



Yashoda Shikshan Prasarak Mandal's
YASHODA TECHNICAL CAMPUS, SATARA

An Autonomous Institute

FACULTY OF ENGINEERING

Department of Robotics and AI Engineering

S.Y. B.Tech SEMESTER III

Course Code	Course Domain	Course Name	Teaching Scheme					Evaluation Scheme					TOTAL
			L	T	P	S L	Credit	Scheme	Theory		Practical		
									Max.	Min. Passing	Max .	Min. Passing	
0URAPC301	F	Engineering Mathematics III	3	1	0	5	4	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC302	F	Fundamental of Robotics	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC303	F	Drives and Control	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC304	F	Machine Drawing &CAD	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC305	F	Analog and Digital Electronics Engg.	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAVE306	F	Environmental Studies	2	0	0	3	2	ISE	50	40*	-	-	50
0URAHM307	F,E	Engineering Economics	2	0	0	3	2	ISE	50	40*	-	-	50
0URAPC308	F,E	Analog and Digital Electronics Lab I	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE			25		
0URAPC309	F	Drives and Control Lab II	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE			25		
0URAPC310	F	Machine Drawing &CAD Lab III	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE			25		
RAVS311	F	VSEC Lab	0	0	2	1	1	ISE	-	-	50	25**	50
TOTAL			19	1	08	29	24	TOTAL MARKS					800
Total Contact Hours Per Week			28										

Course Category	Program Core Course	Program Elective Course	Open Elective Course	Multi Disciplinary Minor Course	Value Education	Vocational and Skill Enhancement Course	Ability Enhancement Course	Humanities and Management Course	Internship	Project	Co-curricular Courses	Total
	PC	PE	OE	MD	VE	VS	AE	HM	IR	PR	CC	
Credit	19	-	-	-	2	1	-	2	-	-	-	24

ISE :-In semester evaluation, MSE: - Mid Semester Examination, ESE: - End Semester Examination

Note1- * - ESE-40% and Combined together ISE+MSE+ESE needs to be 40% for Theory courses for passing

** - ISE-40%, ESE-50% and Combined together needs to be 50% for Lab courses for passing

Note 2- Internship I: Students are expected to complete 60 hours of internship after the third semester, and its evaluation will be conducted in the fourth semester.

Chairman -BOS



Member Secretary-AC

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S.Y. B.Tech SEMESTER IV

Course Code	Course Domain	Course Name		Teaching Scheme					Evaluation Scheme					Total
									Scheme	Theory		Practical		
			L	T	P	SL	Credit	Max.		Min. Passing	Max.	Min. Passing		
0URAPC401	F	Introduction to AI	3	-	-	4	3	ISE	20	40*	-	-	100	
								MSE	20					
								ESE	60					
0URAPC402	F	Strength of Materials	3	0	0	4	3	ISE	20	40*	-	-	100	
								MSE	20					
								ESE	60					
0URAPC403	F	Machine Design	3	0	0	4	3	ISE	20	40*	-	-	100	
								MSE	20					
								ESE	60					
0URAPC404	F	Sensors Actuators in Robotics	3	0	0	4	3	ISE	20	40*	-	-	100	
								MSE	20					
								ESE	60					
0URAMD405	F	MDM I	3	0	0	4	3	ISE	20	40*	-	-	100	
								MSE	20					
								ESE	60					
0URAVE406	F,E	Universal Human Values	2	0	0	3	2	ISE	50	40*	-	-	50	
0URAHM407	F	Entrepreneurship Development	2	0	0	3	2	ISE	50	40*	-	-	50	
0URAPC408	F	AI Tools Programming Lab IV	0	0	2	1	1	ISE	-	-	25	25**	50	
								ESE			25			
0URAPC409	F	Strength of Materials Lab IV	0	0	2	1	1	ISE	-	-	25	25**	50	
								ESE			25			
0URAAE410	F	Ability Enhancement Lab	0	0	2	1	1	ISE	-	-	50	25**	50	
0URAIR411	F,E	Internship-I	0	0	4	3	2	ISE	-	-	50	25**	50	
TOTAL			19	0	10	32	24	TOTAL MARKS					800	
Total Contact Hours Per Week			29											

Course Category	Programme Core Course	Programme Elective Course	Open Elective Course	Multi Disciplinary Minor Course	Value Education	Vocational and Skill Enhancement Course	Ability Enhancement Course	Humanities and Management Course	Internship	Project	Co-curricular Courses	Total
	PC	PE	OE	MD	VE	VS	AE	HM	IR	PR	CC	
Credit	14	-	-	3	2	-	1	2	-	2	-	24

ISE :- In semester evaluation, MSE: - Mid Semester Examination, ESE: - End Semester Examination

