

Symbiosis Institute of Technology, Pune
Bachelor of Technology (Electronics & Telecommunication)
Programme Structure 2018-22

1.	OBJECTIVE	<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 & 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.</p> <p>Being a professional programme it ensures a healthy balance between theoretical foundation and practical exposure to the present day world.</p> <p>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>			
2.	DURATION (IN MONTHS)	48 (Full Time)			
3.	INTAKE	120			
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	<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.	SELECTION PROCEDURE	Merit list by valid score of Symbiosis Entrance Test (SET) or Joint Entrance Examination (JEE - Main) or Maharashtra Common Entrance Test (MHT-CET)						
7.	MEDIUM OF INSTRUCTION	English						
8.	PROGRAMME PATTERN	Semester						
9.	COURSE & SPECIALIZATION	As per Annexure A						
10.	FEE		Academic Fee p.a	Institute Deposit	Total			
		Indian Students	260000	20000	280000			
		International Students (USD equivalent to INR)	390000	20000	410000			
11.	ASSESSMENT	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.	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	Bachelor of Technology (Electronics and Telecommunication Engineering) 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.	NATURE WISE DISTRIBUTION OF CREDITS							
	Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
	1	24	2	0	0	0	0	26
	2	24	0	0	0	0	0	24
	3	29	0	0	0	0	0	29
	4	26	0	0	2	0	1*	28
	5	27	0	0	0	0	0	27
	6	0	17	0	0	0	0	17
	7	13	0	0	11	0	0	24
	8	14	0	0	11	0	0	25

Total	157	19	0	24	0	0	200
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* Satisfactory completion of the letter grade course 'Integrated Disaster Management' is mandatory for award of degree.

Programme Structure is approved by the Academic Council subject to its norms & conditions. Any provision in the Programme Structure which violates the basic rules & regulations is deemed to be termed "Null & Void".

Head-Academics

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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
Semester : 1									
Generic Core Courses									
T7385	070123101	Engineering Mathematics -I		5	50	75	0	0	125
T7381	070123102	Chemistry		3	30	45	0	0	75
T7382	070123103	Chemistry Lab		1	0	0	10	15	25
T7936	070123104	Fundamentals of Electronic Devices and Circuits		3	30	45	0	0	75
T7937	070123105	Fundamentals of Electronic Devices and Circuits Lab		1	0	0	10	15	25
T7414	070123106	Engineering Mechanics		3	30	45	0	0	75
T7415	070123107	Engineering Mechanics Lab		1	0	0	10	15	25
T7924	070123108	Engineering Graphics		2	20	30	0	0	50
T7925	070123109	Engineering Graphics Lab		2	0	0	20	30	50
T7943	070123110	Technical English & Communication Skill		2	50	0	0	0	50
T7944	070123111	Technical English & Communication Skill Lab		1	0	0	10	15	25
Total				24	210	240	60	90	600
Generic Elective Courses Group									
T7946	070123112	Economics for Engineers		2	50	0	0	0	50
Total Required Credits				2	50	0	0	0	50
Semester : 2									
Generic Core Courses									
T7387	070123201	Engineering Mathematics-II		5	50	75	0	0	125
T7391	070123202	Physics		3	30	45	0	0	75
T7392	070123203	Physics lab		1	0	0	10	15	25
T7418	070123204	Environmental & Civil Engineering		3	30	45	0	0	75
T7458	070123205	Environmental & Civil Engineering Lab		1	0	0	10	15	25
T7484	070123206	Computer Programming		2	20	30	0	0	50
T7485	070123207	Computer Programming Lab		1	0	0	10	15	25
T7938	070123208	Fundamentals of Electric Circuits		2	20	30	0	0	50
T7658	070123209	Workshop Practice		2	0	0	20	30	50
T7604	070123210	Basic Mechanical Engineering		3	30	45	0	0	75
T7605	070123211	Basic Mechanical Engineering lab		1	0	0	10	15	25
Total				24	180	270	60	90	600

