

SYMBIOSIS INSTITUTE OF TECHNOLOGY
BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING)
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).

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	
10. FEE	Indian Students	
	Academic Fee p.a.	Rs. 2,25,000
	Institute Deposit	Rs. 10,000
	Total	Rs. 2,35,000

International Students

Academic Fee p.a.	Rs. 3,40,000
Institute Deposit	Rs. 10,000
Total	Rs. 3,50,000

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 (Civil 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.

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	070121101	Engineering Mathematics- I	BS	4	2	-	-	-	50	75	5	125
T7391	070121102	Physics	BS	3	-	-	-	-	30	45	3	75
T7392	070121103	Physics Lab	BS	-	-	2	10	15	-	-	1	25
T7929	070121104	Basics of Surveying and Built Environment	ES	3	-	-	-	-	30	45	3	75
T7930	070121105	Basics of Surveying and Built Environment Lab	ES	-	-	2	10	15	-	-	1	25
T7484	070121106	Computer Programming	ES	2	-	-	-	-	20	30	2	50
T7485	070121107	Computer Programming Lab	ES	-	-	2	10	15	-	-	1	25
T7604	070121108	Basic Mechanical Engineering	ES	3	-	-	-	-	30	45	3	75
T7605	070121109	Basic Mechanical Engineering Lab	ES	-	-	2	10	15	-	-	1	25
T7931	070121110	Construction Techniques	PC	2					20	30	2	50
T7658	070121111	Workshop Practice	ES	-	-	4	20	30	-	-	2	50
		Total		17	2	12	60	90	180	270	24	600

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		
T7943	070121201	Technical English & Communication Skill	MC	2	-	-	-	-	50	-	2	50
T7944	070121202	Technical English & Communication Skill Lab	MC	-	-	2	10	15	-	-	1	25
T7387	070121203	Engineering Mathematics- II	BS	4	2	-	-	-	50	75	5	125
T7381	070121204	Chemistry	BS	3	-	-	-	-	30	45	3	75
T7382	070121205	Chemistry Lab	BS	-	-	2	10	15	-	-	1	25
T7540	070121206	Basic Electrical and Electronics Engineering	ES	3	-	-	-	-	30	45	3	75
T7593	070121207	Basic Electrical and Electronics Engineering Lab	ES	-	-	2	10	15	-	-	1	25
T7414	070121208	Engineering Mechanics	ES	3	-	-	-	-	30	45	3	75
T7415	070121209	Engineering Mechanics Lab	ES	-	-	2	10	15	-	-	1	25
T7924	070121210	Engineering Graphics	ES	2	-	-	-	-	20	30	2	50
T7925	070121211	Engineering Graphics Lab	ES	-	-	4	20	30	-	-	2	50
Inter Institute Course I (Choose any one course from the following)												
T7945	070121212	Law for Engineers	OE	2	-	-	-	-	50	-	2	50
T7946	070121213	Economics for	OE	2	-	-	-	-	50	-	2	50

		Engineers											
T4609	070121214	My Nutrition Guide	OE	2	-	-	-	-	50	-	2	50	
		Total		19	2	12	60	90	260	240	26	650	

Semester III

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		C A	ESE		
							CA	ESE				
T7388	070121301	Engineering Mathematics III	BS	3	2	-	-	-	40	60	4	100
T7435	070121302	Solid Mechanics	ES	3	2	-	-	-	40	60	4	100
T7436	070121303	Solid Mechanics Lab	ES	-	-	2	10	15	-	-	1	25
T7403	070121304	Building Design and Drawing	PC	4	-	-	-	-	40	60	4	100
T7404	070121305	Building Design and Drawing Lab	PC	-	-	2	10	15	-	-	1	25
T7422	070121306	Fluid Mechanics - I	PC	3	2	-	-	-	40	60	4	100
T7423	070121307	Fluid Mechanics - I Lab	PC	-	-	2	10	15	-	-	1	25
T7957	070121308	Building Construction Technology	PC	3	-	-	-	-	30	45	3	75
T7958	070121309	Building Construction Technology lab	PC	-	-	2	10	15	-	-	1	25
T7959	070121310	Engineering Hydrology	PC	3	-	-	-	-	30	45	3	75
Liberal Arts (Choose any one course from 311 to 313)												
T6184	070121311	Basic German- I	MC	2	-	-	-	-	50	-	2	50
T6186	070121312	Basic French- I	MC	2	-	-	-	-	50	-	2	50
T6188	070121313	Basic Spanish- I	MC	2	-	-	-	-	50	-	2	50
		Total		21	6	8	40	60	270	330	28	700
T4005	070121314	Integrated Disaster Management	GP	-	-	-	-	-	-	-	-	Letter grade

