Symbiosis Institute of Technology, Pune
Bachelor of Technology (Civil Engineering)
Programme Structure 2026-2030

<table>
<tr><td>1.</td><td>OBJECTIVE</td><td colspan="4">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.</td></tr>
<tr><td>2.</td><td>DURATION (IN MONTHS)</td><td colspan="4">48 (Full Time)</td></tr>
<tr><td>3.</td><td>INTAKE</td><td colspan="4">60</td></tr>
<tr><td rowspan="4">4.</td><td rowspan="4">RESERVATION</td><td rowspan="2">I.Within the sanctioned intake</td><td>a) SC
(In Percentage)</td><td>b) ST
(In Percentage)</td><td>c) Persons with Disabilities
(In Percentage)</td></tr>
<tr><td>15</td><td>7.5</td><td>3</td></tr>
<tr><td rowspan="2">II.Over and above the sanctioned intake</td><td colspan="2">a) Kashmiri Migrants
(In Seats)</td><td>b) International Students
(In Percentage)</td></tr>
<tr><td colspan="2">2</td><td>15</td></tr>
<tr><td>5.</td><td>ELIGIBILITY</td><td colspan="4">Passed 10+2 examination with Physics, Chemistry and Mathematics as compulsory subjects. Obtained at least 45% marks (40% marks in case of candidates belonging to reserved category) in the above subjects taken together.
OR
Passed D.Voc. Stream in the same or allied sector. (The University will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc., for the students coming from diverse backgrounds to prepare Level playing field and desired learning outcomes of the programme).</td></tr>
</table>

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		B.Tech. : Lateral Entry Passed Minimum Three-years/ Two-year (Lateral Entry) Diploma examination with at least 45% marks (40% marks in case of candidates belonging to reserved category) in ANY branch of Engineering and Technology. OR Passed B.Sc. Degree from a recognized University as defined by UGC, with atleast 45% marks (40% marks or equivalent grade for Scheduled Caste / Scheduled Tribes) and passed 10+2 examination with Mathematics as a subject. OR Passed B. Voc. /3 year D.Voc. Stream in the same allied sector. (The Constituent will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc., for the students coming from diverse backgrounds to achieve desired learning outcomes of the programme).			
6.	**SELECTION PROCEDURE**	Merit list by a valid score of Symbiosis Entrance Test (SIT EEE) or Joint Entrance Examination (JEE - Mains) or All States Engineering Entrance Examination			
7.	**MEDIUM OF INSTRUCTION**	English			
8.	**PROGRAMME PATTERN**	Semester			
9.	**COURSE & SPECIALISATION**	Annexure A: Bachelor of Technology (Civil Engineering) Students may pursue optional 'Honours' specialisation in one of the specialisation areas by completing additional 20 credits in Semester - 5, 6, 7 as specified in Annexure B or/and optional 'Minor' Specialisation by completing additional 18 credits in Semester - 3, 4, 5, 6, 7 as specified in Annexure C. Annexure B: Honours Specialisation offered 1. Construction Management with BIM 2. Infrastructure Engineering and Management Annexure C: Minor Specialisation offered 1. Advanced Digital Technologies			
10.	**FEE**		**Academic Fee p.a**	**Institute Deposit**	**Total**

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	Indian Students (Amount in INR)		300000	20000	320000
	International Students	**NRI/ PIO/ OCI Category (Amount in US$)**	5875	275	6150
		Foreign National Category (Amount in US$)	1300	275	1575

11.	**ASSESSMENT**	The theory courses will have 40% Continuous Assessment and 60% Term End [University] examination, Lab courses (Practical) will have 60% Continuous Assessment and 40% Term End [University] examination however, some courses (not more than 30% of the total programme credits) may have 100% Continuous Assessment.
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 Continuous Assessment and End Semester 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) OR Bachelor of Technology (Civil Engineering) with Honours in Construction Management with BIM/ Infrastructure Engineering and Management OR/and Bachelor of Technology (Civil Engineering) with Minor in Advanced Digital Technologies as applicable will be awarded at the end of semester 8 examination by taking into consideration the performance of all semester examinations after obtaining minimum 4.00 CGPA out of 10 CGPA.

