

**Symbiosis Institute of Technology, Pune**  
**Bachelor of Technology (Information Technology)**  
**Programme Structure 2018-22**

<b>1.</b>	<b>OBJECTIVE</b>	<p>B.Tech is a full-time four year graduation programme, which aims at transforming a student into a technically sound professional. The syllabus contains courses on basic sciences, technical arts, humanities &amp; liberal arts and 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. Being a professional programme it ensures a healthy balance between theoretical foundation and practical exposure to the present day world. The emphasis is to develop all round personality that would enable the students to take up the challenges of the corporate world and also become responsible citizens of the society.</p>			
<b>2.</b>	<b>DURATION (IN MONTHS)</b>	48 (Full Time)			
<b>3.</b>	<b>INTAKE</b>	60			
<b>4.</b>	<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	
<b>5.</b>	<b>ELIGIBILITY</b>	<p>Passed 10+2 examination with Physics and Mathematics as compulsory subjects along with one of Chemistry/ Biotechnology/ Biology/ Technical Vocational subjects. Obtained at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in the above subjects taken together.</p> <p>B. Tech (Lateral entry to second year) :</p> <p>a) Passed Diploma examination from an AICTE approved Institution; with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in appropriate branch of Engineering / Technology.</p> <p>b) Passed B.Sc. Degree from a recognized University as defined by UGC, with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) and passed XII standard with mathematics as a subject.</p> <p>c) Provided that in case of students belonging to B. Sc. Stream, shall clear the subjects of Engineering Graphics / Engineering Drawing and Engineering Mechanics of the first year Engineering program along with the second year subjects.</p> <p>d) Provided further that, the students belonging to B. Sc. Stream shall be considered only after filling the supernumerary seats in this category with students belonging to the Diploma stream.</p> <p>e) Provided further that students, who have passed Diploma in Engineering and Technology from an AICTE approved Institution or B. Sc. Degree from a recognized University as defined by UGC, shall also be eligible for admission to</p>			

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		the first year Engineering Degree courses subject to vacancies in the first year class in case the vacancies at lateral entry are exhausted. However the admissions shall be based strictly on the eligibility criteria as mentioned in a, b, c, and d above.						
6.	<b>SELECTION PROCEDURE</b>	Merit list by valid score of Symbiosis Entrance Test (SET) or Joint Entrance Examination (JEE - Main) or Maharashtra Common Entrance Test (MHT-CET)						
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>	260000	20000	280000			
		<b>International Students (USD equivalent to INR)</b>	390000	20000	410000			
11.	<b>ASSESSMENT</b>	All internal courses will have 100% component as internal evaluation at the institute level. All external courses will have 40% internal component and 60% 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 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.	<b>AWARD OF DEGREE</b>	Bachelor of Technology (Information Technology) will be awarded at the end of semester VIII examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA.						
14.	<b>NATURE WISE DISTRIBUTION OF CREDITS</b>							
	<b>Semester</b>	<b>Generic Core</b>	<b>Generic Elective</b>	<b>Specialization Core</b>	<b>Specialization Elective</b>	<b>Open Elective</b>	<b>Audit</b>	<b>Total</b>
	1	24	2	0	0	0	0	26
	2	25	0	0	0	0	0	25
	3	25	2	0	0	0	0	27
	4	25	2	0	0	0	1*	27
	5	23	3	0	0	0	0	26
	6	0	17	0	0	0	0	17
	7	15	3	0	9	0	0	27
	8	17	0	0	8	0	0	25

<b>Total</b>	<b>154</b>	<b>29</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>200</b>
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\* Satisfactory completion of the letter grade course 'Integrated Disaster Management' is mandatory for award of degree.

