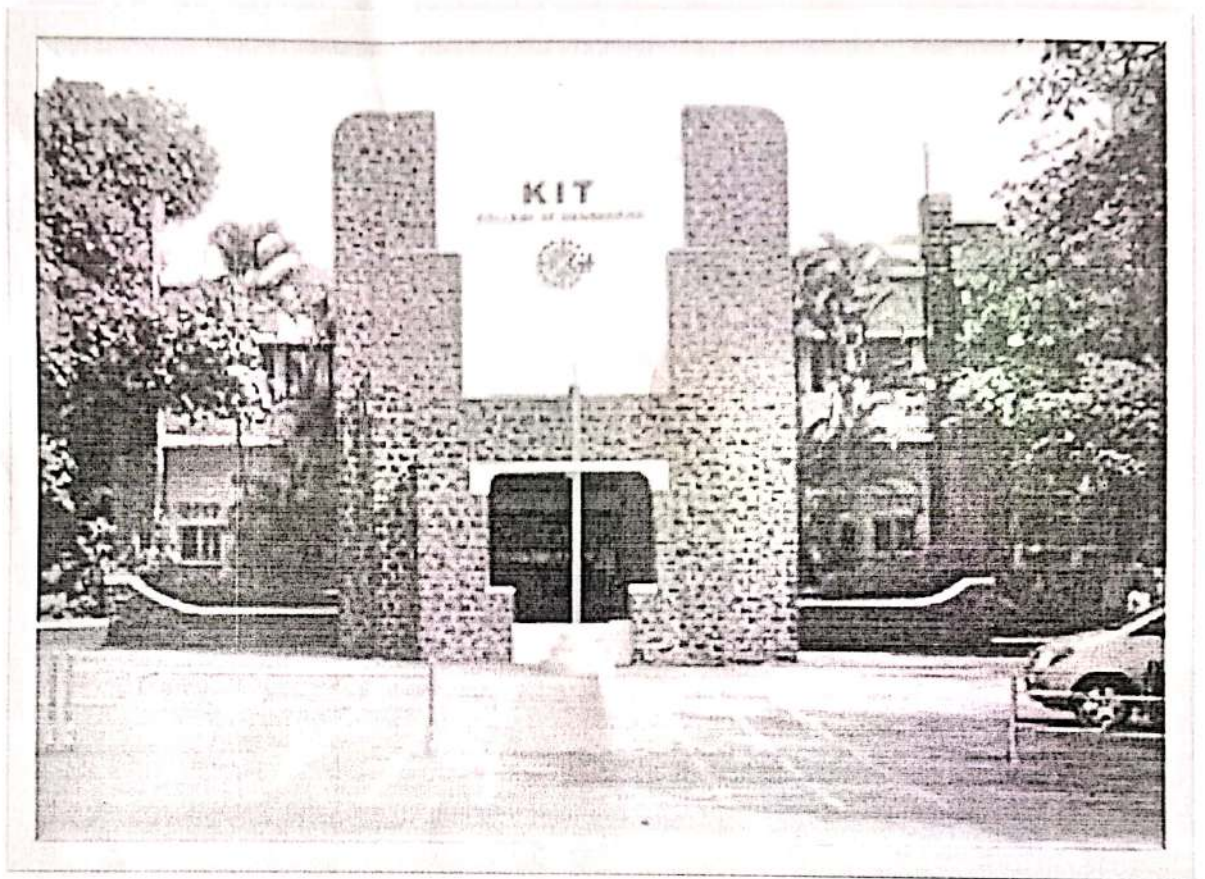




Department of Mechanical Engineering

Curriculum and Syllabus for

T.Y. B. Tech. Mechanical Engineering

With Effect from: 2025-26 (As Per NEP)



**Dr. U. S. Bhapkar
Head**

**Department of Mechanical Engg.
Kolhapur Institute of Technology's
College of Engineering (Autonomous,
Kolhapur**

SEMESTER V

Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max	Min	
1	PC	UMEPC0501	Design of Machine Elements	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
2	PC	UMEPC0502	Mechanical Vibrations	2	0	0	2	2	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
3	PC	UMEPC0503	Heat Transfer	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
4	PEC	UMEPE051*	Program Elective-I	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
5	OE	UMEOE052*	Open Elective-I	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
6	HSSM	UMEEM0504	Supply Chain Management	2	0	0	2	2	ESE	50	20	
7	PC	UMEPC0531	Heat Transfer Laboratory	0	0	2	2	1	ISE	25	10	
									ESE(POE)	25	10	
8	PC	UMEPC0532	Mechanical Vibrations Laboratory	0	0	2	2	1	ISE	25	10	
									ESE(POE)	25	10	
9	VSEC	UMEVS0533	Advanced Automobile Engineering Laboratory	0	0	2	2	1	ISE	25	10	
10	FP	UMEIL0571	Community Engagement Project	0	0	2	2	1	ISE	25	10	
11	MM	UMEMM054*	Multi Disciplinary Minor	3	0	0	3	3	ESE	100	40	
Total:							27	23	Total Marks: 800 Total Credit: 23			