14. CLASSIFICATION OF CREDITS

Semester	Basic Sciences	Engineering Sciences	Professional Core	Professional Elective	Humanities and Social Sciences including Management	Multidisciplinary Open Electives	Project/ Internship/ Seminar	Indian Knowledge System	Total Credits	No. of Mandatory Non-Credit Course/s	No. of Non-Credit Audit Course/s
Track 1											
1	7	11	0	0	2	0	0	0	20	0	As per the student's choice
2	7	3	7	0	1	0	0	2	20	1 *	
3	3	2	13	0	2	0	0	0	20	1 *	
4	3	0	11	0	1	3	2	0	20	1 *	
5	0	1	13	3	0	3	2	0	22	2 *	
6	0	1	11	7	0	3	0	0	22	1 *	
7	0	0	5	12	1	0	4	0	22	1 *	
8	0	0	0	0	0	0	14	0	14	0	
Total	**20**	**18**	**60**	**22**	**7**	**9**	**22**	**2**	**160**	**0**	
Track 2											
1	7	11	0	0	2	0	0	0	20	0	

2	7	3	7	0	1	0	0	2	20	1 *	As per the student's choice
3	3	2	13	0	2	0	0	0	20	1 *	
4	3	0	11	0	1	3	2	0	20	1 *	
5	0	1	13	3	0	3	2	0	22	2 *	
6	0	1	11	7	0	3	0	0	22	1 *	
7	0	0	6	4	0	0	12	0	22	1 *	
8	0	0	0	0	0	0	14	0	14	0	
Total	**20**	**18**	**61**	**14**	**6**	**9**	**30**	**2**	**160**	**0**	
Optional Additional Courses (Honours)											
5	0	0	8	0	0	0	0	0	8	0	
6	0	0	3	0	0	0	3	0	6	0	
7	0	0	3	0	0	0	3	0	6	0	
Total	**0**	**0**	**14**	**0**	**0**	**0**	**6**	**0**	**20**	**0**	
Optional Additional Courses (Minor)											
3	0	0	6	0	0	0	0	0	6	0	As per the student's choice
4	0	0	4	0	0	0	0	0	4	0	
5	0	0	3	0	0	0	0	0	3	0	
6	0	0	2	0	0	0	0	0	2	0	
7	0	0	3	0	0	0	0	0	3	0	
Total	**0**	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**18**	**0**	

* Satisfactory completion of non credit courses 'Health and Wellness', '*Vasudhaiva Kutumbakam*' and 'Career Essentials I to V' is mandatory for award of degree.

Additional Note: #Health and Wellness Module I and Module II will be conducted during the semesters mentioned in the programme structure. However, the course will be listed on the students' grade sheets as "Health and Wellness" in the semester in which the institute's course code is officially assigned.

This Programme Structure is aligned with the norms laid down by the University and is approved by the Academic Council.
Hereafter changes (if any) which conform to the policy on "Curriculum Development and Review" would be permissible, subject to revision of the Programme Structure, following the specified processes.

