

**SYMBIOSIS INSTITUTE OF TECHNOLOGY**  
**BACHELOR OF TECHNOLOGY**  
**PROGRAMME STRUCTURE 2015-19**

- 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** 420 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 and obtained at least 45% marks (40% in case of candidates belonging to SC/ST category) in the above subjects taken together.
- 6. SELECTION PROCEDURE**
- Merit list by valid score of Symbiosis Entrance Test (SET) or Joint Entrance Examination (JEE - Main)

- 7. MEDIUM OF INSTRUCTION** English
- 8. PROGRAMME PATTERN** Semester Pattern - 8 Semesters
- 9. COURSES & SPECIALIZATION** Computer Science and Engineering, Electronics and Telecommunication Engineering, Information Technology, Mechanical and Civil  
As per Annexure A
- 10. FEE**
- |                               |                       |
|-------------------------------|-----------------------|
| <b>Indian Students</b>        |                       |
| Academic Fee p.a.             | Rs. 2, 05, 000        |
| Institute Deposit             | Rs. 10,000            |
| <b>Total</b>                  | <b>Rs. 2, 15, 000</b> |
| <b>International Students</b> |                       |
| Academic Fee p.a.             | Rs. 3, 07, 500        |
| Institute Deposit             | Rs. 10, 000           |
| <b>Total</b>                  | <b>Rs. 3, 17, 500</b> |
- 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 (B Tech)** will be awarded in any one of the specializations: Civil Engineering, Computer Science and Engineering, Electronics and Telecommunication Engineering, Information Technology, Mechanical Engineering 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.

**First Year (Common for all branches)  
Semester I**

GROUP : A												
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 FY	Engineering Mathematics I	ES	4	2	-	-	-	50	75	5	125
T7604	070121102 FYA	Basic Mechanical Engineering	C	3	-	-	-	-	30	45	3	75
T7418	070121103 FYA	Environmental and Civil Engineering	C	3	-	-	-	-	30	45	3	75
T7391	070121104 FYA	Physics	ES	3	-	-	-	-	30	45	3	75
T7484	070121105 FYA	Computer Programming	C	2	-	-	-	-	20	30	2	50
T7605	070121106 FYA	Basic Mechanical Engineering Lab	C	-	-	2	10	15	-	-	1	25
T7458	070121107 FYA	Environmental and Civil Engineering Lab	C	-	-	2	10	15	-	-	1	25
T7392	070121108 FYA	Physics Lab	ES	-	-	2	10	15	-	-	1	25
T7485	070121109 FYA	Computer Programming Lab	C	-	-	2	10	15	-	-	1	25
T7658	070121110 FYA	Workshop Practice	C	-	-	4	20	30	-	-	2	50
	070121111 FYA	Applied Biology	ID	3	-	-	-	-	75	-	3	75
		<b>Total</b>		<b>18</b>	<b>2</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>235</b>	<b>240</b>	<b>25</b>	<b>625</b>

GROUP : B												
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 FY	Engineering Mathematics I	ES	4	2	-	-	-	50	75	5	125
T7540	070121112 FYB	Basic Electrical and Electronics Engineering	C	3	-	-	-	-	30	45	3	75
T7414	070121113 FYB	Engineering Mechanics	C	3	-	-	-	-	30	45	3	75
T7381	070121114 FYB	Chemistry	ES	3	-	-	-	-	30	45	3	75
T7609	070121115 FYB	Engineering Graphics	C	2	4	-	-	-	40	60	4	100
T7383	070121116 FYB	Communication Skills	GP	2	-	-	-	-	50	-	2	50
T7593	070121117 FYB	Basic Electrical and Electronics Engineering Lab	C	-	-	2	10	15	-	-	1	25
T7415	070121118 FYB	Engineering Mechanics Lab	C	-	-	2	10	15	-	-	1	25
T7382	070121119 FYB	Chemistry Lab	ES	-	-	2	10	15	-	-	1	25
T7384	070121120 FYB	Communication Skills Lab	GP	-	-	2	10	15	-	-	1	25
		<b>Total</b>		<b>17</b>	<b>6</b>	<b>8</b>	<b>40</b>	<b>60</b>	<b>230</b>	<b>270</b>	<b>24</b>	<b>600</b>

