



**Symbiosis Institute of Technology, Pune**  
**Master of Technology (Artificial Intelligence and Machine Learning)**  
**Programme Structure 2022-24**

1.	<b>OBJECTIVE</b>	To generate competent manpower in the emerging areas of AI and Machine Learning. To inculcate among the students an aptitude for engineering and research in the area of AI and ML for generation of better and smarter solutions to real world problems.			
2.	<b>DURATION (IN MONTHS)</b>	24 (Full Time)			
3.	<b>INTAKE</b>	30			
4.	<b>RESERVATION</b>	<b>I. Within the sanctioned intake</b>	<b>a) SC (In Percentage)</b>	<b>b) ST (In Percentage)</b>	<b>c) Differently abled (In Percentage)</b>
			15	7.5	3
		<b>II. Over and above the sanctioned intake</b>	<b>a) Kashmiri Migrants (In Seats)</b>	<b>b) International Students (In Percentage)</b>	
			2	15	
5.	<b>ELIGIBILITY</b>	Engineering Graduate (B.E. / B.Tech.) in any relevant disciplines of Engineering 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.	<b>SELECTION PROCEDURE</b>	GATE score or Entrance Test on python programming or equivalent programming language for non-GATE candidates			
7.	<b>MEDIUM OF INSTRUCTION</b>	English			
8.	<b>PROGRAMME PATTERN</b>	Semester			
9.	<b>COURSE &amp; SPECIALIZATION</b>	As per Annexure A.			
10.	<b>FEE</b>		<b>Academic Fee p.a</b>	<b>Institute Deposit</b>	<b>Total</b>
		<b>Indian Students</b>	185000	20000	205000
		<b>International Students (USD equivalent to INR)</b>	280000	20000	300000
11.	<b>ASSESSMENT</b>	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.	<b>STANDARD OF PASSING</b>	The assessment of the student for each examination is done, based on relative performance. Maximum Grade Point (GP) is 10 corresponding to 0 (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.	<b>AWARD OF DEGREE/ DIPLOMA/ CERTIFICATE</b>	Master of Technology (Artificial Intelligence and Machine Learning) 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 10.00 CGPA.					
14.	<b>CLASSIFICATION OF CREDITS</b>						
Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
1	26	0	0	0	0	0	26
2	22	4	0	0	0	1*	26
3	14	0	0	0	0	0	14
4	14	0	0	0	0	0	14
<b>Total</b>	<b>76</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>
* 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 16/02/2023 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	La b	CA	ESE	CA	ESE		
<b>Semester : 1</b>												
<b>Generic Core Courses</b>												
TE7495	0701490101	Programming in Python	PC	0	0	4	60	40	0	0	2	100
TE7682	0701490102	Maths for Data Science	PC	2	0	0	0	0	60	40	2	100
TE7912	0701490103	Supervised Machine Learning and Advances	PC	4	0	0	0	0	120	80	4	200
TE7913	0701490104	Supervised Machine Learning and Advances Lab	PC	0	0	4	60	40	0	0	2	100
TE7894	0701490105	Exploratory Data Analysis	PC	0	0	4	60	40	0	0	2	100
TE7914	0701490106	Unsupervised Machine Learning and Advances	PC	3	0	0	0	0	90	60	3	150
TE7915	0701490107	Unsupervised Machine Learning and Advances Lab	PC	0	0	2	30	20	0	0	1	50
TE7109	0701490108	Research Methodology in engineering	PC	2	0	0	0	0	60	40	2	100
TE7903	0701490109	Introduction to Deep Learning	PC	3	0	0	0	0	90	60	3	150
TE7904	0701490110	Introduction to Deep Learning Lab	PC	0	0	2	30	20	0	0	1	50
TE7893	0701490111	Data Visualization Tools and Software	PC	0	0	4	60	40	0	0	2	100
TE7902	0701490112	Implementations and Use Cases of Machine Learning Lab	PC	0	0	4	60	40	0	0	2	100
<b>Total</b>				<b>14</b>	<b>0</b>	<b>24</b>	<b>360</b>	<b>240</b>	<b>420</b>	<b>280</b>	<b>26</b>	<b>1300</b>
<b>Semester : 2</b>												
<b>Generic Core Courses</b>												
TE7901	0701490201	Graph Neural Networks	PC	2	0	0	0	0	100	0	2	100
F7052	0701490202	Career Essentials	PC	4	0	0	0	0	200	0	4	200
TE7899	0701490203	Generative Adversarial Networks and Applications	PC	3	0	0	0	0	90	60	3	150
TE7900	0701490204	Generative Adversarial Networks and Applications Lab	PC	0	0	2	30	20	0	0	1	50
TE7908	0701490205	Natural Language Processing and Applications	PC	3	0	0	0	0	90	60	3	150
TE7909	0701490206	Natural Language Processing and Applications Lab	PC	0	0	2	30	20	0	0	1	50
TE7906	0701490207	Machine Vision	PC	3	0	0	0	0	90	60	3	150
TE7907	0701490208	Machine Vision Lab	PC	0	0	2	30	20	0	0	1	50
TE7659	0701490209	Technical Communication Skills	PC	2	0	0	0	0	100	0	2	100
TE7905	0701490210	Machine Learning and Bioinspired Optimization Techniques	PC	2	0	0	0	0	60	40	2	100