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**Annexure A**

Catalog Course Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Mark	Internal Practical Marks	External Practical Marks	Total Marks
<b>Semester : 1</b>									
<b>Generic Core Courses</b>									
T7385	070124101	Engineering Mathematics -I		5	50	75	0	0	125
T7381	070124102	Chemistry		3	30	45	0	0	75
T7382	070124103	Chemistry Lab		1	0	0	10	15	25
T7540	070124104	Basic Electrical and Electronics Engineering		3	30	45	0	0	75
T7593	070124105	Basic Electrical and Electronics Engineering Lab		1	0	0	10	15	25
T7414	070124106	Engineering Mechanics		3	30	45	0	0	75
T7415	070124107	Engineering Mechanics Lab		1	0	0	10	15	25
T7924	070124108	Engineering Graphics		2	20	30	0	0	50
T7925	070124109	Engineering Graphics Lab		2	0	0	20	30	50
T7943	070124110	Technical English & Communication Skill		2	50	0	0	0	50
T7944	070124111	Technical English & Communication Skill Lab		1	0	0	10	15	25
<b>Total</b>				<b>24</b>	<b>210</b>	<b>240</b>	<b>60</b>	<b>90</b>	<b>600</b>
<b>Generic Elective Courses Group</b>									
T7946	070124112	Economics for Engineers		2	50	0	0	0	50
<b>Total Required Credits</b>				<b>2</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>
<b>Semester : 2</b>									
<b>Generic Core Courses</b>									
T7387	070124201	Engineering Mathematics-II		5	50	75	0	0	125
T7391	070124202	Physics		3	30	45	0	0	75
T7392	070124203	Physics lab		1	0	0	10	15	25
T7418	070124204	Environmental & Civil Engineering		3	30	45	0	0	75
T7458	070124205	Environmental & Civil Engineering Lab		1	0	0	10	15	25
T7934	070124206	C Programming		2	20	30	0	0	50
T7935	070124207	C Programming Lab		2	0	0	20	30	50
T7947	070124208	Computational Thinking and Problem Solving		2	20	30	0	0	50
T7658	070124209	Workshop Practice		2	0	0	20	30	50
T7604	070124210	Basic Mechanical Engineering		3	30	45	0	0	75
T7605	070124211	Basic Mechanical Engineering lab		1	0	0	10	15	25
<b>Total</b>				<b>25</b>	<b>180</b>	<b>270</b>	<b>70</b>	<b>105</b>	<b>625</b>
<b>Semester : 3</b>									

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Catalog Course Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Mark	Internal Practical Marks	External Practical Marks	Total Marks
<b>Generic Core Courses</b>									
T7995	070124301	Discrete Mathematics and Probability Theory		4	40	60	0	0	100
T7512	070124302	Programming Paradigms		3	30	45	0	0	75
T7513	070124303	Programming Paradigms Lab		1	0	0	10	15	25
T7495	070124304	Fundamentals of Data Structures		4	40	60	0	0	100
T7496	070124305	Fundamentals of Data Structures Lab		2	0	0	20	30	50
T7996	070124306	Computer Organization		3	30	45	0	0	75
T7997	070124307	Digital Electronics and Logic Design		3	30	45	0	0	75
T7555	070124308	Digital Electronics and Logic Design Lab		1	0	0	10	15	25
T8000	070124309	Service Learning		4	100	0	0	0	100
<b>Total</b>				<b>25</b>	<b>270</b>	<b>255</b>	<b>40</b>	<b>60</b>	<b>625</b>
<b>Generic Elective Courses Group</b>									
T2353	070124310	Entrepreneurship		2	50	0	0	0	50
<b>Total Required Credits</b>				<b>2</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>
<b>Semester : 4</b>									
<b>Generic Core Courses</b>									
T7388	070124401	Engineering Mathematics-III		4	40	60	0	0	100
T7998	070124402	Operating Systems		4	40	60	0	0	100
T7999	070124403	Java Programming		4	40	60	0	0	100
TE7001	070124404	Java Programming Lab		2	0	0	20	30	50
TE7002	070124405	Data Structures		4	40	60	0	0	100
TE7003	070124406	Data Structures Lab		2	0	0	20	30	50
T7577	070124407	Microprocessor Techniques		3	30	45	0	0	75
T7511	070124408	Operating Systems Lab		1	0	0	10	15	25
T7578	070124409	Microprocessor Techniques Lab		1	0	0	10	15	25
T4005	070124410	Integrated Disaster Management *							Letter Grade
<b>Total</b>				<b>25</b>	<b>190</b>	<b>285</b>	<b>60</b>	<b>90</b>	<b>625</b>
<b>Generic Elective Courses Group</b>									
T6186	070124411	Basic French I		2	50	0	0	0	50
T6188	070124412	Basic Spanish I		2	50	0	0	0	50
T6184	070124413	Basic German I		2	50	0	0	0	50
<b>Total Required Credits</b>				<b>2</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50</b>