Director - Academics

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Symbiosis Institute of Technology, Pune
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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 1													
Generic Core Courses													
TEE7246	0701210101	Matrices and Calculus	BS		3	1	0	0	0	40	60	4	100
TEE7236	0701210102	Applied Physics for Civil Engineering	BS		2	0	2	15	10	20	30	3	75
TEE7283	0701210103	Applied Mechanics	ES		2	1	2	15	10	30	45	4	100
TEE7324	0701210104	Engineering Graphics	ES		0	0	4	30	20	0	0	2	50
TEE7295	0701210105	Introduction to Python Programming	ES		0	0	4	30	20	0	0	2	50
TM2278	0701210106	Introduction to Environment and Sustainability	ES		0	0	2	25	0	0	0	1	25
TEE7364	0701210107	Tinker and IDEA Lab	ES		0	0	2	25	0	0	0	1	25
TEE7284	0701210108	Civil Engineering- Societal and Global Impact	ES		0	0	2	25	0	0	0	1	25
T6873	0701210109	Creative Thinking	HSMC		1	0	0	0	0	25	0	1	25
THM6150	0701210110	Technical and Professional Communication Skills	HSMC		0	0	2	25	0	0	0	1	25
				Total	**8**	**2**	**20**	**190**	**60**	**115**	**135**	**20**	**500**
Semester : 2													
Generic Core Courses													
TEE7247	0701210201	Multivariable Calculus and Differential Equations	BS		3	1	0	0	0	40	60	4	100
TEE7239	0701210202	Chemistry for Civil Engineers	BS		2	0	2	15	10	20	30	3	75

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TEE7315	0701210203	Introduction to Sensors and Microcontrollers	ES		0	0	4	30	20	0	0	2	50
TEE7288	0701210204	Software Tools for Civil Engineers	ES		0	0	2	15	10	0	0	1	25
TEE7286	0701210205	Digital Land Surveying and Mapping	PC		3	0	2	15	10	30	45	4	100
TEE7285	0701210206	Concrete Technology	PC		2	0	2	15	10	20	30	3	75
T6732	0701210207	Critical Thinking	HSMC		1	0	0	0	0	25	0	1	25
THM6144	0701210208	Indian Knowledge Systems	IKS		2	0	0	0	0	50	0	2	50
TEE7265	0701210209	Career Essentials - I *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
				Total	**13**	**1**	**12**	**90**	**60**	**185**	**165**	**20**	**500**
Semester : 3													
Generic Core Courses													
TEE7417	0701210301	Statistics and Probability	BS		2	1	0	0	0	30	45	3	75
TEE7431	0701210302	Building Construction Technology	ES		0	0	2	15	10	0	0	1	25
TEE7444	0701210303	Cyber Security Essentials	ES		1	0	0	0	0	25	0	1	25
TEE7439	0701210304	Strength of Materials	PC		2	1	2	15	10	30	45	4	100
TEE7436	0701210305	Introduction to Fluid Mechanics	PC		2	1	2	15	10	30	45	4	100
TEE7433	0701210306	Formwork Engineering Practices	PC		3	0	0	0	0	75	0	3	75

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TE7710	0701210307	Computer Aided Building Design and Drawing Lab	PC		0	0	4	50	0	0	0	2	50
T8000	0701210308	Service Learning	HSMC		0	0	4	50	0	0	0	2	50
TEE7419	0701210309	Career Essentials - II *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
TH4788		Health and Wellness Module I #	MC		0	0	0	0	0	0	0	0	0
Total					**10**	**3**	**14**	**145**	**30**	**190**	**135**	**20**	**500**
Semester : 4													
Generic Core Courses													
TEE7249	0701210401	Numerical Methods	BS		2	0	2	15	10	20	30	3	75
TEE7434	0701210402	Geotechnical Engineering	PC		3	0	2	15	10	30	45	4	100
TEE7437	0701210403	Open Channel Flow	PC		3	0	2	15	10	30	45	4	100
TEE7440	0701210404	Theory of Structures	PC		2	1	0	0	0	30	45	3	75
T2646	0701210405	Entrepreneurship Venture	HSMC		1	0	0	0	0	25	0	1	25
TE7290	0701210406	Project Based Learning -I	PIS		0	0	4	50	0	0	0	2	50

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TEE7420	0701210407	Career Essentials - III *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
TH4789		Health and Wellness Module II #	MC		0	0	0	0	0	0	0	0	0
				Total	**11**	**1**	**10**	**95**	**30**	**135**	**165**	**17**	**425**
Multidisciplinary Open Elective (Choose any one course)													
TEE7416	0701210408	Quantum Computing for Engineers	MOPE	Applied Science	2	1	0	0	0	30	45	3	75
TEE7414	0701210409	Mathematics for Data Science	MOPE	Applied Science	2	1	0	0	0	30	45	3	75
TEE7458	0701210410	Web Technologies	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	75
TEE7447	0701210411	Data Science	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	75
TEE7018	0701210412	Engineering Simulation and Modeling Tools	MOPE	Electronics and Telecommunication Engineering	2	1	0	0	0	30	45	3	75
TEE7472	0701210413	Medical Electronics	MOPE	Electronics and Telecommunication Engineering	2	1	0	0	0	30	45	3	75

