

SYMBIOSIS INSTITUTE OF TECHNOLOGY
BACHELOR OF TECHNOLOGY (INFORMATION TECHNOLOGY)
PROGRAMME STRUCTURE 2017-21

- 1. OBJECTIVE**

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. 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.
- 2. DURATION**

Four Years Full Time
- 3. INTAKE**

60 Students
- 4. RESERVATION**

I. Within the sanctioned intake:
a) Scheduled Castes – 15%
b) Scheduled Tribes – 7.5%
c) Differently Able - 3%

II. Over and above the sanctioned intake:
a) Kashmiri Migrants - 2 Seats
b) International Students – 15%
- 5. ELIGIBILITY**

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 (40% in case of candidate belonging to reserved category) in the above subjects taken together.

B. Tech (Lateral entry to second year) :

a) Passed Diploma examination from an AICTE approved Institution; with at least 45% marks (40% in case of candidates belonging to reserved category) in appropriate branch of

Engineering / Technology.

- b) Passed B.Sc. Degree from a recognized University as defined by UGC, with at least 45% marks (40% in case of candidates belonging to reserved category) and passed XII standard with mathematics as a subject.
- 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.
- 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.
- 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 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.

A candidate who has completed qualifying qualification from any Foreign Board / University must obtain an equivalence certificate from Association of Indian Universities (AIU).

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|----|-------------------------------------|---|
| 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 Pattern - 8 Semesters |
| 9. | COURSES & SPECIALIZATION | As per Annexure A |

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|--------------------------------|--|-------------------|--------------|-------------------|------------|--------------|---------------------|-------------------|--------------|-------------------|------------|--------------|---------------------|
| 10. FEE | <p>Indian Students</p> <table border="0"> <tr> <td>Academic Fee p.a.</td> <td style="text-align: right;">Rs. 2,25,000</td> </tr> <tr> <td>Institute Deposit</td> <td style="text-align: right;">Rs. 10,000</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">Rs. 2,35,000</td> </tr> </table> <p>International Students</p> <table border="0"> <tr> <td>Academic Fee p.a.</td> <td style="text-align: right;">Rs. 3,40,000</td> </tr> <tr> <td>Institute Deposit</td> <td style="text-align: right;">Rs. 10,000</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">Rs. 3,50,000</td> </tr> </table> | Academic Fee p.a. | Rs. 2,25,000 | Institute Deposit | Rs. 10,000 | Total | Rs. 2,35,000 | Academic Fee p.a. | Rs. 3,40,000 | Institute Deposit | Rs. 10,000 | Total | Rs. 3,50,000 |
| Academic Fee p.a. | Rs. 2,25,000 | | | | | | | | | | | | |
| Institute Deposit | Rs. 10,000 | | | | | | | | | | | | |
| Total | Rs. 2,35,000 | | | | | | | | | | | | |
| Academic Fee p.a. | Rs. 3,40,000 | | | | | | | | | | | | |
| Institute Deposit | Rs. 10,000 | | | | | | | | | | | | |
| Total | Rs. 3,50,000 | | | | | | | | | | | | |
| 11. ASSESSMENT | <p>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.</p> | | | | | | | | | | | | |
| 12. STANDARD OF PASSING | <p>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.</p> | | | | | | | | | | | | |
| 13. AWARD OF DEGREE | <p>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.</p> | | | | | | | | | | | | |

Annexure A Semester I

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Practical		Examination Scheme Marks		Total Credits	Total Marks
				L	T	Lab	CA	ESE	CA	ESE		
T7385	070124101	Engineering Mathematics I	BS	4	2	-	-	-	50	75	5	125
T7381	070124102	Chemistry	BS	3	-	-	-	-	30	45	3	75
T7382	070124103	Chemistry Lab	BS	-	-	2	10	15	-	-	1	25
T7540	070124104	Basic Electrical and Electronics Engineering	ES	3	-	-	-	-	30	45	3	75
T7593	070124105	Basic Electrical and Electronics Engineering Lab	ES	-	-	2	10	15	-	-	1	25
T7414	070124106	Engineering Mechanics	ES	3	-	-	-	-	30	45	3	75
T7415	070124107	Engineering Mechanics Lab	ES	-	-	2	10	15	-	-	1	25
T7924	070124108	Engineering Graphics	ES	2	-	-	-	-	20	30	2	50
T7925	070124109	Engineering Graphics Lab	ES	-	-	4	20	30			2	50
T7943	070124110	Technical English & Communication Skill	MC	2	-	-	-	-	50		2	50
T7944	070124111	Technical English & Communication Skill Lab	MC		-	2	10	15			1	25
Inter Institute Course I (Choose any one course from 212 to 214)												
T7945	070124112	Law for Engineers	OE	2	-	-	-	-	50	-	2	50
T7946	070124113	Economics for Engineers	OE	2	-	-	-	-	50	-	2	50
T4609	070124114	My Nutrition Guide	OE	2	-	-	-	-	50	-	2	50
Total				19	2	12	60	90	260	240	26	650

