



**JSPM's**  
**RAJARSHI SHAHU COLLEGE OF ENGINEERING**  
**TATHAWADE, PUNE-33**  
 (An Autonomous Institute Affiliated to Savitribai Phule Pune University, Pune)



**S. Y. B. Tech (Automation and Robotics)**

**Academic Year -2024-2025 (Semester –III)**

**Proposed Structure Semester -III**

**(Level 5 - UG-Diploma/ Diploma-Eng) -Semester III**

Course	Course Code	Course	Teaching Scheme				Credit Cr	Examination Scheme				Total Marks	Ownership
			L	T	P	Hr		ISE	MSE	ESE	TW		
BSC	ES2207T	Engineering Mathematics -III	3	0	0	3	3	20	30	50	-	100	Mathematics
PCC	AR2201T	Manufacturing Technology and Metrology	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR2201L	Manufacturing Technology and Metrology Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PCC	AR2202T	Electrical Machines and Control	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR2202L	Electrical Machines and Control Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PCC	AR2203T	Principles of Automation and Robotics	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR2203L	Principles of Automation and Robotics Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PCC	AR2204T	Innovation and Entrepreneurship	2	-	-	2	2	20	30	50	-	100	A & R
PCC	AR2205T	Industrial Psychology	2	-	-	2	2	20	30	50	-	100	A & R
HSSM	HS2203T	Universal Human Values and Ethics	2	-	-	2	2	20	30	50	-	100	Humanities
VEC	AR2206L	Introduction to Python Programming & Data Science- I	-	-	2	2	1	ISCE: 30		20	-	50	A & R
<b>Total</b>			<b>18</b>	<b>-</b>	<b>08</b>	<b>26</b>	<b>22</b>					<b>900</b>	

Dr. A. M. Badadhe  
BOS Chairman (A & R)

Dr. Ram Joshi  
Dean Academics, RSCOE, Pune

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Director, RSCOE, Pune



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**S. Y. B. Tech (Automation and Robotics)**

**Academic Year -2024-2025 (Semester –IV)**

**Proposed Structure Semester -IV**

**(Level 5 - UG-Diploma/ Diploma-Eng) -Semester IV**

Course	Course Code	Course	Teaching Scheme				Credit	Examination Scheme				Total Marks	Ownership
			L	T	P	Hr		ISE	MSE	ESE	TW		
PCC	AR2207T	Sensors and Instrumentation	3	0	0	3	3	20	30	50	-	100	A & R
Skill Course (VSEC)	AR2207L	Sensors and Instrumentation Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PCC	AR2208T	Hydraulic and Pneumatic Systems	3	0	0	3	3	20	30	50	-	100	A & R
Skill Course (VSEC)	AR2208L	Hydraulic and Pneumatic Systems Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PCC	AR2209T	Automatic Control System	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR2209L	Automatic Control System Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PCC	AR2210L	Product Development and Modeling	-	-	2	2	1	ISCE: 30		20	-	50	A & R
HSSM	ES2206T	Environmental Science and Engineering	2	-	-	2	2	20	30	50	-	100	Humanities
MDM	ARM2201T	Multi-Disciplinary Minor -I	3	0	0	3	3	20	30	50	-	100	A & R
HSSM (AEC)	HS2206L	Soft skills	-	-	2	2	1	ISCE: 30		20	-	50	Humanities
HSSM	HS2205T	Economics	2	-	-	2	2	20	30	50	-	100	Humanities
CC	AR2211L	Co-Curricular Course-2	-	-	2	2	1	ISCE: 50			-	50	A & R
<b>Total</b>			<b>16</b>	<b>-</b>	<b>12</b>	<b>28</b>	<b>22</b>					<b>900</b>	

**Abbreviations:**

**L** – Lecture, **T** – Tutorial, **P** – Practical, **Hr** – Hours, **C** – Credits, **ISE** – In Semester Evaluation, **MSE** – Mid Semester Evaluation, **ESE** – End Semester Evaluation

**Notes:**

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (ISCE consists of ISE and MSE). The ESE is a separate head of passing.

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**List of Exit Courses after completion of Semester III and IV**

1. Exit option is available for students those who have earned the total 88 credits at the End of fourth Semester.
2. Student who wants to avail the exit option after second year has to earn additional 8 credits from the list of courses shown below.
3. These courses student have to complete within summer vacation after 2nd Year.
4. After fulfillment as mentioned in 1 to 3 above, Students can earn UG-Diploma/ Diploma-Eng and same will be issued by the Institute.

