



**First Year Teaching Scheme**  
**Admission Year 2026-27**

**MTech in**  
**Mechatronics Engineering**

**Parul University**

**Vadodara, Gujarat, India**

**Semester – 1**

			Teaching Scheme			Internal Marks			External Marks		Passing Marks (Theory + CE)	Passing Marks (Practical)	Total Marks		
			(Hours / Week)												
NCrF Credit Level	Subject Code	Subject Name	Credit	Lect	Lab	Tut	T	P	CE	T	P	Int.+Ext.	Int.+Ext.		
4	03023001PC01	Fundamentals of Mechatronics Engineering	3	3	-	-	20	-	20	60	-	50	-	100	
	03023001P C02	Fundamentals of Mechatronics Engineering Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
	03023001P C03	Manufacturing Automation	3	3	-	-	20	-	20	60	-	50	-	100	
	03023001P C04	Manufacturing Automation Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
	<b>Professional Elective Course - I</b>														
	03023001P E01	Optimization Techniques	3	3	-	-	20	-	20	60	-	50	-	100	
	03023001P E03	Advanced Electrical Drives	3	3	-	-	20	-	20	60	-	50	-	100	
	03023201P E05	Digital Signal Processing	3	3	-	-	20	-	20	60	-	50	-	100	
	<b>Professional Elective Course Lab - I</b>														
	03023001P E02	Optimization Techniques Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
	03023001P E04	Advanced Electrical Drives Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
	03023201P E06	Digital Signal Processing Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
	<b>Professional Elective Course - II</b>														
	03023001P E07	Micro Electro-Mechanical Systems	3	3	-	-	20	-	20	60	-	50	-	100	
	03023201P E09	Embedded Systems	3	3	-	-	20	-	20	60	-	50	-	100	
	03023201P E11	Robotics Engineering	3	3	-	-	20	-	20	60	-	50	-	100	

<b>Professional Elective Course Lab- II</b>														
03023001P E08	Micro Electro-Mechanical Systems Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
03023201P E10	Embedded Systems Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
03023201P E12	Robotics Engineering Laboratory	1	-	2	-	-	20	-	-	30	-	25	50	
<b>Humanities and Social Science, including Management Course (HSMC)-I</b>														
03020201H M01	Research Methodology & IPR	4	4	-	-	20	-	20	60	-	50	-	100	
<b>Mandatory Course (MNC)-I</b>														
03020001M C01	English for Research Paper Writing	0	2	-	-	-	-	50	-	-	25	-	50	
03021601M C01	Disaster Management	0	2	-	-	-	-	50	-	-	25	-	50	
	<b>Total credits</b>	<b>20</b>												

Lect - Lecture, Tut - Tutorial, Lab - Lab, T - Theory, P - Practical, CE - CE, T - Theory, P - Practical

Theory Passing % : 40 Practical Passing % : 50

Semester – 2

NCrF Credi t Level	Subject Code	Subject Name	Credit	Teaching Scheme			Internal Marks			External Marks		Passing Marks (Theory + CE)	Passing Marks (Practical )	Total Mark s	
				(Hours / Week)				T	P	CE	T	P	Int.+Ext .		Int.+Ext.
4	03023002P C01	Smart Materials and Micro-Systems	3	3	0	0	20	-	20	60	-	50	-	100	
	03023002P C02	Smart Materials and Micro-Systems Laboratory	1	0	2	0	-	20	-	-	30	-	25	50	
	03023002P C03	Industrial Process Automation	3	3	0	0	20	-	20	60	-	50	-	100	
	03023002P C04	Industrial Process Automation Laboratory	1	0	2	0	-	20	-	-	30	-	25	50	
	<b>Professional Elective Course (PEC)-III</b>														
	03023002P E01	Wireless Sensor Networks	3	3	0	0	20	-	20	60	-	50	-	100	
	03023002P E03	Digital Manufacturing and Smart Factories	3	3	0	0	20	-	20	60	-	50	-	100	
	03023002P E05	Intelligent Sensors and Actuators	3	3	0	0	20	-	20	60	-	50	-	100	
	<b>Professional Elective Course Lab-III</b>														
	03023002P E02	Wireless Sensor Networks Laboratory	1	0	2	0	-	20	-	-	30	-	25	50	
	03023002P E04	Digital Manufacturing and Smart Factories Laboratory	1	0	2	0	-	20	-	-	30	-	25	50	
	03023002P E06	Intelligent Sensors and Actuators Laboratory	1	0	2	0	-	20	-	-	30	-	25	50	
	<b>Professional Elective Course (PEC)-IV</b>														
	03023002P E07	Digital Image Processing & Machine Vision	3	3	0	0	20	-	20	60	-	50	-	100	
	03023002P E09	Mobile and Autonomous Robots	3	3	0	0	20	-	20	60	-	50	-	100	
	03023202P E11	Artificial Intelligence and Machine Learning	3	3	0	0	20	-	20	60	-	50	-	100	
	<b>Professional Elective Course Lab-IV</b>														
	03023002P E08	Digital Image Processing & Machine Vision Laboratory	1	0	2	0	-	20	-	-	30	-	25	50	

03023002P E10	Mobile and Autonomous Robots Laboratory	1	0	2	0	-	20	-	-	30	-	25	50
03023202P E12	Artificial Intelligence and Machine Learning Laboratory	1	0	2	0	-	20	-	-	30	-	25	50
<b>Multidisciplinary Open Professional Electives Courses (MOPECs-I)</b>													
03020202U E01	Augmented Reality and Virtual Reality	4	4	-	-	20	-	20	60	-	50	-	100
03020202U E02	Cyber Physical Systems	4	4	-	-	20	-	20	60	-	50	-	100
03020202U E03	Social Networking	4	4	-	-	20	-	20	60	-	50	-	100
03020502U E01	Business Analytics	4	4	-	-	20	-	20	60	-	50	-	100
03020602U E01	Industrial Safety	4	4	-	-	20	-	20	60	-	50	-	100
03020702U E01	IOT and Smart Cities	4	4	-	-	20	-	20	60	-	50	-	100
03022002U E01	Waste to Energy	4	4	-	-	20	-	20	60	-	50	-	100
<b>Mandatory Course (MNC)-II</b>													
03020002M C01	Pedagogy Studies	0	2	-	-	-	-	50	-	-	25	-	50
03020002M C02	Personality Development through Life Enlightenment Skills	0	2	-	-	-	-	50	-	-	25	-	50
	<b>Total credits</b>	<b>20</b>											

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Theory Passing % : 40 Practical Passing % : 50