



**Integral University, Lucknow**  
**Department of Computer Science and Engineering**  
**M. Tech. in Robotics, Control and Intelligence**  
w.e.f. Session 2022-23

**Year/Semester: I / I (Odd Semester)**

S. N.	Course Code	Course Title	Theory / Practical	Course Category	Periods/ Per week			Continuous Assessment			End Semester Examination (ESE)	Subject Total	Total Credit Points	Attributes						United Nations Sustainable Development Goals (SDGs)		
					Lecture (L)	Tutorial (T)	Practical (P)	Class Test (CT)	Teacher Assessment (TA)	Total				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value		Professional Ethics	
1	CS561	Robot Kinematics and Dynamics	Theory	Core	3	1	0	40	20	60	40	100	4	√	√	√						
2	CS562	Planning and Decision Making	Theory		3	1	0	40	20	60	40	100	4	√	√	√						
3	EE-301	Control System	Theory		3	1	0	40	20	60	40	100	4	√		√						
4	CS-546	Mathematical Programming	Theory		3	1	0	40	20	60	40	100	4	√	√	√						
5	CS563	Robot Software Practical	Practical		0	0	4	30	30	60	40	100	2	√	√	√						
6	CS-272	Python Programming Lab	Practical		0	0	2	30	30	60	40	100	1	√	√	√						
<b>TOTAL</b>					<b>12</b>	<b>4</b>	<b>6</b>	<b>220</b>	<b>140</b>	<b>360</b>	<b>240</b>	<b>600</b>	<b>19</b>									

**L – Lecture, T – Tutorial, P – Practical, C – Credits, CT - Class Test, TA - Teacher Assessment**

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Year/Semester: I / II (Even Semester)

S. N.	Course Code	Course Title	Theory / Practical	Course Category	Periods/ Per week			Continuous Assessment		End Semester Examination (ESE)	Subject Total	Total Credit Points	Attributes							United Nations Sustainable Development Goals (SDGs)				
					Lecture (L)	Tutorial (T)	Practical (P)	Class Test (CT)	Teacher Assessment (TA)				Total	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value		Professional Ethics			
1	CS564	Field and Service Robots	Theory	Core	3	1	0	40	20	60	40	100	4	√	√	√							8	
2	CS-544	Machine Learning Theory & Methods (DC)	Theory		3	1	0	40	20	60	40	100	4	√	√	√								9
3	CS-549	Machine Learning Tools Lab (DC)	Practical		0	0	2	30	30	60	40	100	1	√	√	√								12
4	CA-206	C++ Lab	Practical		0	0	3	40	20	60	40	100	2	√		√								9
5		Elective 1	Theory	Electives	3	1	0	40	20	60	40	100	4											6
6		Elective 2	Theory		3	1	0	40	20	60	40	100	4											6
		Elective 3	Theory		3	1	0	40	20	60	40	100	4											6
<b>TOTAL</b>					<b>15</b>	<b>5</b>	<b>5</b>	<b>270</b>	<b>150</b>	<b>420</b>	<b>280</b>	<b>700</b>	<b>23</b>											

Elective-1	CS-529	Digital Image Processing and Its Applications [CS Elective]	√		√																		
	CS-281	Graph Theory and Its Applications [CS Core]			√																		
	CS-540	Advanced Human Computer Interaction [CS Elective]	√		√																		
Elective-2	CS-527	Advanced Real Time Systems [CS Elective]			√																		
	CS-523	Pattern Recognition & its Application [CS Elective]	√	√	√																		
	ME-321	Industrial Ergonomics (OE)	√		√																		
Elective-3	EE-335	Industrial Automation (OE)	√		√																		
	EE-333	Advanced Control System (OE)	√		√																		
	ME-317	Six Sigma Methods, Approach & Application (OE)	√		√																		

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Year/Semester: II / III (Odd Semester)

S. N.	Course Code	Course Title	Theory / Practical	Course Category	Periods/ Per week			Continuous Assessment			End Semester Examination (ESE)	Subject Total	Total Credit Points	Attributes							United Nations Sustainable Development Goals (SDGs)		
					Lecture (L)	Tutorial (T)	Practical (P)	Class Test (CT)	Teacher Assessment (TA)	Total				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics			
1	CS422	Artificial Intelligence (DC) [CS Core]	Theory	Core	3	1	0	40	20	60	40	100	4	√	√	√						8	9
2	CS631	Integration Project Lab (DC)	Practical		0	0	8	40	20	60	40	100	4	√	√	√							9
3	CS632	Machine Perception	Theory		3	1	0	40	20	60	40	100	4	√	√	√							12
4		Departmental Elective-3	Theory	Electives	3	1	0	40	20	60	40	100	4										9
5		Departmental Elective-4	Theory		3	1	0	40	20	60	40	100	4										6
<b>TOTAL</b>					<b>12</b>	<b>4</b>	<b>8</b>	<b>200</b>	<b>100</b>	<b>300</b>	<b>200</b>	<b>500</b>	<b>20</b>										

<b>Elective-4</b>	CS-603	Ad Hoc Sensor Networks (DE-III) [CS Elective]	√	√	√								
	EE610	Modern Control (DE III)	√		√								
	CA-565	Virtual Reality [CA Elective]	√		√								
	CS-607	System Simulation and Modelling [CS Elective]	√		√		√						
	CS634	Deep Learning (DE III) [Not Currently Offered]	√	√	√								
<b>Elective-5</b>	CS-626	Internet of Things (DE-4) [CS Elective-IV]			√								
	CS-605	Agile Software Engineering (DE)	√		√								
	ME-308	Engineering Product Design (OE)	√		√								
	CS-609	Big Data (DE-IV) [CS Core]	√		√								

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					Lecture (L)	Tutorial (T)	Practical (P)	Class Test (CT)	Teacher Assessment (TA)	Total				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics			
1	CS699	M.Tech.Dissertation	Practical	Core	0	0	4			60	40	100	4	√	√	√							
2	CS699	M.Tech.Dissertation	Practical		0	0	4			60	40	100	4	√	√	√							
3	CS699	M.Tech.Dissertation	Practical		0	0	4			60	40	100	4	√	√	√							
4	CS699	M.Tech.Dissertation	Practical		0	0	4			60	40	100	4	√	√	√							
<b>TOTAL</b>					<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>240</b>	<b>160</b>	<b>400</b>	<b>16</b>										

Total Credit for M.Tech Course: 19+23+20+16 = 78

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