Sr. No.	Course code	Name	Credits
1.	EX-AR2201	Certification of PLC and SCADA Software	2
2.	EX- AR2202	Programming with Python	2
3.	EX- AR2203	Certification on 3D Modeling Software	2
4.	EX- AR2204	Certification on Robotics System Simulation	2
5.	EX- AR2205	Minor Project on Embedded System/Mechatronics System	2
6.	EX- AR2206	Internship in Automation Industry (4 Weeks)	2

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**T. Y. B. Tech (Automation and Robotics)**

**Academic Year -2025-2026 (Semester –V)**

**Proposed Structure Semester -V**

**(Level 5.5 - B. Voc./ B.Sc. Engg) -Semester V**

Course	Course Code	Course	Teaching Scheme				Credit	Examination Scheme				Total Marks	Ownership
			L	T	P	Hr		ISE	MSE	ESE	TW		
PCC	AR3201T	Computer Integrated Manufacturing Systems	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR3202T	Design of Machine Elements and Transmission System	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR3203T	PLC and SCADA	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR3203L	PLC and SCADA Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PEC	AR3204T	Professional Elective- I	3	0	0	3	3	20	30	50	-	100	A & R
PEC	AR3204L	Professional Elective- I Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
MDM	ARM3201T	Multi-Disciplinary Minor -II	3	0	0	3	3	20	30	50	-	100	A & R
MDM	ARM3201L	Multi-Disciplinary Minor –II Lab	-	-	2	2	1	ISCE: 30		20	-	50	A & R
OE		Open Elective-I	3	0	0	3	3	20	30	50	-	100	Other Department
CC	AR3205L	Co-Curricular Course-3	-	-	2	2	1	ISCE: 50			-	50	A & R
<b>Total</b>			<b>18</b>	<b>-</b>	<b>8</b>	<b>26</b>	<b>22</b>					<b>800</b>	

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**T. Y. B. Tech (Automation and Robotics)**

**Academic Year -2025-2026 (Semester –VI)**

**Proposed Structure Semester -VI**

**(Level 5.5 - B. Voc./ B.Sc. Engg) -Semester VI**

Course	Course Code	Course	Teaching Scheme				Credit	Examination Scheme				Total Marks	Ownership
			L	T	P	Hr		ISE	MSE	ESE	TW		
PCC	AR3206T	Robotics Kinematics and Dynamics	3	0	0	3	3	20	30	50	-	100	A & R
PCC	AR3206L	Robotics Kinematics and Dynamics Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PEC	AR3207T	Professional Elective- II	3	0	0	3	3	20	30	50	-	100	A & R
PEC	AR3207L	Professional Elective- II Laboratory	0	0	2	2	1	ISCE: 30		20	-	50	A & R
PEC	AR3208T	Professional Elective- III	3	0	0	3	3	20	30	50	-	100	A & R
PEC	AR3208L	Professional Elective- III Laboratory	-	-	2	2	1	ISCE: 30		20	-	50	A & R
MDM	ARM3202T	Multi-Disciplinary Minor -III	3	0	0	3	3	20	30	50	-	100	A & R
OE		Open Elective- II	3	0	0	3	3	20	30	50	-	100	Other Department
HSSM (VSEC)	AR3209L	Object Oriented Programming	-	1	2	3	2	ISCE: 30		20	50	100	A & R
Project	AR3210L	Engineering Innovation and Society-I	-	-	4	4	2	ISCE: 50		50	-	100	A & R
<b>Total</b>			<b>15</b>	<b>01</b>	<b>12</b>	<b>28</b>	<b>22</b>					<b>850</b>	

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**Notes:**

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**List of Exit Courses after completion of Semester V and VI**

1. Exit option is available for students those who have earned the total 132 credits at the End of sixth Semester.
2. Student who wants to avail the exit option after third year has to earn additional 8 credits from the list of courses shown below.
3. These courses student have to complete within summer vacation after 3<sup>rd</sup> Year.
4. After fulfillment as mentioned in 1 to 3 above, Students can earn **B.Voc./ B.Sc. Engg** and same will be issued by the Institute.

Sr. No.	Course code	Name	Credits
1.	EX-AR3201	Certification on Fundamentals of Industry 4.0	2
2.	EX- AR3202	Certification on Augmented Reality and Virtual Reality Simulation Software	2
3.	EX- AR3203	Certification on AI & ML	2
4.	EX- AR3204	Internship at Industry on 3D Printing	2
5.	EX- AR3205	Certification Program on Automation System for suitable Industrial application	2
6.	EX- AR3206	Major Project on Implementation on IIOT	2

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