## Semester II

GROUP : A												
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	070121201 FY	Engineering Mathematics II	ES	4	2	-	-	-	50	75	5	125
T7540	070121212 FYA	Basic Electrical and Electronics Engineering	C	3	-	-	-	-	30	45	3	75
T7414	070121213 FYA	Engineering Mechanics	C	3	-	-	-	-	30	45	3	75
T7381	070121214 FYA	Chemistry	ES	3	-	-	-	-	30	45	3	75
T7609	070121215 FYA	Engineering Graphics	C	2	4	-	-	-	40	60	4	100
T7383	070121216 FYA	Communication Skills	GP	2	-	-	-	-	50	-	2	50
T7593	070121217 FYA	Basic Electrical and Electronics Engineering Lab	C	-	-	2	10	15	-	-	1	25
T7415	070121218 FYA	Engineering Mechanics Lab	C	-	-	2	10	15	-	-	1	25
T7382	070121219 FYA	Chemistry Lab	ES	-	-	2	10	15	-	-	1	25
T7384	070121220 FYA	Communication Skills Lab	GP	-	-	2	10	15	-	-	1	25
<b>Total</b>				<b>17</b>	<b>6</b>	<b>8</b>	<b>40</b>	<b>60</b>	<b>230</b>	<b>270</b>	<b>24</b>	<b>600</b>

GROUP : B												
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	070121201 FY	Engineering Mathematics II	ES	4	2	-	-	-	50	75	5	125
T7604	070121202 FYB	Basic Mechanical Engineering	C	3	-	-	-	-	30	45	3	75
T7418	070121203 FYB	Environmental and Civil Engineering	C	3	-	-	-	-	30	45	3	75
T7391	070121204 FYB	Physics	ES	3	-	-	-	-	30	45	3	75
T7484	070121205 FYB	Computer Programming	C	2	-	-	-	-	20	30	2	50
T7605	070121206 FYB	Basic Mechanical Engineering Lab	C	-	-	2	10	15	-	-	1	25
T7458	070121207 FYB	Environmental and Civil Engineering Lab	C	-	-	2	10	15	-	-	1	25
T7392	070121208 FYB	Physics Lab	ES	-	-	2	10	15	-	-	1	25
T7485	070121209 FYB	Computer Programming Lab	C	-	-	2	10	15	-	-	1	25
T7658	070121210 FYB	Workshop Practice	C	-	-	4	20	30	-	-	2	50
	070121211 FYB	Applied Biology	ID	3	-	-	-	-	75	-	3	75
<b>Total</b>				<b>18</b>	<b>2</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>235</b>	<b>240</b>	<b>25</b>	<b>625</b>

## 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				
T7435	070121301 CE	Solid Mechanics	C	4	-	-	-	-	40	60	4	100
T7422	070121302 CE	Fluid Mechanics I	C	3	2	-	-	-	40	60	4	100
T7405	070121303 CE	Concrete Technology	C	4	-	-	-	-	40	60	4	100
T7401	070121304 CE	Building Construction and Materials	C	3	-	-	-	-	30	45	3	75
T7412	070121305 CE	Engineering Geology	C	3	-	-	-	-	30	45	3	75
T7436	070121306 CE	Solid Mechanics Lab	C	-	-	2	10	15	-	-	1	25
T7423	070121307 CE	Fluid Mechanics I Lab	C	-	-	2	10	15	-	-	1	25
T7406	070121308 CE	Concrete Technology Lab	C	-	-	2	10	15	-	-	1	25
T7402	070121309 CE	Building Construction and Materials Lab	C	-	-	2	10	15	-	-	1	25
T7413	070121310 CE	Engineering Geology Lab	C	-	-	2	10	15	-	-	1	25
T7674	070121311 CE	Cyber Security	ID	2	-	-	-	-	50	-	2	50
<b>Liberal Arts (Choose any two of the following)</b>												
T6184	070121312 CE	Basic German I	ID	2	-	-	-	-	50	-	2	50
T6185	070121313 CE	Basic German II	ID	2	-	-	-	-	50	-	2	50
T6186	070121314 CE	Basic French I	ID	2	-	-	-	-	50	-	2	50
T6187	070121315 CE	Basic French II	ID	2	-	-	-	-	50	-	2	50
T6188	070121316 CE	Basic Spanish I	ID	2	-	-	-	-	50	-	2	50
T6189	070121317 CE	Basic Spanish II	ID	2	-	-	-	-	50	-	2	50
T6167	070121318 CE	Basics of Microeconomics	ID	2	-	-	-	-	50	-	2	50
T6168	070121319 CE	Basics of Macroeconomics	ID	2	-	-	-	-	50	-	2	50
T6274	070121320 CE	Foundations of Ethics	ID	2	-	-	-	-	50	-	2	50
T6275	070121321 CE	Concept of Wealth and Prosperity	ID	2	-	-	-	-	50	-	2	50
<b>Total</b>				<b>23</b>	<b>2</b>	<b>10</b>	<b>50</b>	<b>75</b>	<b>330</b>	<b>270</b>	<b>29</b>	<b>725</b>

