



**BRAINWARE UNIVERSITY**  
**SCHOOL OF ENGINEERING**  
**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**  
**M.TECH IN ROBOTICS & AUTOMATION 2023**

**SEMESTER – I**

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
HSMC-MIRA101	Research Methodology and IPR	HSMC	3	0	0	3	100
PCC-MIRA101	Fundamental of Robotics: Robot Installation and Economics	PC	3	0	0	3	100
PCC-MIRA102	Advanced Control System in Robotics	PC	3	0	0	3	100
PEC-MIRA101	<b>Programme Elective I:</b> A. Artificial Intelligence for Robotics B. Embedded System Application for Robotics	PE	3	0	0	3	100
PEC-MIRA102	<b>Programme Elective II:</b> A. Mobile and Medical Robotics B. Electronics in Robotic Technology	PE	3	0	0	3	100
PCC-MIRA191	Programming Laboratory for Robotics	PC	0	0	4	2	100
PCC-MIRA192	Robot Design Laboratory	PC	0	0	4	2	100
<b>TOTAL</b>						<b>19</b>	<b>700</b>
<b>AU-MIRA1</b>	Constitution of India	AU	2	0	0	0	0

**Total Hours: 25**



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**SEMESTER – II**

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
PCC-MIRA201	Measurement and Sensor for Robotics	PC	3	0	0	3	100
PCC-MIRA202	Image Processing and Robotic Vision	PC	3	0	0	3	100
PEC-MIRA201	<b>Programme Elective III:</b> A. Machine Learning in Robotics B. Product Design and Development	PE	3	0	0	3	100
OEC-MIRA201	<b>Open Elective:</b> A. Mechatronics System Design B. Industrial Internet of Things	OE	3	0	0	3	100
PCC-MIRA291	Robotics and Automation Laboratory	PC	0	0	4	2	100
PROJ-MIRA281	Term paper leading to Dissertation	PR	-----			3	100
<b>TOTAL</b>						<b>17</b>	<b>600</b>
<b>AU-MIRA2</b>	Value Education	AU	2	0	0	0	0

**Total Hours: 18**



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**SEMESTER – III**

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
PCC-MIRA301	Industrial Automation	PC	3	0	0	3	100
PEC-MIRA301	<b>Programme Elective IV:</b> A. Signal Processing in Mechatronic System B. Wireless Sensor Network in Automation	PE	3	0	0	3	100
PEC-MIRA302	<b>Programme Elective V:</b> A. Industry 4.0 B. Micro and Nano Robotics C. Humanoid Robots	PE	3	0	0	3	100
PROJ-MIRA381	Dissertation Phase – I	PR	-----			10	100
<b>TOTAL</b>						<b>19</b>	<b>400</b>

**Total Hours: 09**

**SEMESTER – IV**

Course Code	Course Name	Course Type	Hours per week			Credit(s)	Total Marks
			L	T	P		
PROJ-MIRA481	Dissertation Phase – II	PR	-----			20	100
<b>TOTAL</b>						<b>20</b>	<b>100</b>

**Total Credits: 75**

**Total Marks: 1800**



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Semester	Course Category					Total Credit	Total Marks	Total Hours per week
	HSMC	PC	PE	OE	PR			
<b>I</b>	3	10	6	0	0	<b>19</b>	700	25
<b>II</b>	0	8	3	3	3	<b>17</b>	600	18
<b>III</b>	0	3	6	0	10	<b>19</b>	400	9
<b>IV</b>					20	<b>20</b>	100	0
<b>Total</b>	<b>3</b>	<b>21</b>	<b>15</b>	<b>3</b>	<b>33</b>	<b>75</b>	<b>1800</b>	
<b>Percentage</b>	<b>4.00%</b>	<b>28.00%</b>	<b>20.00%</b>	<b>4.00%</b>	<b>44.00%</b>			