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TE7351	0701210414	3D Printing and Prototyping	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	75
TEE7476	0701210415	Battery Management Systems	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	75
TEE7425	0701210416	Fundamentals of Machine Learning	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	75
TEE7418	0701210417	AI System Development	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	75
TEE7489	0701210418	Fundamentals of Robotics and Automation	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	75
TEE7499	0701210419	Robotic Process Automation	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Semester : 5													
Generic Core Courses													
TEE7478	0701210501	Design Thinking	ES		1	0	0	0	0	25	0	1	25
P4613	0701210502	Design of RCC Structures	PC		3	0	2	15	10	30	45	4	100
P4579	0701210503	Static and Dynamic Analysis of Structures	PC		2	1	0	0	0	30	45	3	75
P4603	0701210504	Water Treatment and Supply System	PC		3	0	0	0	0	30	45	3	75
P4624	0701210505	Construction Project Management for Professionals	PC		3	0	0	0	0	75	0	3	75
F0001	0701210506	Flexi-Credit Course	PE		0	0	2	25	0	0	0	1	25
TE7291	0701210507	Project Based Learning-II	PIS		0	0	4	50	0	0	0	2	50

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
P4784	0701210508	Career Essentials - IV *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
SMC001	0701210509	*Vasudhaiva Kutumbakam* *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
				Total	**12**	**1**	**8**	**90**	**10**	**190**	**135**	**17**	**425**
Professional Elective (Choose any one course)													
P4632	0701210510	Energy Efficient Buildings	PE		2	0	0	0	0	50	0	2	50
P4636	0701210511	Storm Water Management	PE		2	0	0	0	0	50	0	2	50
P4638	0701210512	Occupational Health and Safety	PE		2	0	0	0	0	50	0	2	50
P4643	0701210513	Professional Practices in Construction	PE		2	0	0	0	0	50	0	2	50
P4651	0701210514	Precast Construction	PE		2	0	0	0	0	50	0	2	50
P4652	0701210515	Traffic Engineering	PE		2	0	0	0	0	50	0	2	50
P4575	0701210516	Hydrology and Water Resource Engineering	PE		2	0	0	0	0	50	0	2	50
				Total Required Credits				**0**	**0**	**50**	**0**	**2**	**50**

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Multidisciplinary Open Elective (Choose any one course)													
P5210	0701210517	Financial Mathematics	MOPE	Applied Science	2	1	0	0	0	30	45	3	75
P5211	0701210518	Advanced Materials	MOPE	Applied Science	2	1	0	0	0	30	45	3	75
P4840	0701210519	Introduction to Cloud Computing	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	75
P4844	0701210520	Agile Methodologies	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	75
P4472	0701210521	Embedded System and IoT	MOPE	Electronics and Telecommunication Engineering	2	1	0	0	0	30	45	3	75
P5241	0701210522	Basics of 5G Technology	MOPE	Electronics and Telecommunication Engineering	2	1	0	0	0	30	45	3	75
T7650	0701210523	Six Sigma	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	75
P5277	0701210524	Electric and Hybrid Vehicles	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	75
P4789	0701210525	Optimization for ML Systems	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	75
P4790	0701210526	Deep Learning Essentials	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	75
P5216	0701210527	Industrial Robotics	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	75

