



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

MIT SCHOOL OF ENGINEERING, PUNE

STRUCTURE

FOR

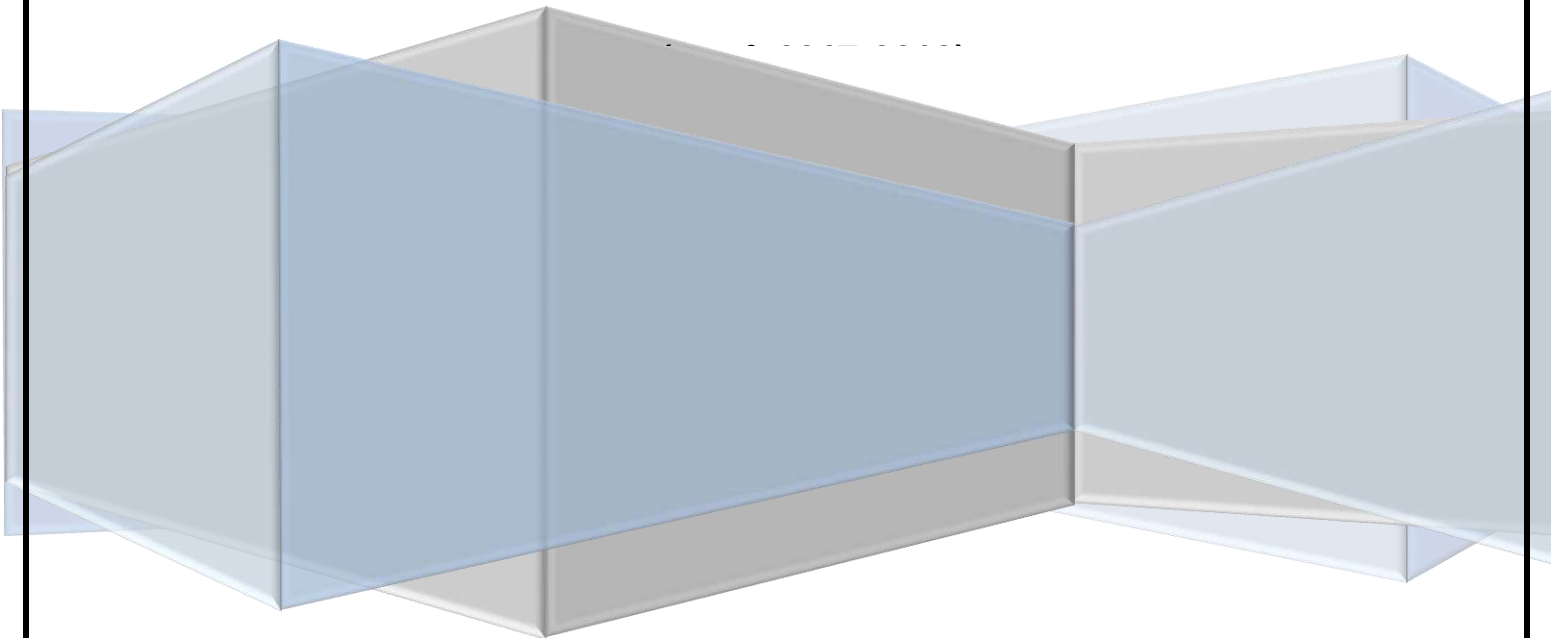
**Integrated M.Tech Mechanical
Engineering**

(Mechatronics & Automation)

2018-19 Pattern

196 Credits

UNDER FACULTY OF TECHNOLOGY



Integrated M. Tech. (Mechanical Engineering) – Mechatronics & Automation
(2018 Regulations)

(Credits : 196)

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
18BTME017	Engineering Workshop	0	0	4	2	50	0	50
Total		10	1	12	17	350	300	650
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
Total		13	1	10	19	330	470	800

The course Environmental Science is conducted during the Induction program of the First year

SEMESTER III								
Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMX301	Thermodynamics	3	0	0	3	40	60	100
18MIMX302	Differential Equations and Transform Techniques	3	1	0	4	40	60	100
18MIMX303	Mechanics of Solid	3	1	0	4	40	60	100
18MIMX304	Manufacturing Processes	3	0	2	4	40	60	100
18MIMX305	Engineering Metallurgy	3	0	2	4	40	60	100
18MIMX311	Thermodynamics Lab	0	0	2	1	40	60	100
18MIMX312	Geometric Modeling Lab	0	0	2	1	25	25	50
18MIMX321	Mini Project-I	0	0	4	2	100	--	100
Total		15	2	12	23	365	385	750
SEMESTER IV								
18MIMX401	Applied Thermodynamics	3	0	0	3	40	60	100
18MIMX402	Fluid Mechanics	3	0	0	3	40	60	100
18MIMX403	Advanced Manufacturing Processes and Tooling	3	1	0	4	40	60	100
18MIMX404	Theory of Machines-I	3	0	2	4	40	60	100
18MIMX405	Electrical Machines	3	1	0	4	40	60	100
18MIMX411	Applied Thermodynamics Lab	0	0	2	1	25	50	75
18MIMX412	Fluid Mechanics Lab	0	0	2	1	25	50	75
18MIMX421	Mini Project-II	0	0	4	2	100	--	100
Total		15	2	10	22	350	400	750

