

4-year B.Tech. degree Course in
Bachelor of Technology (B.Tech) in Robotics and AI w.ef. 2025-26

SEMESTER I

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1.	15B11MA111	Mathematics-1	BSC	3	1	0	4	4
2.	15B11PH111	Physics-1	BSC	3	1	0	4	4
3.	15B11CI111	Software Development Fundamentals-1	ESC	3	1	0	4	4
4.	15B11HS112	English	HSC	1	0	2	3	2
5.	15B17PH171	Physics Lab-1	BSC	0	0	2	2	1
6.	24B15CS111	Software Development Fundamentals Lab-1	BSC	0	0	2	2	1
7.	18B15GE111	Engineering Drawing & Design	ESC	0	0	3	3	1.5
8.	24B11EC111	Basic Electronics	ESC	3	1	0	4	4
9.	24B15EC111	Basic Electronics Lab	ESC	0	0	2	2	1
		Total					28	22.5

SEMESTER II

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1.	15B11MA211	Mathematics-2	BSC	3	1	0	4	4
2.	15B11PH211	Physics-2	BSC	3	1	0	4	4
3.	15B11CI211	Software Development Fundamentals-2	ESC	3	1	0	4	4
4.	15B17PH271	Physics Lab-2	BSC	0	0	2	2	1
5.	24B15CS121	Software Development Fundamentals Lab-2	ESC	0	0	2	2	1
6.	24B16HS111	Life Skills & Professional Communication Lab	HSC	0	0	2	2	Qualifying
7.	18B15GE112	Workshop	ESC	0	0	3	3	1.5
8.	24B11HS111	Universal Human Values (UHV)	HSC	2	1	0	3	3
		Total					24	18.5

SEMESTER III

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1	15B11MA301	Probability and Random Processes	BSC	3	1	0	4	4
2	25B51EC211	Analog & Digital Electronics	PCC	3	1	0	4	4
3	25B11ME211	Fundamentals of Robotics & AI	PCC	3	1	0	4	4
4	18B11EC214	Signals and Systems	PCC	3	1	0	4	4
5	19B13BT211	Environmental Studies	OMC	3	0	0	3	Qualifying
6	25B55EC211	Analog & Digital Electronics Lab	PCC	0	0	2	2	1
7	25B55EC212	Robot Programming Lab	PCC	0	0	2	2	1
8	18B15EC214	Signals and Systems Lab	PCC	0	0	2	2	1
9	25B11ME213	Fundamental of Mechanical Engineering	ESC	2	0	0	2	2
10	15B11HS211	Economics	HSC	2	1	0	3	3
11	24B17EC211	Summer Training-I(4 weeks)	PRC	-	-	-	-	2
		Total					30	26

SEMESTER IV

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1	XXXXXX	HSS Elective-1	HSC	2	1	0	3	3
2	25B51EC212	Machine Learning for Robotics	PCC	3	1	0	4	4
3	25B51EC213	Sensors and Actuators for Robotics	PCC	3	1	0	4	4
4	25B51EC214	Microcontrollers and Its Applications	PCC	3	1	0	4	4
5	25B11ME212	Theory of Machines and Machine Design	PCC	2	0	0	2	2
6	25B55EC213	Sensors and Actuators Lab	PCC	0	0	2	2	1
7	25B55EC214	Microcontrollers & Its Applications Lab	PCC	0	0	2	2	1
8	XXXXXX	Discipline Elective -1	PEC	2	0	2	4	3
		Total					25	22

SEMESTER V

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1	25B12CS321	Applied Data Structures and Algorithms for AI and Robotics	PCC	3	0	0	3	3
2	15B11EC613	Control Systems	PCC	3	0	0	3	3
3	25B16CS321	Applied Data Structures and Algorithms for AI and Robotics Lab	PCC	0	0	2	2	1
4	25B55EC312	Control Systems Lab	PCC	0	0	2	2	1
5	25B51EC311	Advances in Robotics and Artificial Intelligence	PCC	3	0	0	3	3
6	XXXXXX	Discipline Elective -2	PEC	3	0	0	3	3
7	25B11ME313	Kinematics and Dynamics of Robots	PCC	3	0	0	3	3
8	25B15ME311	Robotic Simulation Laboratory	PCC	0	0	2	2	1
9	25B55EC311	AI for Robotics Applications Lab	PCC	0	0	2	2	1
10	20B13HS311	Indian Constitution & Traditional Knowledge	OMC	3	0	0	3	Qualifying
11	24B17EC311	Summer Training-II (6 weeks)	PRC	0	0	0	0	2
		Total					26	21