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
P5217	0701210528	PLC and SCADA	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Semester : 6													
Generic Core Courses													
P4617	0701210601	Financial Management in Civil Engineering	ES		1	0	0	0	0	25	0	1	25
P4581	0701210602	Practical Design of Structural Steel Members	PC		2	1	2	25	0	75	0	4	100
P4588	0701210603	Highway Planning, Design and Construction	PC		3	0	2	25	0	75	0	4	100
T7966	0701210604	Advanced Surveying Lab	PC		0	0	4	50	0	0	0	2	50
P4606	0701210605	Water and Waste Water Analysis Lab	PC		0	0	2	15	10	0	0	1	25
P4785	0701210606	Career Essentials - V *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
Total					**6**	**1**	**10**	**115**	**10**	**175**	**0**	**12**	**300**
Professional Elective-I (Choose any one course)													
P4630	0701210607	Waste Water Treatment and Recycling	PE		3	0	0	0	0	30	45	3	75
P4635	0701210608	Physico-chemical Processes for Water and Waste Water Treatment	PE		3	0	0	0	0	30	45	3	75

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Professional Elective-II (Choose any one course)													
P4637	0701210609	Foundation Engineering	PE		3	0	2	15	10	30	45	4	100
P4640	0701210610	Construction Equipment Planning and Management	PE		3	0	2	15	10	30	45	4	100
P4641	0701210611	Green Building Technology	PE		3	0	2	15	10	30	45	4	100
P4646	0701210612	Prestressed Concrete	PE		3	0	2	15	10	30	45	4	100
P4647	0701210613	Design of Hydraulic Structures	PE		3	0	2	15	10	30	45	4	100
P4653	0701210614	Sustainable Engineering and Technology	PE		3	0	2	15	10	30	45	4	100
P4648	0701210615	Introduction to Remote Sensing and GIS	PE		3	0	2	15	10	30	45	4	100
P4645	0701210616	Pavement Design	PE		3	0	2	15	10	30	45	4	100
Total Required Credits								**15**	**10**	**30**	**45**	**4**	**100**
Multidisciplinary Open Elective (Choose any one course)													
P5212	0701210617	Bioinformatics	MOPE	Applied Science	2	1	0	0	0	30	45	3	75
P5213	0701210618	Introduction to Space Science	MOPE	Applied Science	2	1	0	0	0	30	45	3	75
P4830	0701210619	Software Testing and Quality Assurance	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	75

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
P4831	0701210620	Introduction to AR-VR	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	75
P4274	0701210621	Semiconductor Technology Trends	MOPE	Electronics and Telecommunication Engineering	2	1	0	0	0	30	45	3	75
P4475	0701210622	Renewable Energy Systems	MOPE	Electronics and Telecommunication Engineering	2	1	0	0	0	30	45	3	75
P4448	0701210623	Supply Chain Management	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	75
P4449	0701210624	Smart Manufacturing and Introduction of Industry 5.0	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	75
P4791	0701210625	Gen AI Tools and Techniques	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	75
P4792	0701210626	Data Engineering and Applications	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	75
P5218	0701210627	Mobile Robotics	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	75
P5219	0701210628	Introduction to Aerial Robotics and Drone Technology	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Semester : 7													

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Track 1 Generic Core Courses													
P4710	0701210701	Building Information Modelling in Construction	PC		3	0	0	0	0	75	0	3	75
P4662	0701210702	Project Estimation, Costing and Valuation	PC		0	0	4	30	20	0	0	2	50
P4406	0701210703	Organizational Behaviour	HSMC		1	0	0	0	0	25	0	1	25
T7804	0701210704	Project	PIS		0	0	8	60	40	0	0	4	100
SMC003	0701210705	Health and Wellness *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
Total Required Credits								**90**	**60**	**100**	**0**	**10**	**250**
Professional Elective-I (Choose any one course)													
P4673	0701210706	Design of Pre-engineered Buildings	PE		4	0	0	0	0	40	60	4	100
P4674	0701210707	Modular Construction	PE		4	0	0	0	0	40	60	4	100
Total Required Credits								**0**	**0**	**40**	**60**	**4**	**100**
Professional Elective-II (Choose any one course)													
P4665	0701210708	3D Printing in Construction	PE		4	0	0	0	0	40	60	4	100