## 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				
T7380	070121401 CE	Applied Mathematics	C	3	2	-	-	-	40	60	4	100
T7438	070121402 CE	Structural Analysis-I	C	3	2	-	-	-	40	60	4	100
T7403	070121403 CE	Building Design and Drawing	C	4	-	-	-	-	40	60	4	100
T7424	070121404 CE	Fluid Mechanics II	C	3	2	-	-	-	40	60	4	100
T7445	070121405 CE	Surveying-I	C	4	-	-	-	-	40	60	4	100
T7404	070121406 CE	Building Design and Drawing Lab	C	-	-	2	10	15	-	-	1	25
T7425	070121407 CE	Fluid Mechanics II Lab	C	-	-	2	10	15	-	-	1	25
T7446	070121408 CE	Surveying-I Lab	C	-	-	2	10	15	-	-	1	25
T8000	070121409 CE	Service Learning	ID	4	-	-	-	-	100	-	4	100
<b>Total</b>				<b>21</b>	<b>6</b>	<b>6</b>	<b>30</b>	<b>45</b>	<b>300</b>	<b>300</b>	<b>27</b>	<b>675</b>
T4005	0070121410 CE	*Integrated Disaster Management	GP	-	-	-	-	-	-	-	-	Letter Grade

## 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 CE	Structural Analysis-II	C	3	2	-	-	-	40	60	4	100
T7450	070121502 CE	Transportation Engineering-I	C	3	-	-	-	-	30	45	3	75
T7433	070121503 CE	Quantity Surveying and Valuation	C	4	-	-	-	-	40	60	4	100
T7416	070121504 CE	Environmental Engineering -I	C	3	-	-	-	-	30	45	3	75
T7439	070121505 CE	Structural Design-I	C	3	2	-	-	-	40	60	4	100
T7447	070121506 CE	Surveying-II	C	3	-	-	-	-	30	45	3	75
T7434	070121507 CE	Quantity Surveying and Valuation Lab	C	-	-	2	10	15	-	-	1	25
T7417	070121508 CE	Environmental Engineering -I Lab	C	-	-	2	10	15	-	-	1	25
T7440	070121509 CE	Structural Design-I Lab	C	-	-	2	10	15	-	-	1	25
T7448	070121510 CE	Surveying-II Lab	C	-	-	2	10	15	-	-	1	25
<b>Free Elective (Choose any one of the following)</b>												
T7457	070121511 CE	Integrated Water Resources Development and Management	C	3	-	-	-	-	30	45	3	75

T7456	070121512 CE	Town and Country Planning	C	3	-	-	-	-	30	45	3	75
T7499	070121513 CE	Java	ID	3	-	-	-	-	30	45	3	75
T7509	070121514 CE	Open Source Technologies	ID	3	-	-	-	-	30	45	3	75
T7474	070121515 CE	Basics of Database	ID	3	-	-	-	-	30	45	3	75
T7574	070121516 CE	MATLAB	ID	3	-	-	-	-	30	45	3	75
T7584	070121517 CE	Printed Circuit Board (PCB) Design	ID	3	-	-	-	-	30	45	3	75
T7602	070121518 CE	Automobile Engineering	ID	3	-	-	-	-	30	45	3	75
T7650	070121519 CE	Six Sigma	ID	3	-	-	-	-	30	45	3	75
T7020	070121520 CE	Nanotechnology	ID	3	-	-	-	-	30	45	3	75
T7394	070121521 CE	Smart Materials	ID	3	-	-	-	-	30	45	3	75
T7393	070121522 CE	Computer Based Statistical Packages	ID	3	-	-	-	-	30	45	3	75
<b>Total</b>				<b>22</b>	<b>4</b>	<b>8</b>	<b>40</b>	<b>60</b>	<b>240</b>	<b>360</b>	<b>28</b>	<b>700</b>