SEMESTER VI

Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs. / Week	Credits	Evaluation Scheme			
									Component	Marks		
										Max	Min	
1	PC	UMEPC0601	Power Plant Engineering	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
2	PC	UMEPC0602	Finite Element Analysis	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
3	PC	UMEPC0603	Mechatronics	2	0	0	2	2	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
4	PEC	UMEPE061*	Program Elective-II	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
5	OE	UMEEOE062*	Open Elective- II	3	0	0	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
6	AEC	UMEAEO604	Business Communication and Value Science	0	0	2	2	1	ISE	50	20	
7	PC	UMEPC0631	Power Plant Engineering Laboratory	0	0	2	2	1	ISE	25	10	
									ESE(POE)	25	10	
8	PC	UMEPC0632	Finite Element Analysis Laboratory	0	0	2	2	1	ISE	25	10	
9	PC	UMEPC0633	Mechatronics Laboratory	0	0	2	2	1	ISE	25	10	
									ESE(POE)	25	10	
10	FP	UMEIL1071	CAD/CAM/CAE Laboratory	0	0	2	2	1	ISE	25	10	
11	CC	UMECC0634	Co-Curricular Activities-III	0	0	2	2	1	ISE	50	20	
12	MM	UMEMM064*	Multi Disciplinary Minor	3	0	0	3	3	ESE	100	40	
Total:							29	23	Total Marks:850 Total Credit: 23			

Program Electives:**PROGRAM ELECTIVE -1**

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEPE0511	Automobile and EV Technology	3	0	0	3	3
2	UMEPE0512	Tribology	3	0	0	3	3
3	UMEPE0513	Machine Tool Design	3	0	0	3	3
4	UMEPE0514	Design Thinking	3	0	0	3	3
Total:						3	3

PROGRAM ELECTIVE-II

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEPE0611	Fault Diagnosis and Condition Monitoring	3	0	0	3	3
2	UMEPE0612	Metal Forming and Joining Technology	3	0	0	3	3
3	UMEPE0613	Advanced Automobile Design*(Tata Tech)	3	0	0	3	3
4	UMEPE0614	Introduction to CFD	3	0	0	3	3
Total:						3	3

Multi Disciplinary Minor Courses**Track: Major in Mechanical Engineering with Minor in Artificial Intelligence and Machine Learning**

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEMM0541	Python for Machine Learning and Data Science	3	0	0	3	3
2	UMEMM0641	Data Visualization and Analysis	3	0	0	3	3
Total:						14	14

Multi Disciplinary Minor Courses**Track :Major in Mechanical Engineering with Minor in Electrical and Electronics Technology**

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEMM0542	Signal and Image Processing	3	0	0	3	3
2	UMEMM0642	Micro Electro Mechanical Systems	3	0	0	3	3
Total:						14	14

Multi Disciplinary Minor Courses

Track :Major in Mechanical Engineering with Minor in Automotive Technology

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEMM0543	Electrical and Hybrid Vehicles	3	0	0	3	3
2	UMEMM0643	Energy Storage Devices	3	0	0	3	3
Total:						14	14

Emerging Minor Courses

Track: Emerging Minor in Green Technology

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEMN0561	Energy Conservation and Management	3	1	0	4	4
2	UMEMN0661	Sustainable Engineering	3	1	0	4	4
Total:						20	18

B Tech Honors(Core Engineering Domain) (Robotics)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEHN0551	Programming and Simulation for Robotics	3	1	0	4	4
2	UMEHN0651	Robot Kinematics and Dynamics	3	1	0	4	4
Total:						8	8

OPEN ELECTIVE-I

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEOE0521	Product Design and Manufacturing	3	-	-	3	3

OPEN ELECTIVE-II

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEOE0621	Intellectual Property	3	-	-	3	3
2	UMEOE0622	Entrepreneurship Development	3	-	-	3	3
3	UMEOE0623	Six Sigma	3	-	-	3	3

EXIT COURSES-THIRD YEAR (B.VOC.)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UMEEEX0691	CAD/CAM/CAE	3	0	0	3	3
2	UMEEEX0692	Quality Managment	3	0	0	3	3
3	UMEEEX0693	Vocational Training	0	0	4	4	2
Total:						10	8