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
P4681	0701210709	Smart Cities Design and Management	PE		4	0	0	0	0	40	60	4	100
P4669	0701210710	Integrated Water Resource Management	PE		4	0	0	0	0	40	60	4	100
P4663	0701210711	Advanced Structural Analysis	PE		4	0	0	0	0	40	60	4	100
P4675	0701210712	Railway and Tunnel Engineering	PE		4	0	0	0	0	40	60	4	100
P4667	0701210713	Glass Facade Engineering	PE		4	0	0	0	0	40	60	4	100
P4682	0701210714	Bridge Engineering	PE		4	0	0	0	0	40	60	4	100
P4683	0701210715	Solid and Hazardous Waste Management	PE		4	0	0	0	0	40	60	4	100
Total Required Credits								**0**	**0**	**40**	**60**	**4**	**100**
Professional Elective-III (Choose any one course)													
P4690	0701210716	Advanced Concrete Technology	PE		3	1	0	0	0	40	60	4	100
P4697	0701210717	Harbour and Airport Engineering	PE		3	1	0	0	0	40	60	4	100
P4698	0701210718	Optimization in Civil Engineering	PE		3	1	0	0	0	40	60	4	100
P4694	0701210719	Intelligent Transportation Systems	PE		3	1	0	0	0	40	60	4	100
P4692	0701210720	Structural Health Monitoring	PE		3	1	0	0	0	40	60	4	100
P4693	0701210721	Water Distribution Network Design	PE		3	1	0	0	0	40	60	4	100
P4695	0701210722	Soil Structure Interaction	PE		3	1	0	0	0	40	60	4	100
P4696	0701210723	Environmental Impact and Life Cycle Assessment	PE		3	1	0	0	0	40	60	4	100

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Total Required Credits								**0**	**0**	**40**	**60**	**4**	**100**
Track - 2 Generic Core Courses													
P4710	0701210701	Building Information Modelling in Construction	PC		3	0	0	0	0	75	0	3	75
SMC003	0701210705	Health and Wellness *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
P4704	0701210724	Pre-Engineered Buildings	PC		3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**105**	**45**	**6**	**150**
Professional Elective-II (Choose any one course)													
P4665	0701210708	3D Printing in Construction	PE		4	0	0	0	0	40	60	4	100
P4681	0701210709	Smart Cities Design and Management	PE		4	0	0	0	0	40	60	4	100
P4669	0701210710	Integrated Water Resource Management	PE		4	0	0	0	0	40	60	4	100
P4663	0701210711	Advanced Structural Analysis	PE		4	0	0	0	0	40	60	4	100
P4675	0701210712	Railway and Tunnel Engineering	PE		4	0	0	0	0	40	60	4	100
P4667	0701210713	Glass Facade Engineering	PE		4	0	0	0	0	40	60	4	100
P4682	0701210714	Bridge Engineering	PE		4	0	0	0	0	40	60	4	100

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Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
P4683	0701210715	Solid and Hazardous Waste Management	PE		4	0	0	0	0	40	60	4	100
Total Required Credits					**0**	**0**		**0**	**0**	**40**	**60**	**4**	**100**
Generic Elective courses Group (Choose any one Course)													
T7912	0701210725	Startup Internship	PIS		0	0	24	180	120	0	0	12	300
T7912	0701210726	Research Internship	PIS		0	0	24	180	120	0	0	12	300
T7912	0701210727	Industry Internship	PIS		0	0	24	180	120	0	0	12	300
Total Required Credits								**180**	**120**	**0**	**0**	**12**	**300**
Semester : 8													
Generic Core Courses													
T7912	0701210801	Internship	PIS		0	0	24	180	120	0	0	12	300
T7802	0701210802	Seminar	PIS		0	0	4	50	0	0	0	2	50
Total					**0**	**0**	**28**	**230**	**120**	**0**	**0**	**14**	**350**

