

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

III Semester B.Tech. (Robotics & Artificial Intelligence)

III Semester B.Tech. (Robotics & Artificial Intelligence)														
Sr. No.	Course Code	Category	Course Name	Hours/ Week			Credits	Maximum Marks					Minimum Passing Marks	
				L	T	P		Theory		Practical		Total		
								Internal	University	Internal	University			
1	BTechRAI301T	Basic Science Course	Discrete Mathematics and Graph Theory	3	1	0	4.00	30	70	-	-	100	45	
2	BTechRAI302T	Professional core courses	Operating Systems	3	0	0	3.00	30	70	-	-	100	45	
3	BTechRAI303T	Professional core courses	Principles of Robotics	3	0	0	3.00	30	70	-	-	100	45	
4	B.TechRAI304T	Professional core courses	Data Structures Algorithms	3	1	0	4.00	30	70	-	-	100	45	
5	BTechRAI304P	Professional core courses	Data Structures AlgorithmsLab	0	0	2	1.00	-	-	25	25	50		25
6	BTechRAI305T	Engineering Sciences	Analog and Digital Circuit	3	1	0	4.00	30	70			100	45	
7	BTechRAI305P	Engineering Sciences	Analog and Digital Circuit Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTechRAI306P	Professional core courses	Professional Skills (Python)	0	0	2	1.00			25	25	50		25
9	BTechRAI307T	HSMC	Universal Human Values	2	0	0	2.00	15	35			50	23	
10	BTechRAI308T	Mandatory Audit Course	Environmental Science	2	0	0	Audit	-	-	-	-	Audit	-	
Total				19	3	6	23.00	165	385	75	75	700		

Dr. S. S. Shirsalkar

Dr. L. Patil

Dr. L. Patil

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

IV Semester B.Tech. (Robotics & Artificial Intelligence)

Sr. No.	Course Code	Category	Course Name	Hours/ Week			Credit s	Maximum Marks					Minimum Passing Marks	
				L	T	P		Theory		Practical		Total		
								Internal	University	Internal	University			
1	BTechRAI401T	Professional core courses	Introduction to AI	3	0	0	3.00	30	70	-	-	100	45	
2	BTechRAI402T	Professional Core courses	Computer Networks	3	0	0	3.00	30	70	-	-	100	45	
3	BTechRAI403T	Professional Core courses	Robotics Sensor Technology	3	0	0	3.00	30	70	-	-	100	45	
4	BTechRAI404T	Professional core courses	Object Oriented Programming	3	0	0	3.00	30	70	-	-	100	45	
5	BTechRAI404P	Professional core courses	Object Oriented Programming Lab	0	0	2	1.00	-	-	25	25	50		25
6	BTechRAI405T	Professional core courses	Robot Kinematics	3	0	0	3.00	30	70			100	45	
7	BTechRAI405P	Professional Core courses	Robot Kinematics Lab	0	0	2	1.00	-	-	25	25	50		25
8	BTechRAI406T	Professional Core courses	Intelligent Embedded System	3	1	0	4.00	30	70	-	-	100	45	
9	BTechRAI406P	Professional Core courses	Intelligent Embedded System Lab	0	0	2	1.00	-	-	25	25	50	-	25
10	BTechRAI407P	Project Work/Internship	Internship	0	0	2	1.00			50		50		
Total				18	1	8	23.00	180	420	125	75	800		

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Scheme of Teaching & Examination of Bachelor of Technology

V Semester B.Tech. (Robotics & Artificial Intelligence)

Department of Bachelor of Technology V Semester B.Tech. (Robotics & Artificial Intelligence)														
Sr. No.	Course Code	Category	Course Name	Hours/ Week			Credits	Maximum Marks					Minimum Passing Marks	
				L	T	P		Theory		Practical		Total		
								Internal	University	Internal	University		Theory	Practical
1	BTechRAI501T	Professional Core courses	Robot Dynamics	3	0	0	3.00							
2	BTechRAI501P	Professional core courses	Robot Dynamics	0	0	2	1.00	30	70			100	45	
3	BTechRAI502T	Professional Core courses	Machine Learning Algorithms	3	1	0	4.00			25	25	50	45	25
4	BTechRAI502P	Professional core courses	Machine Learning Algorithms lab	0	0	2	1.00	30	70	-	-	100	45	
6	BTechRAI503T	Professional core courses	Robotic Drive System	3	0	0	3.00			25	25	50	45	25
7	BTechRAI504T	Professional core courses	Design and Analysis of Algorithms	3	0	0	3.00	30	70	-	-	100	45	
8	BTechRAI504P	Professional core courses	Design and Analysis of Algorithms Lab	0	0	2	1.00	30	70	-	-	100	45	
9	BTechRAI505T	Professional Elective Course	Elective-I	3	0	0	3.00	-	-	25	25	50		25
10	BTechRAI506T	HSMC	Effective Technical Communication	2	0	0	2.00	30	70			100	45	
Total				17	1	6	21	15	35			50	23	
								165	385	75	75	700		

Elective I-1. Field and Service Robotics 2. Theory of computation 3. Wireless Communication Technologies 4. Drone & Autonomous Systems

Elective I-1. Field and Service Robotics 2. Theory of computation 3. Wireless Communication Technologies 4. Drone & Automation System





RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
Scheme of Teaching & Examination of Bachelor of Technology
VI Semester B.Tech. (Robotics & Artificial Intelligence)