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				
T7960	070121401	Statistics, Probability and Numerical methods	BS	3	-	-	-	-	30	45	3	75
T7961	070121402	Statistics, Probability and Numerical methods Lab	BS	-	-	2	10	15	-	-	1	25
T7438	070121403	Structural Analysis-I	PC	3	1	-	-	-	40	60	4	100
T7962	070121404	Geology & Soil Mechanics	PC	4	-	-	-	-	40	60	4	100
T7963	070121405	Geology & Soil Mechanics Lab	PC	-	-	2	10	15	-	-	1	25
T7964	070121406	Fluid Mechanics II	PC	3	-	-	-	-	30	45	3	75

T7965	070121407	Fluid Mechanics II Lab	PC	-	-	2	10	15	-	-	1	25
T7966	070121408	Advanced Surveying Lab	PC	-	-	4	20	30	-	-	2	50
T8000	070121409	Service Learning	HS	4	-	-	-	-	100	-	4	100
Inter-institute course												
T2353	070121410	Entrepreneurship	MC	-	-	-	-	-	50	-	2	50
Total				17	2	10	50	75	290	210	25	625

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				
T7437	070121501	Structural Analysis II	PC	3	1	-	-	-	40	60	4	100
T7450	070121502	Railway Tunnel and Harbour Engineering	PC	3	-	-	-	-	30	45	3	75
T7721	070121503	Quantity Surveying and Valuation	PC	3	-	-	-	-	30	45	3	75
T7434	070121504	Quantity Surveying and Valuation Lab	PC	-	-	2	10	15	-	-	1	25
T7416	070121505	Environmental Engineering I	PC	3	-	-	-	-	30	45	3	75
T7417	070121506	Environmental Engineering I Lab	PC	-	-	2	10	15	-	-	1	25
T7439	070121507	Structural Design I	PC	3	1	-	-	-	40	60	4	100
T7440	070121508	Structural Design I Lab	PC	-	-	2	10	15	-	-	1	25
T7968	070121509	Foundation of ethics	MC	-	-	-	-	-	50	-	2	50
Open Elective-I (Choose any one from the following)												
T7457	070121510	Integrated Water Resources Development and Management	OE	3	-	-	-	-	30	45	3	75
T7499	070121511	Java	OE	3	-	-	-	-	30	45	3	75
T7574	070121512	MATLAB	OE	3	-	-	-	-	30	45	3	75
T7616	070121513	Fundamentals of Automotive Technology	OE	3	-	-	-	-	30	45	3	75
T7020	070121514	Nanotechnology	OE	3	-	-	-	-	30	45	3	75
T7393	070121515	Computer Based Statistical Packages	OE	3	-	-	-	-	30	45	3	75
Total				18	4	6	30	45	250	300	25	625

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	070121601	Internship (6 Months)	PIS	-	-	-	195	130	-	-	13	325
T7671	070121602	Seminar	PIS	-	-	-	60	40	-	-	4	100
OR												
	070121603	Global Immersion Programme	PC	-	-	-	-	-	-	-	-	-
		Total		-	-	-	255	170	-	-	17	425
Group B												
T7905	070121604	Internship(6-8 Weeks)	PIS	-	-	10	75	50	-	-	5	125
T7048	070121605	Project Management	GP	4	-	-	-	-	40	60	4	100
T7804	070121606	Mini Project	PIS	-	-	8	40	60	-	-	4	100
T7969	070121607	Case studies on sustainable Environment	PC	-	-	4	20	30	-	-	2	50
T7970	070121608	Software applications in Civil Engineering	PC	-	-	4	20	30	-	-	2	50
		Total		12	-	-	75	50	120	180	17	425

