Symbiosis Institute of Technology, Pune
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1.	**OBJECTIVE**	M.Tech (Robotics and Automation) is a full-time two-year post-graduation programme, which aims at transforming a student into a technically sound professional. This programme aims at providing the students with appropriate theoretical inputs along with adequate hands-on training. The programme includes hands-on experience on Robotics and Automation by theory & practice, development of analytical skills, modelling and simulation skills to identify and analyse problems, propose, and execute solutions in well-equipped labs and training on latest equipment. The syllabus contains cross disciplinary courses such as artificial intelligence, machine learning, Internet of Things in addition to the domain specific professional courses. The mix of these courses has been evolved with an aim to produce professionals who have knowledge not only of Engineering but who are good managers to contribute in a cross-functional team and have human values. The emphasis is to develop all round personality that would enable the students to take up the challenges of the corporate world and become responsible citizens of the society.			
2.	**DURATION (IN MONTHS)**	24 (Full Time)			
3.	**INTAKE**	18			
4.	**RESERVATION**	**I.Within the sanctioned intake**	**a) SC (In Percentage)**	**b) ST (In Percentage)**	**c) Differently abled (In Percentage)**
			15	7.5	3
		II.Over and above the sanctioned intake	**a) Kashmiri Migrants (In Seats)**	**b) International Students (In Percentage)**	
			2	15	
5.	**ELIGIBILITY**	B.Tech./ B.E. in Mechanical /Electronics and Communication/ Computer Science/ Information Technology and other related disciplines with minimum four years duration from any recognized University/Institution of National Importance with a minimum of 50% marks or equivalent grade (45% Marks or equivalent grade for Scheduled Caste/Scheduled Tribes)			
6.	**SELECTION PROCEDURE**	Both GATE qualified and non-GATE candidates are eligible to take admission in M.Tech (Robotics and Automation) Program, as per the following criteria: 1. GATE Qualified candidates: Selection will be based on GATE Score 2. Non-Gate Qualified candidates: An entrance examination will be conducted at SIT and selection will be based on the entrance examination score.			
7.	**MEDIUM OF INSTRUCTION**	English			
8.	**PROGRAMME PATTERN**	Semester			
9.	**COURSE &**	As per Annexure A			

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	SPECIALIZATION				
10.	**FEE**		**Academic Fee p.a**	**Institute Deposit**	**Total**
		Indian Students	185000	20000	205000
		International Students (USD equivalent to INR)	280000	20000	300000
11.	**ASSESSMENT**	All internal courses will have 100% component as internal evaluation at the institute level. All external courses will have 60% internal component and 40% component as external [University] examination. The internal and external will be separate heads of passing.			
12.	**STANDARD OF PASSING**	The assessment of the student for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to O (Outstanding). For all courses, a student is required to pass both internal and external examination separately with a minimum Grade Point of 4 corresponding to Grade P. Students securing less than 40% absolute marks in each head of passing will be declared FAIL. The University awards a degree to the student who has achieved a minimum CGPA of 4 out of maximum of 10 CGPA for the programme.			
13.	**AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE**	Master of Technology (Robotics and Automation) will be awarded at the end of semester IV examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA.			
14.	**CLASSIFICATION OF CREDITS**				

Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
1	23	3	0	0	0	0	26
2	23	4	0	0	0	1*	27
3	13	0	0	0	0	0	13
4	14	0	0	0	0	0	14
Total	**73**	**7**	**0**	**0**	**0**	**0**	**80**

* Satisfactory completion of the non letter grade course 'Integrated Disaster Management' is mandatory for award of degree.

The revised programme structure supersedes the previously approved programme structure dated 08/04/2023 for the programme.

This Programme Structure is aligned with the norms laid down by the University and is approved by the Academic Council.
Hereafter changes (if any) which conform to the policy on "Curriculum Development and Review" would be permissible, subject to revision of the Programme Structure, following the specified processes.