Abbreviations (Nature)	Description
BS	Basic Sciences
ES	Engineering Sciences
PC	Professional Core
PE	Professional Elective
HSMC	Humanities and Social Sciences including Management
MOPE	Multidisciplinary Open Electives
PIS	Project, Internship, Seminar
IKS	Indian Knowledge System
L	Lecture
MC	Mandatory Course
T	Tutorial
CA	Continuous Assessment
ESE	End Semester Examination
LAB	Laboratory

Track 1 (T1): For Regular Students
Track 2 (T2): For Students opting for Internship/ Entrepreneurship

Definition:
Honours: Students have the option to pursue an "Honours" degree by completing an additional 20 credits within their major discipline, focusing on more advanced, specialised, emerging, or multidisciplinary courses beyond the standard requirements of the B.Tech degree.

Minors: Students have the option to pursue a "Minor" by completing 18 credits in a discipline/ specialisation other than their major discipline beyond the standard requirements of the B.Tech. Degree.

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Semester	Continuous Assessment	End Semester Examination	Total Credits	Total Marks
Track 1				
Semester 1	5	15	20	500
Semester 2	3	17	20	500
Semester 3	8	12	20	500
Semester 4	3	17	20	500
Semester 5	9	13	22	550
Semester 6	11	11	22	550
Semester 7	4	18	22	550
Semester 8	2	12	14	350
Total	**45**	**115**	**160**	**4000**
Track 2				
Semester 1	5	15	20	500
Semester 2	3	17	20	500
Semester 3	8	12	20	500
Semester 4	3	17	20	500
Semester 5	9	13	22	550
Semester 6	11	11	22	550
Semester 7	3	19	22	550
Semester 8	2	12	14	350
Total	**44**	**116**	**160**	**4000**

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Annexure B
Optional 'Honours' Specialisation

Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 5													
Construction Management with BIM Specialisation Core Courses													
P4715	0701210529	BIM in Architecture and Structures	PC	Construction Management with BIM	3	0	2	15	10	30	45	4	100
P4713	0701210530	Introduction to Digital Construction Management	PC	Construction Management with BIM	3	0	2	15	10	30	45	4	100
				Total	**6**	**0**	**4**	**30**	**20**	**60**	**90**	**8**	**200**
Semester : 5													
Infrastructure Engineering and Management Specialisation Core Courses													
P4708	0701210531	Project Planning and Execution	PC	Infrastructure Engineering and Management	3	0	2	15	10	30	45	4	100
P4721	0701210532	Planning and Design of Water Structures	PC	Infrastructure Engineering and Management	3	0	0	0	0	75	0	3	75
TE7202	0701210533	Infrastructure Planning and Design Lab	PC	Infrastructure Engineering and Management	0	0	2	15	10	0	0	1	25
				Total	**6**	**0**	**4**	**30**	**20**	**105**	**45**	**8**	**200**
Semester : 6													

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Annexure B
Optional 'Honours' Specialisation

Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Construction Management with BIM Specialisation Core Courses													
F0003	0701210629	Flexi-Credit Course	PC	Construction Management with BIM	3	0	0	0	0	75	0	3	75
T7802	0701210630	Honours Project	PIS	Construction Management with BIM	0	0	4	30	20	0	0	2	50
T7801	0701210631	Honours Seminar	PIS	Construction Management with BIM	0	0	2	15	10	0	0	1	25
				Total	**3**	**0**	**6**	**45**	**30**	**75**	**0**	**6**	**150**
Semester : 6													
Infrastructure Engineering and Management Specialisation Core Courses													
T7802	0701210630	Honours Project	PIS	Infrastructure Engineering and Management	0	0	4	30	20	0	0	2	50
T7801	0701210631	Honours Seminar	PIS	Infrastructure Engineering and Management	0	0	2	15	10	0	0	1	25
P4725	0701210632	Construction Methods for Infrastructure Projects	PC	Infrastructure Engineering and Management	3	0	0	0	0	30	45	3	75
				Total	**3**	**0**	**6**	**45**	**30**	**30**	**45**	**6**	**150**
Semester : 7													