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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
Semester : 3									
Generic Core Courses									
T7388	070123301	Engineering Mathematics-III		4	40	60	0	0	100
T7587	070123302	Semiconductor Devices and Circuit Applications		4	40	60	0	0	100
T7586	070123303	Semiconductor Devices and Circuits Applications Lab		1	0	0	10	15	25
T7553	070123304	Digital Electronics		4	40	60	0	0	100
T7556	070123305	Digital Electronics Lab		1	0	0	10	15	25
T7549	070123306	Data Structures and Algorithms		4	40	60	0	0	100
T7550	070123307	Data Structures and Algorithms Lab		1	0	0	10	15	25
T7815	070123308	Network Analysis & Synthesis		3	30	45	0	0	75
T7563	070123309	Electronic Measurements And Instrumentation		3	30	45	0	0	75
T7564	070123310	Electronic Measurements And Instrumentation Lab		1	0	0	10	15	25
TE7027	070123311	Minor Projects in Electronics Circuits		1	0	0	10	15	25
T2353	070123312	Entrepreneurship		2	50	0	0	0	50
Total				29	270	330	50	75	725
Semester : 4									
Generic Core Courses									
T7960	070123401	Statistics, Probability and Numerical Methods		3	30	45	0	0	75
T7961	070123402	Statistics, Probability and Numerical Methods lab		1	0	0	10	15	25
TE7083	070123403	Signals and Systems		3	30	45	0	0	75
T7589	070123404	Signals and Systems Lab		1	0	0	10	15	25
T7547	070123405	Control Systems		4	40	60	0	0	100
T7548	070123406	Control Systems Lab		1	0	0	10	15	25
T7562	070123407	Electromagnetic Field Theory		4	40	60	0	0	100
TE7084	070123408	Analog Circuit Design		3	30	45	0	0	75
T7536	070123409	Analog Circuit Design Lab		1	0	0	10	15	25
TE7028	070123410	Principles of Communication		4	40	60	0	0	100
TE7029	070123411	Principles of Communication Lab		1	0	0	10	15	25
T4005	070123412	Integrated Disaster Management *							Letter Grade

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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
Total				26	210	315	50	75	650
Specialization : Electronics & Tele-communication Engineering									
T6184	070123413	Basic German I		2	50	0	0	0	50
T6186	070123414	Basic French I		2	50	0	0	0	50
T6188	070123415	Basic Spanish I		2	50	0	0	0	50
Total Required Credits				2	50	0	0	0	50
Semester : 5									
Generic Core Courses									
T7575	070123501	Microcontrollers and Applications		4	40	60	0	0	100
T7576	070123502	Microcontrollers and Applications Lab		1	0	0	10	15	25
T7558	070123503	Digital Signal Processing		4	40	60	0	0	100
T7559	070123504	Digital Signal Processing Lab		1	0	0	10	15	25
TE7085	070123505	Power Electronics		3	30	45	0	0	75
T7583	070123506	Power Electronics Lab		1	0	0	10	15	25
TE7086	070123507	VLSI Design		3	30	45	0	0	75
T7592	070123508	VLSI Design Lab		1	0	0	10	15	25
TE7087	070123509	Microwave Communication		3	30	45	0	0	75
TE7031	070123510	Microwave Communication Lab		1	0	0	10	15	25
T7594	070123511	Product Design Lab		1	0	0	10	15	25
T8000	070123512	Service Learning		4	100	0	0	0	100
Total				27	270	255	60	90	675
Semester : 6									
Group of Group 1									
Generic Elective Courses									
T7191	070123601	Internship (6 Months)		13	0	0	195	130	325
T7671	070123602	Seminar		4	0	0	100	0	100
Generic Elective Courses									
T7905	070123604	Internship(6-8 Weeks)		5	0	0	75	50	125
T7048	070123605	Project Management		4	40	60	0	0	100
T7139	070123606	Software Testing and Quality Assurance		3	30	45	0	0	75
T7080	070123607	Software Testing and Quality Assurance Lab		1	0	0	10	15	25
TE7033	070123608	Satellite Communication		4	40	60	0	0	100
Total Required Credits				17	110	165	85	65	425
Semester : 7									

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Generic Core Courses									
TE7036	070123701	Embedded Systems and RTOS		3	30	45	0	0	75
TE7037	070123702	Embedded Systems and RTOS Lab		1	0	0	10	15	25
TE7034	070123703	Wireless and Mobile Communication		4	40	60	0	0	100
TE7035	070123704	Wireless and Mobile Communication Lab		1	0	0	10	15	25
T7968	070123705	Foundation of Ethics		2	50	0	0	0	50
TE7038	070123706	Project Planning and Charter		2	0	0	20	30	50
Total				13	120	105	40	60	325
Specialization : Electronics & Tele-communication Engineering									
TE7088	070123707	Digital Image Processing		3	30	45	0	0	75
TE7040	070123708	Robotics and Automation		3	30	45	0	0	75
TE7042	070123709	Computer Communication Networks		3	30	45	0	0	75
TE7089	070123710	Modern Control Theory	Electronics & Tele-communication Engineering	3	30	45	0	0	75
Total Required Credits				3	30	45	0	0	75
Specialization : Electronics & Tele-communication Engineering									
T7094	070123711	Digital Image Processing Lab		1	0	0	10	15	25
TE7041	070123712	Robotics and Automation Lab		1	0	0	10	15	25
TE7043	070123713	Computer Communication Networks Lab		1	0	0	10	15	25
TE7039	070123714	Modern Control Theory Lab		1	0	0	10	15	25
Total Required Credits				1	0	0	10	15	25
Specialization : Electronics & Tele-communication Engineering									
TE7044	070123715	Pattern Recognition and Machine Learning		3	30	45	0	0	75
TE7045	070123716	IoT and Applications		3	30	45	0	0	75
TE7090	070123717	Antenna and Wave Propagation		3	30	45	0	0	75
T7640	070123718	Mechatronics		3	30	45	0	0	75
Total Required Credits				3	30	45	0	0	75