Note- * - ESE-40% and Combined together ISE+MSE+ESE needs to be 40% for Theory courses for passing

** - ISE-40%, ESE-50% and Combined together needs to be 50% for Lab courses for passing

Total Credit in SY

SEM-I	SEM-II	SEM-III	SEM-IV	TOTAL
22/20	20/22	24	24	90


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Department of Robotics and AI Engineering

Multidisciplinary Minor I

Sr. no	Course code	Subject
1	0URAMD405	Fundamentals of Robotics

VSEC Lab

Sr. no	Course code	Subject
1	0UMTVS311	Programmable Logic Control and SCADA

Ability Enhancement Lab

Sr. no	Course code	Subject
1	0UMTAE410	Technical Report Writing with Ethics


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Department of Robotics and AI Engineering

T.Y. B.Tech SEMESTER V

Course Code	Course Domain	Course Name	Teaching Scheme					Evaluation Scheme					TOTAL
			L	T	P	SL	Credit	Scheme	Theory		Practical		
									Max.	Min. Passing	Max.	Min. Passi	
0URAPC501	F	Manufacturing Process	3	0	0	4	3	ISE1	10	40*	-	-	100
								MSE	20				
								ISE2	10				
								ESE	60				
0URAPC502	F	Embedded System	3	0	0	4	3	ISE1	10	40*	-	-	100
								MSE	20				
								ISE2	10				
								ESE	60				
0URAPE503	F	PEC I	3	0	0	4	3	ISE1	10	40*	-	-	100
								MSE	20				
								ISE2	10				
								ESE	60				
0URAOE504	F	OE I (MOOC)	3	0	0	4	3	ISE1	10	40*	-	-	100
								MSE	20				
								ISE2	10				
								ESE	60				
0URAMD505	F	MDM II	3	0	0	4	3	ISE1	10	40*	-	-	100
								MSE	20				
								ISE2	10				
								ESE	60				
0URAVE506	F	Constitution of India	2	0	0	3	2	ISE	50	25*	-	-	50
0URAPC507	F,E	Smart Manufacturing Lab VI	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE			25		
0URAPC508	F	Embedded System Lab VII	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE			25		
0URAVS509	F	Vocational and Skill Enhancement Lab	0	0	2	1	1	ISE	-	-	50	25**	50
0URAAE510	F	Ability Enhancement Course	2	0	0	3	2	ISE	50	40*	-	-	50
0URAPR511	F,E	Mini Project	0	0	2	1	1	ISE	-	-	25	13**	50
								ESE	-	-	25	13**	
0URACC512	F	Co –curricular Courses	0	0	2	1	1	ISE	-	-	50	25**	50
TOTAL			17	0	10	28	24	TOTAL MARKS					850
Total Contact Hours Per Week			27										

Course Category	Programme Core Course	Programme Elective Course	Open Elective Course	Multi Disciplinary Minor Course	Value Education	Vocational and Skill Enhancement Course	Ability Enhancement Course	Humanities and Management Course	Internship	Project	Co-curricular Courses	Total
	PC	PE	OE	MD	VE	VS	AE	HM	IR	PR	CC	
Credit	8	3	3	3	-	1	2	-	-	1	1	22

ISE :-In semester evaluation, MSE: - Mid Semester Examination, ESE: - End Semester Examination

Note1- * - ESE-40% and Combined together ISE+MSE+ESE needs to be 40% for Theory courses for passing

** - ISE-40%, ESE-50% and Combined together needs to be 50% for Lab courses for passing

Note 2- Internship II: Students are expected to complete 60 hours of internship after the fifth semester, and its evaluation will be conducted in the sixth semester

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Department of Robotics and AI Engineering

T.Y. B.Tech SEMESTER VI

Course Code	Course Domain	Course Name	Teaching Scheme					Evaluation Scheme					Total
			L	T	P	SL	Credit	Scheme	Theory		Practical		
									Max.	Min. Passing	Max.	Min. Passing	
0URAPC601	F	Machine Learning	3	0	-	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC602	F	Industrial Hydraulics and Pneumatics	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPE603	F	PEC II	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPE604	F	PEC III	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAOE605	F	OE II	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAMD606	F	MDM III	2	0	0	3	2	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAVS607	F,E	Vocational and Skill Enhancement Lab	0	0	2	1	1	ISE	-	-	50	25**	50
0URAPC608	F	Machine Learning Lab VIII	0	0	2	1	1	ISE	-	-	25	13**	50
								ESE			25	13**	
0URAPC609	F	Industrial Hydraulics and Pneumatics IX	0	0	2	1	1	ISE	-	-	25	13**	50
								ESE			25	13**	
0URAPR610	F,E	Project Phase-I	0	0	4	3	2	ISE	-	-	25	13**	50
								ESE	-	-	25	13**	
0URAIR611		Internship-II	0	0	4	3	2	ISE	-	-	50	25**	50
TOTAL			17	0	14	32	24	TOTAL MARKS					850
Total Contact Hours Per Week			31										