SEMESTER VI

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1	25B51EC312	Embedded Systems Design	PCC	3	0	0	3	3
2	25B51EC313	Data Science for Robotics and AI	PCC	2	0	0	2	2
3	25B55EC313	Robot Operating Systems Lab	PCC	1	0	2	3	2
4	25B51EC314	Image Processing & Computer Vision	PCC	2	0	0	2	2
5	25B11ME314	Robots Safety & Maintenance	PCC	3	0	0	3	3
6	XXXXXX	Discipline Elective -3	PEC	2	0	2	4	3
7	XXXXXX	Discipline Elective -4	PEC	3	0	0	3	3
8	XXXXXX	Selected Value-Added Course	Value added	2	0	0	2	Audit
9	25B55EC314	Embedded and IoT Systems for Robotics Lab	PCC	0	0	2	2	1
10	24B15HS311	HSS Course	HSC	-	-	2	2	1
11	24B17EC312	Minor Project	PRC	-	-	4	4	2
		Total					30	22

SEMESTER VII

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1	XXXXXX	Discipline Elective -5	PEC	3	0	0	3	3
2	XXXXXX	Discipline Elective -6	PEC	3	0	0	3	3
3	15B19EC791	Major Project Part-I	PRC	0	0		8	4
4	24B17EC411	Summer Training-III (6 weeks)	PRC	0	0	0	0	4
		Total					14	14

SEMESTER VIII

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1	XXXXXX	Discipline Elective -7	PEC	3	0	0	3	3
2	XXXXXX	Open Elective	OEC	3	-	-	3	3
3	24B17EC412	Major Project Part-II	PRC	-	-	16	16	8
		Total					22	14

TOTAL CREDITS: 160

Mandatory Internships/Summer Trainings

Summer Training -I (4 weeks) (In summer vacation after second semester)

Sr. No.	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1.	24B17EC211	Inter/Intra institutional activities (Training with higher Institutions; Soft skill training organized by Training and Placement Cell of the respective institutions; contribution at incubation/innovation /entrepreneurship cell of the institute; participation in conferences/workshops/ competitions etc.; Learning at Departmental Lab/ Tinkering Lab/ Institutional workshop; Working for consultancy/ research project within the institutes and Participation in all the activities of Institute's Innovation Council for e.g.: IPR workshop/ Leadership Talks/ Idea/Design/ Innovation/ Business Completion/ Technical Expos etc.)	PRC1	0	0	6	6	2
		TOTAL					6	2

Summer Training -II (6 weeks) (In summer vacation after fourth semester)

Sr. No	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1.	24B17EC311	Industrial/Govt./ NGO/MSME/Rural Internship/ Innovation /Entrepreneurship (Students may choose either to work on innovation or entrepreneurial activities resulting in start-up or undergo internship with industry/ NGO's/ Government organizations/ Micro/ Small/Medium enterprises to make themselves ready for the industry. In case student want to pursue their family business and don't want to undergo internship, a declaration by a parent may be submitted directly to the TPO.)	PRC1	0	0	6	6	2
		TOTAL					6	2

Summer Training -III (6 weeks) (In summer vacation after sixth semester)

Sr. No	Course No.	Course Title	Course Category	L	T	P	Total	Credits
1.	24B17EC411	Industrial/Govt./ NGO/MSME/Rural Internship/ Innovation /Entrepreneurship (Students may choose either to work on innovation or entrepreneurial activities resulting in start-up or undergo internship with industry/ NGO's/ Government organizations/ Micro/ Small/Medium enterprises to make themselves ready for the industry. In case student want to pursue their family business and don't want to undergo internship, a declaration by a parent may be submitted directly to the TPO.)	PRC1	0	0	8	8	4
		TOTAL					8	4