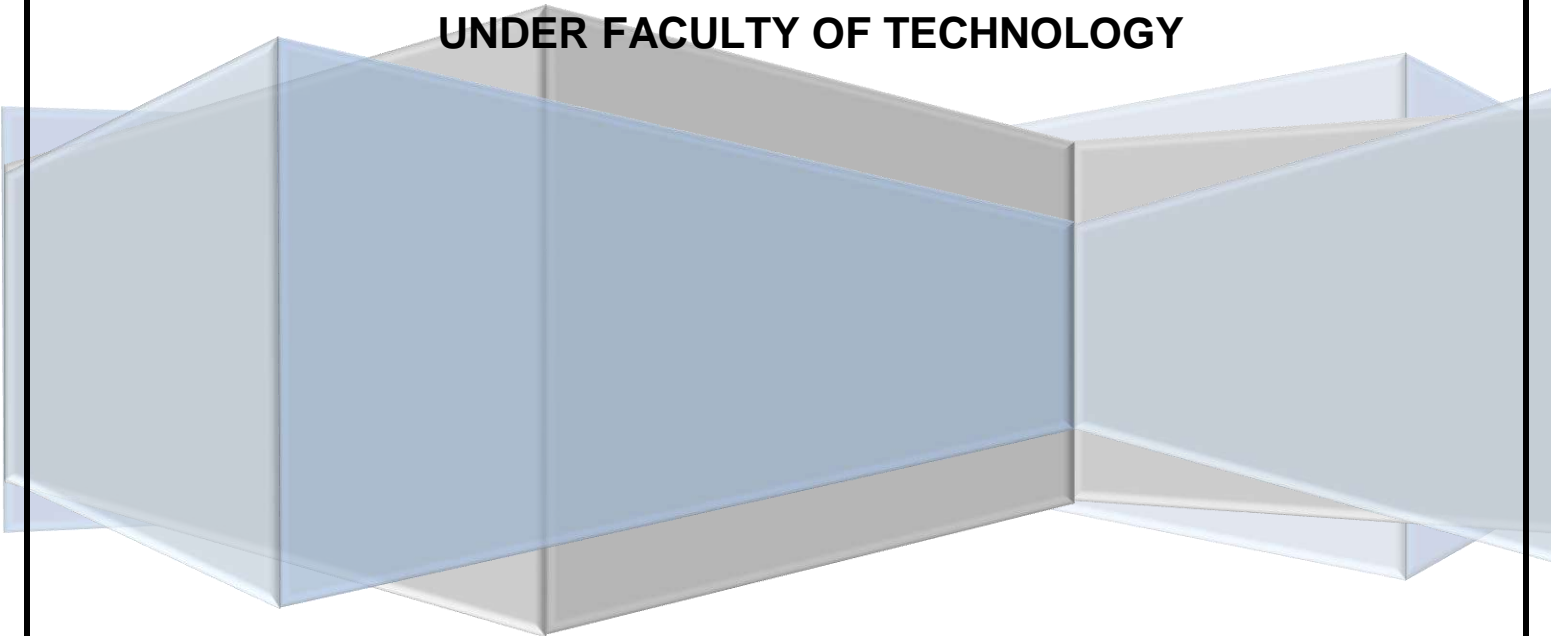
FOR

**Integrated  
B. Tech-M. Tech  
Mechanical Engineering  
(Design)**

**2018-19 pattern**

**196 Credits**

**UNDER FACULTY OF TECHNOLOGY**



**B. Tech. (Mechanical Engineering)**  
**(2018 Regulations)**

**(Credits: 196)**

**SEMESTER-I**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18BTMT101	Linear Algebra and Calculus	3	1	0	4	40	60	100
18BTCH003	Engineering Chemistry	3	0	0	3	40	60	100
18BTCS006	Programming for Problem Solving	2	0	0	2	40	60	100
18BTEG104	English communication for engineers	2	0	0	2	50	0	50
18BTCH013	Chemistry Laboratory	0	0	2	1	40	60	100
18BTCS016	Programming Lab	0	0	4	2	40	60	100
18BTEG114	English communication Lab	0	0	2	1	50	0	50
18MIMD017	Engineering Workshop	0	0	4	2	50	0	50
<b>Total</b>		<b>10</b>	<b>1</b>	<b>12</b>	<b>17</b>	<b>350</b>	<b>300</b>	<b>650</b>

**SEMESTER-II**

18BTMT201	Differential Equations and Advanced Calculus	3	1	0	4	40	60	100
18BTPY002	Engineering Physics	3	0	0	3	40	60	100
18BTEC005	Basics of Electrical and Electronics Engineering	3	0	0	3	40	60	100
18BTME011	Engineering Graphics	1	0	4	3	50	50	100
18BTME202	Basics of Mechanical Engineering	3	0	0	3	40	60	100
18BTPY012	Physics Laboratory	0	0	2	1	40	60	100
18BTEC015	Basics of Electrical and Electronics Engineering Lab	0	0	2	1	40	60	100
18BTME212	Engineering Graphics Lab	0	0	2	1	40	60	100
<b>Total</b>		<b>13</b>	<b>1</b>	<b>10</b>	<b>19</b>	<b>330</b>	<b>470</b>	<b>800</b>

**SEMESTER-III**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD301	Thermodynamics	3	0	0	3	40	60	100
18MIMD302	Differential Equations and Transform Techniques	3	1	0	4	40	60	100
18MIMD303	Mechanics of Solid	3	1	0	4	40	60	100
18MIMD304	Manufacturing Processes	3	0	2	4	40	60	100
18MIMD305	Engineering Metallurgy	3	0	2	4	40	60	100
18MIMD311	Thermodynamics Lab	0	0	2	1	40	60	100
18MIMD312	Geometric Modeling Lab	0	0	2	1	25	25	50
18MIMD321	Mini Project-I	0	0	4	2	100	--	100
<b>Total</b>		<b>15</b>	<b>2</b>	<b>12</b>	<b>23</b>	<b>365</b>	<b>385</b>	<b>750</b>