Semester II

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Practical		Examination Scheme Marks		Total Credits	Total Marks
				L	T	Lab	CA	ESE	CA	ESE		
T7387	070124201	Engineering Mathematics II	BS	4	2	-	-	-	50	75	5	125
T7391	070124202	Physics	BS	3	-	-	-	-	30	45	3	75
T7392	070124203	Physics Lab	BS	-	-	2	10	15	-	-	1	25
T7418	070124204	Environmental and Civil Engineering	ES	3	-	-	-	-	30	45	3	75
T7458	070124205	Environmental and Civil Engineering Lab	ES		-	2	10	15			1	25
T7934	070124206	C Programming	PC	2	-	-	-	-	20	30	2	50
T7935	070124207	C Programming Lab	PC	-	-	4	20	30	-	-	2	50
T7947	070124208	Computational Thinking and	PC	2					20	30	2	50

		problem solving										
T7658	070124209	Workshop Practice	ES	-	-	4	20	30	-	-	2	50
T7604	070124210	Basic Mechanical Engineering	ES	3	-	-	-	-	30	45	3	75
T7605	070124211	Basic Mechanical Engineering Lab	ES	-	-	2	10	15	-	-	1	25
		Total		17	2	14	70	105	180	270	25	625

Semester III

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ESE		
							CA	ESE				
T7995	070124301	Discrete Mathematics and Probability Theory	BS	3	2	-	-	-	40	60	4	100
T7512	070124302	Programming Paradigms	PC	3	-	-	-	-	30	45	3	75
T7513	070124303	Programming Paradigms Lab	PC	-	-	2	10	15	-	-	1	25
T7495	070124304	Fundamentals of Data Structures	PC	4	-	-	-	-	40	60	4	100
T7496	070124305	Fundamentals of Data Structures Lab	PC	-	-	4	20	30	-	-	2	50
T7996	070124306	Computer Organization	PC	3	-	-	-	-	30	45	3	75
T7997	070124307	Digital Electronics and Logic Design	PC	3	-	-	-	-	30	45	3	75
T7555	070124308	Digital Electronics and Logic Design Lab	PC	-	-	2	10	15	-	-	1	25
T2353	070124309	Inter Institute Course II : Entrepreneurship	OE	2	-	-	-	-	50	-	2	50
T8000	070124310	Service Learning	HS	4	-	-	-	-	100	-	4	100
		Total		22	2	8	40	60	320	255	27	675

Semester IV

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ESE		
							CA	ESE				
T7388	070124401	Engineering Mathematics-III	BS	3	2	-	-	-	40	60	4	100
T7998	070124402	Operating Systems	PC	4	-	-	-	-	40	60	4	100
T7999	070124403	Java Programming	PC	4	-	-	-	-	40	60	4	100
TE7001	070124404	Java Programming Lab	PC	-	-	4	20	30	-	-	2	50
TE7002	070124405	Data Structures	PC	4	-	-	-	-	40	60	4	100
TE7003	070124406	Data Structures Lab	PC	-	-	4	20	30	-	-	2	50
T7577	070124407	Microprocessor Techniques	ID	3	-	-	-	-	30	45	3	75
T7511	070124408	Operating Systems Lab	C	-	-	2	10	15	-	-	1	25
T7578	070124409	Microprocessor Techniques Lab	ID	-	-	2	10	15	-	-	1	25
Liberal Arts (Choose any one from following)												
T6184	070124410	Basic German-I	MC	2	-	-	-	-	50	-	2	50
T6186	070124411	Basic French-I	MC	2	-	-	-	-	50	-	2	50
T6188	070124412	Basic Spanish-I	MC	2	-	-	-	-	50	-	2	50
		Total		20	2	12	60	90	240	285	27	675
T4005	070124413	Integrated Disaster Management	GP	-	-	-	-	-	-	-	0	Letter Grade

For 2 hours tutorial, there will be 1 hour classroom teaching and 1 hour for projects/self-study/assignments.