Department of Bachelor of Technology														
VI Semester B.Tech. (Robotics & Artificial Intelligence)														
Sr. No	Course Code	Category	Course Name	Hours/ Week			Credits	Maximum Marks					Minimum Passing Marks	
				L	T	P		Theory		Practical		Total		
								Internal	University	Internal	University			
1	BTechRAI601T	Professional Core courses	Deep Learning	3	0	0	3.00							
2	BTechRAI601P	Professional Core courses	Deep Learning Lab	0	0	2	1.00	30	70	-	-	100	45	
3	BTechRAI602T	Professional core courses	Automation System Design	3	0	0	3.00			25	25	50		25
4	BTechRAI602P	Professional Core courses	Automation System Design lab	0	0	2	1.00	30	70	-	-	100	45	
5	BTechRAI603T	Professional Core courses	Internet of Things and its Application	3	0	0	3.00			25	25	50		25
6	BTechRAI603P	Professional Core courses	Internet of Things and its Application Lab	0	0	2	1.00	30	70	-	-	100	45	
7	BTechRAI604T	Professional Elective course	Elective 2	3	0	0	3.00	-	-	25	25	50		25
8	BTechRAI605T	Open Elective course	Open Elective-1	3	0	0	3.00	30	70			100	45	
9	BTechRAI606T	HSMC	Organizational Behavior	2	0		Audit	30	70			100	45	
10	BTechRAI607P	Project Work/Internship	Mini Project/Internship	0	0	6	3.00					Audit		
Total				17	0	12	21.00	150	350	100	100	700	-	25

Elective II: 1. Compiler Design 2. Block Chain & Cyber Security. 3. Robotics and Intelligent Systems 4. Robotic Process Automati

Open Elective -1: 1. Current trend in Image processing 2. Cloud Computing 3. Data Science 4. Machine Learning

Elective II: 1. Compiler Design 2. Block Chain & Cyber Security. 3. Robotics and Intelligent Systems 4. Robotic Process Automation

Open Elective -1: 1. Current trend in Image processing and pattern recognition 2. Mobile robotics

RASHTRANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
Scheme of Teaching & Examination of Bachelor of Technology
VII Semester B.Tech. (Robotics & Artificial Intelligence)

VII Semester B.Tech. (Robotics & Artificial Intelligence)														
Sr. No.	Course Code	Category	Course Name	Hours/ Week			Credits	MaximumMarks					Minimum Passing Marks	
				L	T	P		Theory		Practical		Total		
								Internal	University	Internal	University		Theory	Practical
1	BTechRAI701T	Professional core courses	Robot Programming	3	0	0	3.00	30	70	-	-	100	45	
2	BTechRAI701P	Professional core courses	Robot Programming Lab	0	0	2	1.00			25	25	50		25
3	BTechRAI702T	Professional core courses	Data Analytics	3	0	0	3.00	30	70	-	-	100	45	
4	BTechRAI702P	Professional core courses	Data Analytics Lab	0	0	2	1.00			25	25	50		25
5	BTechRAI703T	Profession al Elective Course	Elective-III	3	0	0	3.00	30	70	-	-	100	45	
6	BTechRAI704T	Open Elective	Open Elective-II	3	0	0	3.00	30	70	-	-	100	45	
7	BTechRAI705P	Project Work	Project		0	6	3.00	-	-	50	50	100	45	
Total				12	0	10	17.00	120	280	100	100	600		50

Elective III: 1. Digital Signal Processing for Robotics

Elective III: 1. Digital Signal Processing for Robotics 2. Embedded Robotics 3. Decision Making and Expert system 4. Computer Vision





RASHTRA NANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
Scheme of Teaching & Examination of Bachelor of Technology

VIII

Semester B.Tech. (Robotics & Artificial Intelligence)

VIII Semester B.Tech. (Robotics & Artificial Intelligence)														
Sr. No.	Course Code	Category	Course Name	Hours/Week			Credits	Maximum Marks					Minimum Passing Marks	
				L	T	P		Theory		Practical		Total		
								Internal	University	Internal	University			
1	BTechRAI801T	Professional Elective Course	Elective-IV	3	0	0	3.00	30	70	-	-	100	45	
2	BTechRAI802T	Professional Elective Course	Elective-V	3	0	0	3.00	30	70	-	-	100	45	
3	BTechRAI803P	Project Work	Project	0	0	16	8.00			100	100	200		100
Total				6	0	16	14.00	60	140	100	100	400		

ative IV: 1. Cloud Computing 2. Robotics & Industrial Applications 3. Additive Manufacturing

Elective IV: 1. Cloud Computing 2. Robotics & Industrial Applications 3. Medical Robotics 4. Basics of 3D Printing and Additive Manufacturing
Elective V: 1. Cognitive Robotics 2. Reinforcement learning 3. Big Data Analytics using Hadoop 4. Software Engineering

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

Credit Structure

B.Tech. Robotics and Artificial Intelligence

Sr.No.	Semester	Category							Total
		BSC	ESC	HSMC	PCC	PEC	OEC	PROJ	
1.	I	09	07	03	-	-	-	-	19
2	II	09	13	-	-	-	-	-	22
3	III	04	05	02	12	-	-	-	23
4	IV	-	-	-	22	-	-	01	23
5	V	--	-	02	16	03	-	-	21
6	VI	-	-	-	12	03	03	03	21
7	VII	-	-	-	08	03	03	03	17
8	VII I	-	-	-	-	06	-	08	14
Total		22	25	07	70	15	06	15	160