**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				
<b>Group A</b>												
T7920	070121601 CE	Internship (6 Months)	PD	-	-	-	195	130	-	-	13	325
T7671	070121602 CE	Seminar	PD	-	-	-	60	40	-	-	4	100
							<b>255</b>	<b>170</b>	-	-	<b>17</b>	<b>425</b>
	070121603 CE	Global Immersion Programme		-	-	-	-	-	-	-	<b>12</b>	<b>300</b>
	<b>070121604 CE</b>	<b>Mini Project</b>	<b>PD</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>15</b>	<b>10</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>25</b>
<b>Group B</b>												
T7905	<b>070121605 CE</b>	Internship(6-8 Weeks)	PD	-	-	10	75	50	-	-	5	125
T7453	<b>070121606 CE</b>	Water Power Engineering	C	4	-	-	-	-	40	60	4	100
T7410	<b>070121607 CE</b>	Earth structures	C	4	-	-	-	-	40	60	4	100
T7048	<b>070121608 CE</b>	Project Management	C	4	-	-	-	-	40	60	4	100
<b>Total</b>				<b>12</b>	<b>-</b>	<b>10</b>	<b>75</b>	<b>50</b>	<b>120</b>	<b>180</b>	<b>17</b>	<b>425</b>

**Note:- For student/s under 'Global Immersion Programme' (070121603CE) and 'Mini Project' (070121604CE), course 'Internship' (070121601CE) will be waived off.**

## 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 CE	Environmental Engineering -II	C	3	-	-	-	-	30	45	3	75
T7428	070121702 CE	Geotechnical Engineering - I	C	3	2	-	-	-	40	60	4	100
T7407	070121703 CE	Construction Techniques and Management	C	3	-	-	-	-	30	45	3	75
T7441	070121704 CE	Structural Design-II	C	3	2	-	-	-	40	60	4	100
T7451	070121705 CE	Transportation Engineering - II	C	3	-	-	-	-	30	45	3	75
T7454	070121706 CE	Water Resources Engineering	C	3	-	-	-	-	30	45	3	75
	070121707 CE	Inter Institute Course I	ID	2	-	-	-	-	50	-	2	50
	070121708 CE	Inter Institute Course II	ID	2	-	-	-	-	50	-	2	50
T7420	070121709 CE	Environmental Engineering-II Lab	C	-	-	2	10	15	-	-	1	25
T7429	070121710 CE	Geotechnical Engineering-I Lab	C	-	-	2	10	15	-	-	1	25
T7442	070121711 CE	Structural Design-II Lab	C	-	-	2	10	15	-	-	1	25
T7452	070121712 CE	Transportation Engineering - II Lab	C	-	-	2	10	15	-	-	1	25
		<b>Total</b>		<b>22</b>	<b>4</b>	<b>8</b>	<b>40</b>	<b>60</b>	<b>300</b>	<b>300</b>	<b>28</b>	<b>700</b>

## 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 CE	B.Tech Project	PD	-	-	8	40	60	-	-	4	100
T7430	070121802 CE	Geotechnical Engineering -II	C	3	2	-	-	-	40	60	4	100
T7443	070121803 CE	Structural Design - III	C	3	-	-	-	-	30	45	3	75
T7408	070121804 CE	Dams and Hydraulic Structures	C	3	-	-	-	-	30	45	3	75
T7444	070121805 CE	Structural Design - III Lab	C	-	-	2	10	15	-	-	1	25
T7409	070121806 CE	Dams and Hydraulic Structures Lab	C	-	-	2	10	15	-	-	1	25
<b>Elective-I (Choose any one of the following)</b>												
T7431	070121807 CE	Infrastructural Engineering	C	3	-	-	-	-	30	45	3	75
T7427	070121808 CE	Geographic Information Systems	C	3	-	-	-	-	30	45	3	75

T7449	070121809 CE	Systems Approach in Civil Engineering	C	3	-	-	-	-	30	45	3	75
<b>Elective-II (Choose any one of the following)</b>												
T7400	070121810 CE	Advanced Design of RCC Structures	C	3	-	-	-	-	30	45	3	75
T7411	070121811 CE	Earthquake Engineering	C	3	-	-	-	-	30	45	3	75
T7432	070121812 CE	Pavement Design and Construction	C	3	-	-	-	-	30	45	3	75
T7455	070121813 CE	Ferro Cement	C	3	-	-	-	-	30	45	3	75
<b>Total</b>				<b>15</b>	<b>2</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>160</b>	<b>240</b>	<b>22</b>	<b>550</b>

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

L- Lecture , T-Tutorial, HA-Home Assignment

C - Core Course

ES - Engineering Science Course

GP - General Proficiency Course

ID - Inter Disciplinary Course

Practical external examination may be conducted by alternate internal faculty

CA- Continuous Assessment, ESE- End Semester Examination

Practical, CA, ESE are separate heads of Passing

PD - Professional Development Course