Course Category	Programme Core Course	Programme Elective Course	Open Elective Course	Multi Disciplinary Minor Course	Value Education	Vocational and Skill Enhancement Course	Ability Enhancement Course	Humanities and Management Course	Internship	Project	Co-curricular Courses	Total
	PC	PE	OE	MD	VE	VS	AE	HM	IR	PR	CC	
Credit	8	6	3	2	-	1	-	-	2	2	-	24

ISE :-In semester evaluation, MSE: - Mid Semester Examination, ESE: - End Semester Examination

Note- * - ESE-40% and Combined together ISE+MSE+ESE needs to be 40% for Theory courses for passing

** - ISE-40%, ESE-50% and Combined together needs to be 50% for Lab courses for passing

Total Credit in TY

SEM-I	SEM-II	SEM-III	SEM-IV	SEM-V	SEM-VI	TOTAL
22/20	20/22	24	24	24	24	138

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Zeroth Version



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FACULTY OF ENGINEERING

Department of Robotics and AI Engineering

List of NPTEL Courses in Open Electives I

Sr. No.	Term	Discipline	Course Name	WEEK	Link
1.	I	Economics	Economic Environment and Business Strategy	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_ec16/preview
2.		Multidisciplinary	Intellectual Property Portfolio Management	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_ge51/preview
3.		Humanities and Social Science	Soft Skill Development	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_hs142/preview
4.		Multidisciplinary	Research Methodology	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_ge66/preview
5.		Management	Patent Search for Engineers and Lawyers	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_mg143/preview
6.		Humanities and Social Science	Energy Economics and Policy	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_hs136/preview
7.		Humanities and Social Science	Developing Soft Skills and Personality	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_hs174/preview
8.		Management	Marketing Management - I	8 Weeks	https://onlinecourses.nptel.ac.in/no_c25_mg115/preview
9.	II	Management	Yoga and Positive Psychology for Managing Career and Life	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_mg14/preview
10.		Management	Ethics in Engineering Practice	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_mg42/preview
11.		Humanities and Social Sciences	Introduction to Psychology	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_hs42/preview
12.		Humanities and Social Sciences	Modernisation and Creative Communication	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_hs50/preview
13.		Multidisciplinary	Roadmap for Patent Creation	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_ge18/preview
14.		Humanities and Social Sciences	Introduction on Intellectual Property to Engineers and Technologists	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_hs62/preview
15.		Multidisciplinary	Industry 4.0: Managing The Digital Transformation	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_ge04/preview
16.		Management	Business Development: From Start to Scale	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_mg50/preview
17.		Multidisciplinary	Introduction to Industry 4.0 and Industrial Internet of Things	8 Weeks	https://onlinecourses.nptel.ac.in/noc26_cs38/preview

Open Elective II

Sr. No.	Semester	Course Code	Course Name	Credit
1	V	0URAOE504	MOOC	3
2	VI	0URAOE605	NPTEL	3
Total Credits				6

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Program Elective I

Sr. no	Track	Course code	Subject
1	Artificial Intelligence	OURAPE503A	Problem solving & search algorithms
2	Automation	OURAPE503B	PLC and SCADA and Vision Sensors
3	Robotics	OURAPE503C	Robotic Programming
4	Embedded Systems	OURAPE503D	Embedded Programming

Program Elective II

Sr. no	Track	Course code	Subject
1	Artificial Intelligence	OURAPE603A	Programming for AI
2	Automation	OURAPE603B	Digital Twin
3	Robotics	OURAPE603C	Introduction to Application of AI to Robotics
4	Embedded Systems	OURAPE603D	Microprocessor and Microcontroller

Program Elective III

Sr. no	Track	Course code	Subject
1	Artificial Intelligence	OURAPE604A	Machine Learning with Big Data Analytics
2	Automation	OURAPE604B	Advanced Manufacturing Process
3	Robotics	OURAPE604C	Microrobotics
4	Embedded Systems	OURAPE604D	Introduction to Internet of Things

Multidisciplinary Minor II

Sr. no	Course code	Subject
1	OURAMD505	Sensors Actuators in Robotics

Multidisciplinary Minor III

Sr. no	Course code	Subject
1	OURAMD605	Robotic Programming

√SEC COURSE--

Sr. no	Course code	Subject
1	0UMTVS509	Industrial Robotics Programming Lab
2	0UMTVS607	Manufacturing Process Lab