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Catalog Course Code	Course Code	Course Title	Specialization	Credits	Internal Marks	External Mark	Internal Practical Marks	External Practical Marks	Total Marks
<b>Semester : 5</b>									
<b>Generic Core Courses</b>									
T7518	070124501	Theory of Computation		4	40	60	0	0	100
T7486	070124502	Data Base Management Systems		4	40	60	0	0	100
T7487	070124503	Data Base Management Systems Lab		2	0	0	20	30	50
T7908	070124504	Computer Networks		3	30	45	0	0	75
T7482	070124505	Computer Networks Lab		1	0	0	10	15	25
T7490	070124506	Design and Analysis of Algorithms		4	40	60	0	0	100
T7491	070124507	Design and Analysis of Algorithms Lab		1	0	0	10	15	25
T7516	070124508	Software Engineering		4	40	60	0	0	100
<b>Total</b>				<b>23</b>	<b>190</b>	<b>285</b>	<b>40</b>	<b>60</b>	<b>575</b>
<b>Generic Elective Courses Group</b>									
T7457	070124509	Integrated Water Resources Development and Management		3	30	45	0	0	75
T7499	070124510	Java		3	30	45	0	0	75
T7574	070124511	MATLAB		3	30	45	0	0	75
T7616	070124512	Fundamentals of Automotive Technology		3	30	45	0	0	75
T7020	070124513	Nanotechnology		3	30	45	0	0	75
T7393	070124514	Computer Based Statistical Packages		3	30	45	0	0	75
<b>Total Required Credits</b>				<b>3</b>	<b>30</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>75</b>
<b>Semester : 6</b>									
<b>Choose any 1 Group</b>									
<b>Generic Elective Courses</b>									
T7191	070124601	Internship (6 Months)		13	0	0	195	130	325
T7671	070124602	Seminar		4	0	0	100	0	100
<b>Generic Elective Courses</b>									
T7905	070124603	Internship(6-8 Weeks)		5	0	0	75	50	125
T7048	070124604	Project Management		4	40	60	0	0	100
T7139	070124605	Software Testing and Quality Assurance		3	30	45	0	0	75
T7080	070124606	Software Testing and Quality Assurance Lab		1	0	0	10	15	25
T7509	070124607	Open Source Technologies		3	30	45	0	0	75