Director - Academics

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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Practical		Examination Scheme Marks		Total Credits	Total
				L	T	Lab	CA	ESE	CA	ESE		
Semester : 1												
Generic Core Courses												
TE7588	0701480101	Programming Tools (Python)	PC	0	0	4	60	40	0	0	2	100
TE7109	0701480102	Research Methodology in engineering	PC	2	0	0	0	0	60	40	2	100
TE7628	0701480103	Advanced Computer Integrated Manufacturing	PC	3	0	0	0	0	90	60	3	150
TE7654	0701480104	Additive Manufacturing	PC	3	0	0	0	0	90	60	3	150
TE7594	0701480105	Additive Manufacturing Lab	PC	0	0	2	30	20	0	0	1	50
TE7630	0701480106	Industrial Robotics	PC	3	0	0	0	0	90	60	3	150
TE7570	0701480107	Robotics lab	PC	0	0	4	60	40	0	0	2	100
TE7639	0701480108	Mechatronics and IoT	PC	3	0	0	0	0	90	60	3	150
TE7578	0701480109	Mechatronics and IoT Lab	PC	0	0	4	60	40	0	0	2	100
TE7656	0701480110	Strategic Project Management	PC	2	0	0	0	0	100	0	2	100
Total				**16**	**0**	**14**	**210**	**140**	**520**	**280**	**23**	**1150**
Generic Elective Course Group												
TE7640	0701480111	Digital Manufacturing	PE	3	0	0	0	0	90	60	3	150
TE7642	0701480112	Signal Processing and Application	PE	3	0	0	0	0	90	60	3	150
TE7644	0701480113	Production Technology	PE	3	0	0	0	0	90	60	3	150
Total Required Credits							**0**	**0**	**90**	**60**	**3**	**150**
Semester : 2												
Generic Core Courses												
TE7645	0701480201	Industrial Internet of Things	PC	2	0	0	0	0	100	0	2	100
F7038	0701480202	Introduction to RPA	PC	2	0	0	0	0	100	0	2	100
TE7647	0701480203	Machine Learning and Artificial Intelligence	PC	3	0	0	0	0	90	60	3	150
TE7500	0701480204	Supervised Machine Learning Lab	PC	0	0	4	60	40	0	0	2	100
TE7652	0701480205	Mechanisms and Robotics	PC	3	0	0	0	0	90	60	3	150
TE7586	0701480206	Mechanisms and Robotics Lab	PC	0	0	2	30	20	0	0	1	50
TE7629	0701480207	Autonomous Technology	PC	3	0	0	0	0	150	0	3	150
TE7569	0701480208	Modelling and Simulation Lab	PC	0	0	4	60	40	0	0	2	100
TE7659	0701480209	Technical Communication Skills	PC	2	0	0	0	0	100	0	2	100
TE7826	0701480210	Applications of Robotic Process Automation	PC	3	0	0	0	0	150	0	3	150

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Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Practical		Examination Scheme Marks		Total Credits	Total
				L	T	Lab	CA	ESE	CA	ESE		
T4005	0701480211	Integrated Disaster Management *		0	0	0	0	0	0	0	Non - Letter Grade	0
Total				**18**	**0**	**10**	**150**	**100**	**780**	**120**	**23**	**1150**
Generic Elective Courses Group - I												
TE7653	0701480212	PLC & SCADA	PE	3	0	0	0	0	90	60	3	150
TE7657	0701480213	Cyber Physical Security and cloud computing	PE	3	0	0	0	0	90	60	3	150
TE7655	0701480214	Machine Vision and Image Processing	PE	3	0	0	0	0	90	60	3	150
TE7651	0701480215	Smart Manufacturing and Digital Twins	PE	3	0	0	0	0	90	60	3	150
Total Required Credits							**0**	**0**	**90**	**60**	**3**	**150**
Generic Elective Courses Group - II												
TE7596	0701480216	PLC Programming Lab	PE	0	0	2	30	20	0	0	1	50
TE7597	0701480217	Cyber Physical Security Lab	PE	0	0	2	30	20	0	0	1	50
TE7598	0701480218	Machine Vision and Image processing Lab	PE	0	0	2	30	20	0	0	1	50
TE7589	0701480219	Smart Manufacturing and Digital Twins Lab	PE	0	0	2	30	20	0	0	1	50
Total Required Credits							**30**	**20**	**0**	**0**	**1**	**50**
Semester : 3												
Generic Core Courses												
T7710	0701480301	Dissertation Phase 1	PIS	0	0	20	300	200	0	0	10	500
F7064	0701480302	Advance PLC and Motion using Mapp Technology	PC	3	0	0	0	0	150	0	3	150
Total				**3**	**0**	**20**	**300**	**200**	**150**	**0**	**13**	**650**
Semester : 4												
Generic Core Courses												
T7714	0701480401	Dissertation Phase 2	PIS	0	0	28	420	280	0	0	14	700
Total				**0**	**0**	**28**	**420**	**280**	**0**	**0**	**14**	**700**

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Annexure A

Abbreviations (Nature)

BS	Basic Sciences
ES	Engineering Sciences
HS	Humanities and Social Sciences
OE	Open Electives
PC	Professional Core
PE	Professional Elective
PIS	Project, Internship, Seminar
PD	Professional Development Course
MC	Mandatory Course
L	Lecture
T	Tutorial
CA	Continuous Assessment
ESE	End Semester Examination
GE	Generic Elective

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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Semester 1	2	24	26	1300
Semester 2	12	15	27	1350
Semester 3	3	10	13	650
Semester 4	0	14	14	700
Total	**17**	**63**	**80**	**4000**