Ability Enhancement Course

Sr. no	Course code	Subject
1	0UMTAE510	Leadership and Team Building

Co-curricular Courses

Sr. no	Course code	Subject
1	0UMTCC512	PCB Design LAB


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Department of Robotics and AI Engineering

B.Tech SEMESTER VII

Course Code	Course Domain	Course Name	Teaching Scheme					Evaluation Scheme					TOTAL
			L	T	P	SL	Credit	Scheme	Theory		Practical		
									Max.	Min. Passing	Max .	Min. Passing	
0URAPC701	F	Advanced Manufacturing and Robotics XIV	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC702	F	Robot Safety & Maintenance XI	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPE703	F	PEC IV	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPE704	F	PEC V	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAMD705	F	MDM IV	3	0	0	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0URAPC706	F,E	Advanced Manufacturing Technologies Lab XIV	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE	-	-	25		
0URAPC707	F,E	Robot Safety & Maintenance Lab XI	0	0	2	1	1	ISE	-	-	25	25**	50
								ESE	-	-	25		
0URAPR708	F	Project Phase- II	0	0	8	6	4	ISE	-	-	50	25**	100
								ESE			50		
0URAIR709	F,E	Co –curricular Courses	0	0	2	1	1	ISE	-	-	50	25**	50
TOTAL			15	0	14	29	22	TOTAL MARKS					750
Total Contact Hours Per Week			29										

Course Category	Programme Core Course	Programme Elective Course	Open Elective Course	Multi Disciplinary Minor Course	Value Education	Vocational and Skill Enhancement Course	Ability Enhancement Course	Humanities and Management Course	Internship	Project	Co – curricular Courses	Total
	PC	PE	OE	MD	VE	VS	AE	HM	IR	PR	CC	
Credit	8	6	-	3	-	-	-	-	-	4	1	22

ISE :-In semester evaluation, MSE: - Mid Semester Examination, ESE: - End Semester Examination
 Note1- * - ESE-40% and Combined together ISE+MSE+ESE needs to be 40% for Theory courses for passing
 ** - ISE-40%, ESE-50% and Combined together needs to be 50% for Lab courses for passing


 Chairman –BOS




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Department of Robotics and AI Engineering

B.Tech SEMESTER VIII

Course Code	Course Domain	Course Name	Teaching Scheme					Evaluation Scheme				Total	
			L	T	P	SL	Credit	Scheme	Theory		Practical		
									Max.	Min. Passing	Max.		Min. Passing
0OURAPE801	F	PEC VI (MOOC)	2	-	-	4	3	ISE	20	40*	-	-	100
								MSE	20				
								ESE	60				
0OURAIR802	F,E	Internship- III	-	-	2	25	8	ISE	-	-	100	100**	200
								ESE			100		
TOTAL			2	0	2	29	11	TOTAL MARKS					300
Total Contact Hours Per Week			4										

Course Category	Programme Core Course	Programme Elective Course	Open Elective Course	Multidisciplinary Minor Course	Value Education	Vocational and Skill Enhancement Course	Ability Enhancement Course	Humanities and Management Course	Internship	Project	Co-curricular Courses	Total
	PC	PE	OE	MD	VE	VS	AE	HM	IR	PR	CC	
Credit	-	3	-	-	-	-	-	-	8	-	-	11

ISE :-In semester evaluation, MSE: - Mid Semester Examination, ESE: - End Semester Examination

Note1- * - ESE-40% and Combined together ISE+MSE+ESE needs to be 40% for Theory courses for passing

** - ISE-40%, ESE-50% and Combined together needs to be 50% for Lab courses for passing

Note 2- Internship III: Students are expected to complete 240 hours of internship in the same semester.

Total Credit in BTech

SEM-I	SEM-II	SEM-III	SEM-IV	SEM-V	SEM-VI	SEM-VII	SEM-VIII	TOTAL
22/20	20/22	24	24	24	24	22	11	173

Program Elective IV

Sr. no	Track	Course code	Subject
1	Artificial Intelligence	0OURAPE703A	Data Science
2	Automation	0OURAPE703B	Industry 4.0
3	Robotics	0OURAPE703C	Machine Vision
4	Embedded Systems	0OURAPE703D	Control system

Program Elective V

Sr. no	Track	Course code	Subject
1	Artificial Intelligence	0OURAPE704A	AI Ethics and Responsible AI
2	Automation	0OURAPE704B	Unmanned Aerial Vehicle

Program Elective VI (NPTEL)

Sr. no	Course code	Subject
1	0OURAPE801	Advance Robotics

Multidisciplinary Minor IV

Sr. no	Course code	Subject
1	0OURAMD705	Advance Robotics & AI

Co-curricular Courses

Sr. no	Course code	Subject
1	0OURAIR709	Additive Manufacturing (3D Printing)

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