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TE7006	070124608	Open Source Technologies Lab		1	0	0	10	15	25
<b>Total Required Credits</b>				<b>17</b>	<b>100</b>	<b>150</b>	<b>95</b>	<b>80</b>	<b>425</b>
<b>Semester : 7</b>									
<b>Generic Core Courses</b>									
T7517	070124701	System Programming		3	30	45	0	0	75
TE7024	070124702	Web Technologies		3	30	45	0	0	75
TE7025	070124703	Web Technologies Lab		1	0	0	10	15	25
TE7008	070124704	Distributed Systems and Resource Management		3	30	45	0	0	75
T7903	070124705	Distributed Systems and Resource management Lab		1	0	0	10	15	25
T6274	070124706	Foundations of Ethics		2	50	0	0	0	50
TE7038	070124707	Project Planning and Charter		2	0	0	20	30	50
<b>Total</b>				<b>15</b>	<b>140</b>	<b>135</b>	<b>40</b>	<b>60</b>	<b>375</b>
<b>Specialization : Information Technology</b>									
TE7010	070124708	Data Warehousing and Mining		4	40	60	0	0	100
TE7011	070124709	Artificial Intelligence		4	40	60	0	0	100
TE7012	070124710	Network Analysis and Design		4	40	60	0	0	100
<b>Total Required Credits</b>				<b>4</b>	<b>40</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>100</b>
<b>Specialization : Information Technology</b>									
TE7013	070124711	Data Warehousing and Mining Lab		1	0	0	10	15	25
TE7014	070124712	Artificial Intelligence Lab		1	0	0	10	15	25
TE7015	070124713	Network Analysis and Design Lab		1	0	0	10	15	25
<b>Total Required Credits</b>				<b>1</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>15</b>	<b>25</b>
<b>Specialization : Information Technology</b>									
TE7016	070124714	Big Data Stores		4	40	60	0	0	100
TE7079	070124715	Neural Networks		4	40	60	0	0	100
TE7080	070124716	Network Security		4	40	60	0	0	100
<b>Total Required Credits</b>				<b>4</b>	<b>40</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>100</b>
<b>Generic Elective Courses Group</b>									
T7456	070124717	Town & Country Planning		3	30	45	0	0	75
T7509	070124718	Open Source Technologies		3	30	45	0	0	75

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T7474	070124719	Basics of Database		3	30	45	0	0	75
T7584	070124720	Printed Circuit Board (PCB) Design		3	30	45	0	0	75
T7650	070124721	Six sigma		3	30	45	0	0	75
T7394	070124722	Smart Materials		3	30	45	0	0	75
<b>Total Required Credits</b>				<b>3</b>	<b>30</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>75</b>
<b>Semester : 8</b>									
<b>Generic Core Courses</b>									
T7507	070124801	Object Oriented Analysis and Design		3	30	45	0	0	75
T7508	070124802	Object Oriented Analysis and Design Lab		1	0	0	10	15	25
TE7007	070124803	Skill Development Lab		4	0	0	40	60	100
TE7026	070124804	Mobile Applications		3	75	0	0	0	75
T7804	070124805	Project		4	0	0	40	60	100
T7674	070124806	Cyber Security		2	50	0	0	0	50
<b>Total</b>				<b>17</b>	<b>155</b>	<b>45</b>	<b>90</b>	<b>135</b>	<b>425</b>
<b>Specialization : Information Technology</b>									
TE7019	070124807	Big Data Analytics		4	40	60	0	0	100
TE7021	070124808	Optimization Techniques and Algorithms		4	40	60	0	0	100
TE7020	070124809	Wireless Sensor Networks		4	40	60	0	0	100
<b>Total Required Credits</b>				<b>4</b>	<b>40</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>100</b>
<b>Specialization : Information Technology</b>									
TE7022	070124810	Predictive Analytics		4	40	60	0	0	100
TE7023	070124811	Machine learning		4	40	60	0	0	100
T7527	070124812	Internet of Things		4	40	60	0	0	100
<b>Total Required Credits</b>				<b>4</b>	<b>40</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>100</b>



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Semester	Internal Credits	External Credits	Total Credits	Total Marks
<b>Information Technology</b>				
Semester 1	4	22	26	650
Semester 2	0	25	25	625
Semester 3	6	21	27	675
Semester 4	2	25	27	675
Semester 5	0	26	26	650
Semester 6	0	17	17	425
Semester 7	2	25	27	675
Semester 8	5	20	25	625
<b>Total</b>	<b>19</b>	<b>181</b>	<b>200</b>	<b>5000</b>