Semester VII

Catalog Course Code	Course Code	Course Title	Nature	Teaching Scheme			Examination Scheme Marks				Total Credits	Total Marks
				L	T	Lab	Practical		CA	ES		
							CA	ESE				
T7419	070121701	Environmental Engineering II	PC	3	-	-	-	-	30	45	3	75
T7420	070121702	Environmental Engineering II Lab	PC	-	-	2	10	15	-	-	1	25
T7441	070121703	Structural Design II	PC	3	1	-	-	-	40	60	4	100
T7442	070121704	Structural Design II Lab	PC	-	-	2	10	15	-	-	1	25
T7971	070121705	Highway Engineering	PC	3	-	-	-	-	30	45	3	75
T7972	070121706	Highway Engineering Lab	PC	-	-	2	10	15	-	-	1	25
T7454	070121707	Water Resources Engineering	PC	3	-	-	-	-	30	45	3	75
TE7038	070121708	Project Planning & charter	PIS	-	-	4	20	30	-	-	2	50
Elective II (Choose any one from 709 to 714)												
T7980	070121709	Glass Facade Engineering	PE	3	-	-	-	-	30	45	3	75
T7981	070121710	Town Planning	PE	3	-	-	-	-	30	45	3	75
T7982	070121711	Integrated Water Resource Management in India	PE	3	-	-	-	-	30	45	3	75
T7983	070121712	Ground Improvement	PE	3	-	-	-	-	30	45	3	75

		Techniques										
T7984	070121713	Computer Applications in Construction Management	PE	3	-	-	-	-	30	45	3	75
T7981	070121714	Urban Transport Management	PE	3	-	-	-	-	30	45	3	75
Open Elective II (Choose any one from 715 to 720)												
T7456	070121715	Town and Country Planning	OE	3	-	-	-	-	30	45	3	75
T7509	070121716	Open Source Technologies	OE	3	-	-	-	-	30	45	3	75
T7474	070121717	Basics of Database	OE	3	-	-	-	-	30	45	3	75
T7584	070121718	Printed Circuit Board (PCB) Design	OE	3	-	-	-	-	30	45	3	75
T7650	070121719	Six Sigma	OE	3	-	-	-	-	30	45	3	75
T7394	070121720	Smart Materials	OE	3	-	-	-	-	30	45	3	75
		Total		22	1	10	50	75	230	345	28	700
	070121721	Soft Skills	MC	-	-	-	-	-	-	-	-	Letter Grade
	070121722	Energy Studies	MC	-	-	-	--	-	-	-	-	Letter Grade

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				
T7804	070121801	Project	PIS	-	-	8	40	60	-	-	4	100
T7987	070121802	Foundation Engineering	PC	3	1	-	-	-	40	60	4	100
T7443	070121803	Structural Design III	PC	3	-	-	-	-	30	45	3	75
T7444	070121804	Structural Design III Lab	PC	-	-	2	10	15	-	-	1	25
T7408	070121805	Dams and Hydraulic Structures	PC	3	-	-	-	-	30	45	3	75
T7409	070121806	Dams and Hydraulic Structures Lab	PC	-	-	2	10	15	-	-	1	25
T7988	070121807	Optimization in Civil Engineering	PC	3	-	-	-	-	30	45	3	75
T7674	070121808	Cyber Security	MC	2	-	-	-	-	50	-	2	50
Elective III (Choose any one from 809 to 813)												
T7954	070121809	Elementary Remote sensing & GIS	PE	3	-	-	-	-	30	45	3	75
T7953	070121810	Airport Engineering	PE	3	-	-	-	-	30	45	3	75
T7955	070121811	Professional Practices in Construction	PE	3	-	-	-	-	30	45	3	75

T7989	070121812	Geosynthetics and Applications	PE	3	-	-	-	-	30	45	3	75
T7990	070121813	Advanced Concrete Technology	PE	3	-	-	-	-	30	45	3	75
Elective IV (Choose any one from 814 to 818)												
T7951	070121814	Introduction to Coastal Engineering	PE	3	-	-	-	-	30	45	3	75
T7991	070121815	Introduction to Finite Element Method	PE	3	-	-	-	-	30	45	3	75
T7992	070121816	Modern Construction Techniques	PE	3	-	-	-	-	30	45	3	75
T7993	070121817	Environmental Impact Assessment	PE	3	-	-	-	-	30	45	3	75
T7994	070121818	Traffic Engineering and Management	PE	3	-	-	-	-	30	45	3	75
		Total		20	1	12	60	90	240	285	27	675

For 2 hours tutorial, there will be 1 hour classroom teaching and 1 hour for projects/self-study/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	00	24	24	600
II	04	22	26	650
III	02	26	28	700
IV	06	19	25	625
V	02	23	25	625
VI	00	17	17	425
VII	00	28	28	700
VIII	02	25	27	675
Total	16	184	200	5000

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