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Annexure B
Optional 'Honours' Specialisation

Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Construction Management with BIM Specialisation Core Courses													
T7803	0701210728	Honours Project	PIS	Construction Management with BIM	0	0	6	45	30	0	0	3	75
P4719	0701210729	BIM Collaboration and Estimation	PC	Construction Management with BIM	3	0	0	0	0	75	0	3	75
				Total	**3**	**0**	**6**	**45**	**30**	**75**	**0**	**6**	**150**
Semester : 7													
Infrastructure Engineering and Management Specialisation Core Courses													
T7803	0701210728	Honours Project	PIS	Infrastructure Engineering and Management	0	0	6	45	30	0	0	3	75
P4723	0701210730	Durability Assessment and Quality Control	PC	Infrastructure Engineering and Management	3	0	0	0	0	75	0	3	75
				Total	**3**	**0**	**6**	**45**	**30**	**75**	**0**	**6**	**150**

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Optional 'Honours' Specialisation

Semester	Continuous Assessment	End Semester Examination	Total Credits	Total Marks
Construction Management with BIM				
Semester 5	0	8	8	200
Semester 6	3	3	6	150
Semester 7	3	3	6	150
Total	**6**	**14**	**20**	**500**
Infrastructure Engineering and Management				
Semester 5	3	5	8	200
Semester 6	0	6	6	150
Semester 7	3	3	6	150
Total	**6**	**14**	**20**	**500**

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Annexure C
Optional 'Minor' Specialisation

Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 3													
Advanced Digital Technologies Specialisation Core Courses													
TEE7316	0701210310	IoT for Civil Engineering	PC	Advanced Digital Technologies	3	0	0	0	0	30	45	3	75
TEE7262	0701210311	AI Tools for Civil Engineering	PC	Advanced Digital Technologies	3	0	0	0	0	75	0	3	75
				Total	**6**	**0**	**0**	**0**	**0**	**105**	**45**	**6**	**150**
Semester : 4													
Advanced Digital Technologies Specialisation Core Courses													
TEE7501	0701210420	Robotics and Automation in Construction	PC	Advanced Digital Technologies	0	0	4	30	20	0	0	2	50
TEE7432	0701210421	Digital Twin for Civil Engineering	PC	Advanced Digital Technologies	2	0	0	0	0	50	0	2	50
				Total	**2**	**0**	**4**	**30**	**20**	**50**	**0**	**4**	**100**
Semester : 5													
Advanced Digital Technologies Specialisation Core Courses													
P4712	0701210534	Digital Image Processing for Civil Engineering	PC	Advanced Digital Technologies	3	0	0	0	0	30	45	3	75
				Total	**3**	**0**	**0**	**0**	**0**	**30**	**45**	**3**	**75**
Semester : 6													

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Annexure C
Optional 'Minor' Specialisation

Catalog Course Code	Course Code	Course Title	Nature	Specialisation/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Advanced Digital Technologies Specialisation Core Courses													
TH4751	0701210633	Basics of Data Analysis and Visualization Tools	PC	Advanced Digital Technologies	0	0	4	30	20	0	0	2	50
				Total	**0**	**0**	**4**	**30**	**20**	**0**	**0**	**2**	**50**
Semester : 7													
Advanced Digital Technologies Specialisation Core Courses													
T3499	0701210731	Data Analysis Using Python	PC	Advanced Digital Technologies	3	0	0	0	0	30	45	3	75
				Total	**3**	**0**	**0**	**0**	**0**	**30**	**45**	**3**	**75**

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Annexure C
Optional 'Minor' Specialisation

Semester	Continuous Assessment	End Semester Examination	Total Credits	Total Marks
Advanced Digital Technologies				
Semester 3	3	3	6	150
Semester 4	2	2	4	100
Semester 5	0	3	3	75
Semester 6	0	2	2	50
Semester 7	0	3	3	75
Total	**5**	**13**	**18**	**450**