MANIPAL UNIVERSITY
JAIPUR

School of Engineering

Department of Mechatronics Engineering

Master of Technology

in

Industrial Automation and Robotics

80 Credits

Batch: 2025 & Onwards

School of Engineering

Department of Mechatronics Engineering

M. Tech. in Industrial Automation and Robotics

Proposed Scheme for First Year (Total Credits 52/80)

Teaching Scheme			Contact Hours/Week				End-Term Exam Duration		Relative Weightage%				
Sem	**Code**	**Course Name**	**L**	**T**	**P**	**C**	**Th.**	**P.**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
I Semester	MA 6101	Applied Numerical Analysis	3	0	0	3	3	-	30	-	30	40	-
	MCE6170	Research Methodology	3	0	0	3	3	-	30	-	30	40	-
	MCE6102	Robotics	3	0	0	3	3	-	30	-	30	40	-
	MCE6103	Advance Control Theory	3	0	0	3	3	-	30	-	30	40	-
	MCE6104	Additive Manufacturing	3	0	0	3	3	-	30	-	30	40	-
	MCE6105	Intelligent systems	3	0	0	3	3	-	30	-	30	40	-
	MCE61**	Program Elective - I	3	0	0	3	3	-	30	-	30	40	-
	MCE6130	PLC Lab	0	0	4	2	-	2	-	60	-	-	40
	MCE6131	Pneumatics and Hydraulics Lab	0	0	4	2	-	2	-	60	-	-	40
	MCE6132	Design and Modelling Lab	0	0	2	1	-	2	-	60	-	-	40
		Total	**21**	**0**	**10**	**26**	**Total Contact Hours (L + T + P) = 31**						

Teaching Scheme			Contact Hours/Week				End-Term Exam Duration		Relative Weightage %				
Sem	**Code**	**Course Name**	**L**	**T**	**P**	**C**	**Th.**	**P.**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
II Semester	MCE6201	Artificial Intelligence	3	0	0	3	3	-	30	-	30	40	-
	MCE6202	Drives and Automation	3	1	0	4	3	-	30	-	30	40	-
	MCE6204	Sensor and control systems	3	1	0	4	3	-	30	-	30	40	-
	MCE6203	Machine vision	3	0	0	3	3	-	30	-	30	40	-
	MCE62**	Program Elective - II	3	0	0	3	3	-	30	-	30	40	-
	MCE62**	Program Elective - III	3	0	0	3	3	-	30	-	30	40	-
	******	Open Elective	3	0	0	3	3	-	30	-	30	40	-
	MCE6230	Robotics Lab	0	0	2	1	-	2	-	60	-	-	40
	MCE6231	Drives and Automation Lab	0	0	2	1		2		60			40
	MCE6232	Seminar	0	0	2	1	-	1	100	-	-	-	-
		Total	**21**	**02**	**06**	**26**	**Total Contact Hours (L + T + P) + OE =29**						

School of Engineering
Department of Mechatronics Engineering

M. Tech. in Industrial Automation and Robotics

Proposed Scheme for Second Year (Total Credits 28/75)

Teaching Scheme			Contact Hours/Week				End-Term Exam Duration		Relative Weightage %				
Semeseter	**Code**	**Course Name**	**L**	**T**	**P**	**C**	**Th.**	**P.**	**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
III and IV Semester	MCE7080	Dissertation	0	0	0	28	-	-	-	-	25	75	-
		Total				28							

List of Program Elective - I	
MCE6140	Drone Modelling and Control
MCE6141	Signals and Systems
MCE6142	Cyber physical system
MCE6143	Mobile Robots
List of Program Elective - II	
MCE6240	Wireless Sensor Networks
MCE6241	Building Automation
MCE6242	Robot Path Planning and Control
MCE6243	Optimal Control
List of Program Elective - III	
MCE6251	MEMS and NEMS
MCE6252	Production and Operations Management
MCE6253	Drone Applications
MCE6254	Smart Manufacturing

List of Open Elective	
MCE6001	Fundamental of Robotics
MCE6002	Automation in Industry
MCE6003	Sensor Technologies

ABBREVIATIONS	
L	Lecture
T	Tutorial
P	Practical
C	Number of Credits
Th.	Theory Course
P.	Practical (Laboratory) Course
CWS	Class Work Sessional
MTE	Mid-Term Exam
PRE	End Term Practical Exam
PRS	Practical Sessional
ETE	End Term Exam