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Specialization : Electronics & Tele-communication Engineering									
TE7047	070123719	Pattern Recognition and Machine Learning Lab		1	0	0	10	15	25
TE7048	070123720	IoT and Applications Lab		1	0	0	10	15	25
TE7091	070123721	Antenna and Wave Propagation Lab		1	0	0	10	15	25
T7101	070123722	Mechatronics Lab		1	0	0	10	15	25
Total Required Credits				1	0	0	10	15	25
Specialization : Electronics & Tele-communication Engineering									
T7457	070123723	Integrated Water Resources Development and Management		3	30	45	0	0	75
T7499	070123724	Java		3	30	45	0	0	75
T7574	070123725	MATLAB		3	30	45	0	0	75
T7616	070123726	Fundamentals of Automotive Technology		3	30	45	0	0	75
T7020	070123727	Nanotechnology		3	30	45	0	0	75
T7393	070123728	Computer Based Statistical Packages		3	30	45	0	0	75
Total Required Credits				3	30	45	0	0	75
Semester : 8									
Generic Core Courses									
TE7032	070123801	Optical Communication		4	40	60	0	0	100
TE7092	070123802	Optical Communication Lab		1	0	0	10	15	25
T7473	070123803	Artificial Intelligence		3	30	45	0	0	75
T7804	070123804	Project		4	0	0	40	60	100
T7674	070123805	Cyber Security		2	50	0	0	0	50
Total				14	120	105	50	75	350
Specialization : Electronics & Tele-communication Engineering									
T7112	070123806	VLSI Digital Signal Processing System		4	40	60	0	0	100
T7542	070123807	CMOS VLSI Design		4	40	60	0	0	100
TE7049	070123808	Radar and Electronic Navigation Systems		4	40	60	0	0	100
TE7050	070123809	Biomedical Instrumentation		4	40	60	0	0	100
Total Required Credits				4	40	60	0	0	100
Specialization : Electronics & Tele-communication Engineering									

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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
TE7051	070123810	Digital Speech and Audio Processing		3	30	45	0	0	75
TE7094	070123811	Advanced FPGA Design		3	30	45	0	0	75
TE7052	070123812	Information Theory and Coding and Techniques		3	30	45	0	0	75
TE7053	070123813	Mobile Robotics		3	30	45	0	0	75
Total Required Credits				3	30	45	0	0	75
Specialization : Electronics & Tele-communication Engineering									
TE7054	070123814	Digital Speech and Audio Processing Lab		1	0	0	10	15	25
TE7095	070123815	Advanced FPGA Design Lab		1	0	0	10	15	25
TE7055	070123816	Information Theory and Coding Lab		1	0	0	10	15	25
TE7056	070123817	Mobile Robotics Lab		1	0	0	10	15	25
Total Required Credits				1	0	0	10	15	25
Specialization : Electronics & Tele-communication Engineering									
T7456	070123818	Town & Country Planning		3	30	45	0	0	75
T7509	070123819	Open Source Technologies		3	30	45	0	0	75
T7474	070123820	Basics of Database		3	30	45	0	0	75
T7584	070123821	Printed Circuit Board (PCB) Design		3	30	45	0	0	75
T7650	070123822	Six sigma		3	30	45	0	0	75
T7394	070123823	Smart Materials		3	30	45	0	0	75
Total Required Credits				3	30	45	0	0	75

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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Electronics & Tele-communication Engineering				
Semester 1	4	22	26	650
Semester 2	0	24	24	600
Semester 3	2	27	29	725
Semester 4	2	26	28	700
Semester 5	4	23	27	675
Semester 6	0	17	17	425
Semester 7	2	22	24	600
Semester 8	2	23	25	625
Total	16	184	200	5000