**SEMESTER IV**

18MIMD401	Applied Thermodynamics	3	0	0	3	40	60	100
18MIMD402	Fluid Mechanics	3	0	0	3	40	60	100
18MIMD403	Advanced Manufacturing Processes and Tooling	3	1	0	4	40	60	100
18MIMD404	Theory of Machines-I	3	0	2	4	40	60	100
18MIMD405	Electrical Machines	3	1	0	4	40	60	100
18MIMD411	Applied Thermodynamics Lab	0	0	2	1	25	50	75
18MIMD412	Fluid Mechanics Lab	0	0	2	1	25	50	75
18MIMD421	Mini Project-II	0	0	4	2	100	--	100
<b>Total</b>		<b>15</b>	<b>2</b>	<b>10</b>	<b>22</b>	<b>350</b>	<b>400</b>	<b>750</b>

**SEMESTER-V**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD501	Heat Transfer	3	0	0	3	40	60	100
18MIMD502	Turbo Machines	3	0	2	4	40	60	100
18MIMD503	Design of Machine Elements - I	3	0	2	4	40	60	100
18MIMD504	Metrology and Quality Control	3	0	2	4	40	60	100
18MIMD505	Theory of Machines - II	3	0	0	3	40	60	100
18MIMD511	Heat Transfer Lab	0	0	2	1	40	60	100
18MIMD512	Theory of Machines II – Lab	0	0	2	1	40	60	100
18MIMD521	Seminar	0	0	2	1	40	60	100
Total		16	0	12	21	320	480	800

**SEMESTER-VI**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD601	Numerical Modeling and Simulation	3	0	0	3	40	60	100
18MIMD602	Design of Machine Elements – II	3	0	0	3	40	60	100
18MIMD603	Analysis and Synthesis of Mechanisms	4	0	2	5	40	60	100
18MIMD604	Mechanical Behavior of Materials	3	0	0	3	40	60	100
18MIMD__	Elective-I :	3	0	0	3	40	60	100
18MIMD611	Design of Machine Elements – II Lab	0	0	2	1	40	60	100
18MIMD612	Numerical Modeling and Simulation Lab	0	0	2	1	40	60	100
18MIMD621	Technical paper presentation	0	0	2	1	40	60	100
Total		17	0	8	20	320	480	800

**SEMESTER-VII**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD701	Mechanical Vibration	3	0	0	3	40	60	100
18MIMD702	Mechanical System Design	3	0	0	3	40	60	100
18MIMD703	Mechatronics Systems	3	0	2	4	40	60	100
18MIMD__	Elective-II	3	0	0	3	40	60	100
18MIMD__	Elective-III	3	0	0	3	40	60	100
18MIMD711	Mechanical Vibration Lab **	0	0	2	1	40	60	100
18MIMD712	Mechanical System Design Lab **	0	0	2	1	40	60	100
18MIMD721	UG Project Phase-I	0	0	4	2	40	60	100
Total		15	0	10	20	320	480	800

**SEMESTER-VIII**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD801	CAD - CAM	3	0	0	3	40	60	100
18MIMD802	Advanced Engineering Mathematics	3	1	0	4	40	60	100
18MIMD803	Advanced Stress Analysis	4	0	0	4	40	60	100
18MIMD804	Advanced Mechanical Vibration and Acoustics	3	0	0	3	40	60	100
18MIMD__	Elective-IV	3	0	0	3	40	60	100
18MIMD__	Elective-V	3	0	0	3	40	60	100
18MIMD811	Lab Practice-I	0	0	2	1	40	60	100
18MIMD812	CAD -CAM Lab	0	0	2	1	40	60	100
18MIMD821	UG Project Phase-II	0	0	4	2	40	60	100
Total		19	1	6	24	280	420	700

**SEMESTER-IX**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD901	Advanced Machine Design	3	0	0	3	40	60	100
18MIMD902	Optimization Technique in Design	4	0	0	4	40	60	100
18MIMD903	Finite Element Analysis	3	0	2	4	40	60	100
18MIMD ____	Elective-VI	3	0	0	3	40	60	100
18MIMD	Lab. Practice-II	0	0	2	1	40	60	100
18MIMD921	PG Project Phase-I	0	0	6	3	40	60	100
Total		13	0	10	18	240	360	600

**SEMESTER-X**

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMD1021	PG Project Phase-II	0	0	24	12	100	200	300

**LIST OF ELECTIVES**

<b>Elective</b>	<b>Course Name</b>	
<b>Elective-I</b>	18MIMD631	Automobile Engineering
	18MIMD632	Industrial Engineering & Technology Management
	18MIMD633	Nano materials and Nanotechnology
<b>Elective-II</b>	18MIMD731	Industrial Design
	18MIMD732	Research Methodology
	18MIMD733	Mechanics of Composites and Smart Materials
<b>Elective-III</b>	18MIMD734	Product Design Development and Reverse Engineering
	18MIMD735	Project Management
	18MIMD736	Reliability Engineering
<b>Elective-IV</b>	18MIMD831	Design of Automotive System
	18MIMD832	Vehicle Dynamics
	18MIMD833	Operations Research
<b>Elective-V</b>	18MIMD834	Business Economics and Financial Analysis
	18MIMD835	Management and Entrepreneurship
	18MIMD836	Management and Organizational Behavior
<b>Elective-VI</b>	18MIMD931	Tribology
	18MIMD932	Material Handling Equipment Design
	18MIMD933	Computational Fluid Dynamics