Semester V

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ESE		
							CA	ESE				
T7518	070124501	Theory of Computation	PC	3	2	-	-	-	40	60	4	100
TE7004	070124502	Data Base Management Systems	PC	4	-	-	-	-	40	60	4	100
T7487	070124503	Data Base Management Systems Lab	PC	-	-	4	20	30	-	-	2	50
T7908	070124504	Computer Networks	PC	3	-	-	-	-	30	45	3	75
T7482	070124505	Computer Networks Lab	PC	-	-	2	10	15	-	-	1	25
T7490	070124506	Design and Analysis of Algorithms	PC	4	-	-	-	-	40	60	4	100
T7491	070124507	Design and Analysis of Algorithms Lab	PC	-	-	2	10	15	-	-	1	25
T7516	070124508	Software Engineering	PC	3	2	-	-	-	40	60	4	100
Open Elective-I (Choose any one from the following)												
T7457	070124509	Integrated Water Resources Development and Management	OE	3	-	-	-	-	30	45	3	75
T7499	070124510	JAVA	OE	3	-	-	-	-	30	45	3	75
T7574	070124511	MATLAB	OE	3	-	-	-	-	30	45	3	75
T7616	070124512	Fundamentals of Automotive Technology	OE	3	-	-	-	-	30	45	3	75
T7020	070124513	Nanotechnology	OE	3	-	-	-	-	30	45	3	75
T7393	070124514	Computer based Statistical Packages	OE	3	-	-	-	-	30	45	3	75
Total				20	4	8	40	60	220	330	26	650
	070124515	Energy Studies	MC	-	-	-	-	-	-	-	-	Letter Grade

For 2 hours tutorial, there will be 1 hour classroom teaching and 1 hour for projects/self-study/assignments.

Semester VI

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ESE		
							CA	ESE				
Group A												
T7191	070124601	Internship (6 Months)	PIS	-	-	-	195	130	-	-	13	325
T7671	070124602	Seminar	PIS	-	-	-	100	-	-	-	4	100
OR												
	070124603	Global Immersion Programme	PC	-	-	-	-	-	-	-	-	-
Total				-	-	-	295	130	-	-	17	425
OR												
Group B												
T7905	070124604	Internship(6-8 weeks)	PIS	-	-	10	75	50	-	-	5	125
T7048	070124605	Project Management	GP	4	-	-	-	-	40	60	4	100
T7139	070124606	Software Testing and Quality Assurance	PC	3	-	-	-	-	30	45	3	75
T7080	070124607	Software Testing and Quality Assurance Lab	PC	-	-	2	10	15	-	-	1	25
T7509	070124608	Open Source Technologies	PC	3	-	-	-	-	30	45	3	75
TE7006	070124609	Open Source Technologies Lab	PC	-	-	2	10	15	-	-	1	25
Total				10	-	14	95	80	100	150	17	425

For 2 hours tutorial, there will be 1 hour classroom teaching and 1 hour for projects/self-study/assignments.