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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	0701490211	Integrated Disaster Management *		0	0	0	0	0	0	0	Non - Letter Grade	0
<b>Total</b>				<b>19</b>	<b>0</b>	<b>6</b>	<b>90</b>	<b>60</b>	<b>730</b>	<b>220</b>	<b>22</b>	<b>1100</b>
<b>Generic Elective Courses Group</b>												
TE7910	0701490212	Reinforcement Learning and Applications	PE	3	0	0	0	0	90	60	3	150
TE7897	0701490213	Fundamentals of Responsible AI	PE	3	0	0	0	0	90	60	3	150
TE7895	0701490214	Fundamentals of Multimodal AI	PE	3	0	0	0	0	90	60	3	150
<b>Total Required Credits</b>							<b>0</b>	<b>0</b>	<b>90</b>	<b>60</b>	<b>3</b>	<b>150</b>
<b>Generic Elective Courses Group</b>												
TE7911	0701490215	Reinforcement Learning and Applications Lab	PE	0	0	2	30	20	0	0	1	50
TE7898	0701490216	Fundamentals of Responsible AI Lab	PE	0	0	2	30	20	0	0	1	50
TE7896	0701490217	Fundamentals of Multimodal AI Lab	PE	0	0	2	30	20	0	0	1	50
<b>Total Required Credits</b>							<b>30</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>50</b>
<b>Semester : 3</b>												
<b>Generic Core Courses</b>												
TE7710	0701490301	Dissertation Phase 1	PIS	0	0	20	300	200	0	0	10	500
F7050	0701490302	Full Stack Development and Applications	PC	4	0	0	0	0	200	0	4	200
<b>Total</b>				<b>4</b>	<b>0</b>	<b>20</b>	<b>300</b>	<b>200</b>	<b>200</b>	<b>0</b>	<b>14</b>	<b>700</b>
<b>Semester : 4</b>												
<b>Generic Core Courses</b>												
TE7714	0701490401	Dissertation Phase 2	PIS	0	0	28	420	280	0	0	14	700
<b>Total</b>				<b>0</b>	<b>0</b>	<b>28</b>	<b>420</b>	<b>280</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>700</b>



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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	0	26	26	1300
Semester 2	8	18	26	1300
Semester 3	4	10	14	700
Semester 4	0	14	14	700
<b>Total</b>	<b>12</b>	<b>68</b>	<b>80</b>	<b>4000</b>