SEMESTER-V

	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMX501	Heat Transfer	3	0	2	4	40	60	100
18MIMX502	Hydraulics and Pneumatics	3	0	0	3	40	60	100
18MIMX503	Machine Design	3	0	0	3	40	60	100
18MIMX504	Smart Materials	3	0	0	3	40	60	100
18MIMX505	Mechatronics	4	0	0	4	40	60	100
18MIMX511	Hydraulics and Pneumatics Lab	0	0	2	1	40	60**	100
18MIMX512	Mechatronics Lab	0	0	2	1	40	60**	100
18MIMX521	Mini Project III	0	0	4	2	40	60	100
Total		16	0	10	21	320	480	800

SEMESTER-VI

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMX601	Numerical Modelling and Simulation	3	0	0	3	40	60	100
18MIMX602	Microprocessors and Microcontrollers	3	0	2	4	40	60	100
18MIMX603	Metrology and Quality Control	3	0	2	4	40	60	100
18MIMX604	Heating Ventilation & Air Conditioning	3	0	2	4	40	60	100
18MIMX63_	Elective I	3	0	0	3	40	60	100
18MIMX611	Numerical Modelling and Simulation Lab	0	0	2	1	40	60**	100
18MIMX621	Mini Project IV	0	0	4	2	40	60	100
Total		15	0	12	21	280	420	700

SEMESTER VII

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMX701	Financial management	3	0	0	3	40	60	100
18MIMX702	Drives and Actuators	3	0	0	3	40	60	100
18MIMX703	Computer Integrated Manufacturing	3	2	0	5	40	60	100
18MIMX704	Mechanical & Electronic Measurements	3	0	0	3	40	60	100
18MIMX73_	Elective II	3	0	0	3	40	60	100
18MIMX711	Drives & Actuators Lab	0	0	2	1	40	60	100
18MIMX721	Project Phase I (UG)	0	0	4	2	40	60	100
Total		15	2	6	20	280	420	700

SEMESTER-VIII

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMX801	Sensors & Transducers	4	2	0	6	40	60	100
18MIMX802	Control System Engineering	3	0	0	3	40	60	100
18MIMX803	Robotics and Automation	3	0	0	3	40	60	100
18MIMX804	Autotronics	3	0	0	3	40	60	100
18MIMX83_	Elective III	3	0	0	3	40	60	100
18MIMX811	Control System Engineering Lab	0	0	2	1	40	60**	100
18MIMX812	Robotics & Automation Lab	0	0	2	1	40	60**	100
18MIMX821	Project Phase II (UG)	0	0	4	2	40	60	100
Total		16	2	8	22	320	480	800

SEMESTER-IX

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMX901	Advanced Mathematics and Numerical Techniques	3	0	0	3	40	60	100
18MIMX902	Industrial Instrumentation and Control	3	0	0	3	40	60	100
18MIMX903	Research Methodology	3	0	0	3	40	60	100
18MIMX93_	Elective IV	3	0	0	3	40	60	100
18MIMX911	Laboratory Practice	0	0	4	2	40	60**	100
18MIMX921	Technical Seminar	0	0	4	2	40	60	100
18MIMX922	Project Phase-I (PG)	0	0	4	2	40	60	100
Total		12	0	12	18	280	420	700

SEMESTER-X

Course Code	Course Name	Hours/week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	FE	Total
18MIMXX21	Project Phase-II (PG)	0	0	24	12	100	200**	300
Total		0	0	24	12	100	200	300

LIST OF ELECTIVES

Elective	Course Name

Elective-I	18MIMX631	Power Plant Instrumentation
	18MIMX632	Micro-Electro Mechanical Systems
	18MIMX633	Power Electronics
Elective-II	18MIMX731	Operations Research
	18MIMX732	Management Information System
	18MIMX733	Supply chain management
Elective-III	18MIMX831	Building Automation
	18MIMX832	Embedded systems
	18MIMX833	Fuzzy Logic and Neural Network
Elective-IV	18MIMX931	Agricultural and Food Processing Instrumentation
	18MIMX932	Digital Signal Processing
	18MIMX933	CAD/CAM