Semester VII

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ESE		
							CA	ESE				
T7517	070124701	System Programming	PC	3	-	-	-	-	30	45	3	75
TE7024	070124702	Web Technologies	PC	3	-	-	-	-	30	45	3	75
TE7025	070124703	Web Technologies Lab	PC	-	-	2	10	15	-	-	1	25
T7903	070124704	Distributed Systems and Resource Management	PC	3	-	-	-	-	30	45	3	75
T7903	070124705	Distributed Systems and Resource Management Lab	PC	-	-	2	10	15	-	-	1	25
T6274	070124706	Foundation of Ethics	MC	2	-	-	50	-	-	-	2	50
TE7038	070124707	Project Planning and Charter	PIS	-	-	4	20	30	-	-	2	50
Elective-I (Choose any one from the following)												
TE7010	070124708	Data Warehousing and Mining	PE	4	-	-	-	-	40	60	4	100
TE7011	070124709	Artificial Intelligence	PE	4	-	-	-	-	40	60	4	100
TE7012	070124710	Network Analysis and Design	PE	4	-	-	-	-	40	60	4	100
Elective-I Lab(Choose any one from the following)												
TE7013	070124711	Data Warehousing and Mining Lab	PE	-	-	2	10	15	-	-	1	25
TE7014	070124712	Artificial Intelligence Lab	PE	-	-	2	10	15	-	-	1	25
TE7015	070124713	Network Analysis and Design Lab	PE	-	-	2	10	15	-	-	1	25
Elective –II (Choose any one from the following)												
TE7016	070124714	Big Data Stores	PE	4	-	-	-	-	40	60	4	100
T7104	070124715	Neural Networks	PE	4	-	-	-	-	40	60	4	100
TE7017	070124716	Network Security	PE	4	-	-	-	-	40	60	4	100
Open Elective-II (Choose any one from the following)												
T7456	070124717	Town and Country Planning	OE	3	-	-	-	-	30	45	3	75
T7509	070124718	Open Source Technologies	ID	3	-	-	-	-	30	45	3	75
T7474	070124719	Basics of Database	ID	3	-	-	-	-	30	45	3	75
T7584	070124720	Printed Circuit Board (PCB) Design	ID	3	-	-	-	-	30	45	3	75
T7650	070124721	Six Sigma	ID	3	-	-	-	-	30	45	3	75
T7394	070124722	Smart Materials	ID	3	-	-	-	-	30	45	3	75
		Total		22	0	10	100	75	200	300	27	675
	070124723	Soft skills	MC	-	-	-	-	-	-	-	0	Letter Grade

For 2 hours tutorial, there will be 1 hour classroom teaching and 1 hour for projects/self-study/assignments.

Semester-VIII

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ESE		
							CA	ESE				
T7507	070124801	Object Oriented Analysis and Design	PC	3	-	-	-	-	30	45	3	75
T7508	070124802	Object Oriented Analysis and Design Lab	PC	-	-	2	10	15	-	-	1	25
TE7007	070124803	Skill Development Lab	PC	-	-	8	40	60	-	-	4	100
TE7026	070124804	Mobile Applications	PC	3	-	-	-	-	75	-	3	75
T7804	070124805	Project	PIS	-	-	8	40	60	-	-	4	100
T7674	070124806	Cyber Security	PC	2	-	-	-	-	50	-	2	50

Elective – III (Choose any one of the following)												
TE7019	070124807	Big Data Analytics	PE	4	-	-	-	-	40	60	4	100
TE7020	070124808	Optimization Techniques and Algorithms	PE	4	-	-	-	-	40	60	4	100
TE7021	070124809	Wireless Sensor Networks	PE	4	-	-	-	-	40	60	4	100
Elective – IV (Choose any one of the following)												
TE7022	070124810	Predictive Analytics	PE	4	-	-	-	-	40	60	4	100
TE7023	070124811	Machine Learning	PE	4	-	-	-	-	40	60	4	100
T7527	070124812	Internet of Things	PE	4	-	-	-	-	40	60	4	100
				16	0	18	90	135	190	235	25	625

For 1 tutorial, there will be 1 hour class room teaching and 1 hour assignments.

HS- Humanities and Social Sciences

L- Lecture , T-Tutorial

ES - Engineering Sciences

PIS- Project, Internship, Seminar

OE- Open Electives

CA- Continuous Assessment

ESE- End Semester Examination

Practical, CA, ESE are separate heads of Passing

PE- Professional Elective

BS – Basic Sciences

PD - Professional Development Course

MC - Mandatory Course

PC – Professional Core

Practical external examination may be conducted by alternate internal faculty

Summary

Semester	Internal Credits	External Credits	Credits	Total Marks
I	4	22	26	650
II	0	25	25	625
III	6	21	27	675
IV	2	25	27	675
V	0	26	26	650
VI				
Group A /	4	13	17	425
Group B	0	17	17	
VII	2	25	27	675
VIII	5	20	25	625
Total	23/19	177/181	200	5000

* Integrated Disaster Management is mandatory for the award of degree.