Symbiosis Institute of Technology, Pune
Bachelor of Technology (Electronics and Telecommunication Engineering)
Programme Structure 2026-30

<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">180</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) Differently abled
(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>20</td></tr>
</table>

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5.	**ELIGIBILITY**	Passed 10+2 examination with Physics and Mathematics as compulsory subjects along with one of Chemistry/ Computer Science/ Electronics/ Information Technology/Biology/Informatics Practices/ Biotechnology/Technical Vocational subject/ Agriculture/Engineering Graphics/Business Studies /Entrepreneurship 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 Constituent 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) 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 at least 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 Any State Government Engineering Entrance Test.
7.	**MEDIUM OF INSTRUCTION**	English
8.	**PROGRAMME PATTERN**	Semester

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9.	**COURSE & SPECIALISATION**	Annexure A: Bachelor of Technology (Electronics and Telecommunication) Students may pursue optional 'Honours' specialisation in one of the specialisation areas by completing additional 20 credits in Semester 4,5, 6, 7 as specified in Annexure B or optional 'Minor' Specialisation by completing additional 18 credits in Semester - 3, 4, 5, 6 as specified in Annexure C. Annexure B: Honours specialisation area 1.Embedded Systems 2.Semiconductor Technology Annexure C: Minor specialisation area 1.Artificial Intelligence and Machine Learning 2. Cyber Security

10.	**FEE**		**Academic Fee p.a**	**Institute Deposit**	**Total**
	Indian Students (Amount in INR)		375000	20000	395000
	International Students	**NRI/ PIO/ OCI Category (Amount in US$)**	6600	275	6875
		Foreign National Category (Amount in US$)	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.			

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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) OR Bachelor of Technology (Electronics and Telecommunication) with Honours in Embedded Systems/ Semiconductor Technology OR Bachelor of Technology (Electronics and Telecommunication) with Minor in Artificial Intelligence and Machine Learning / Cyber Security 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 NonCredit Course/s	No. of Non-Credit Audit Course/s
Track 1											
1	8	8	3	0	1	0	0	0	20	0	As per the student's choice
2	8	5	3	0	2	0	0	2	20	1*	
3	3	0	15	2	0	0	0	0	20	2*	
4	0	2	7	6	2	3	0	0	20	2*	
5	0	1	8	10	0	3	0	0	22	2*	
6	0	0	8	14	0	0	0	0	22	1*	
7	0	0	7	8	1	0	6	0	22	1*	
8	0	0	0	0	0	0	14	0	14	0	
Total	**19**	**16**	**51**	**40**	**6**	**6**	**20**	**2**	**160**	**0**	
Track 2											
1	8	8	3	0	1	0	0	0	20	0	As per the student's choice
2	8	5	3	0	2	0	0	2	20	1*	
3	3	0	15	2	0	0	0	0	20	2*	

4	0	2	7	6	2	3	0	0	20	2*	
5	0	1	8	10	0	3	0	0	22	2*	
6	0	0	8	14	0	0	0	0	22	1*	
7	0	0	4	0	0	0	18	0	22	1*	
8	0	0	0	0	0	0	14	0	14	0	
Total	**19**	**16**	**48**	**32**	**5**	**6**	**32**	**2**	**160**	**0**	
Optional Additional Courses (Honours)											
4	0	0	4	0	0	0	0	0	4	0	As per the student's choice
5	0	0	3	0	0	0	0	0	3	0	
6	0	0	7	0	0	0	0	0	7	0	
7	0	0	0	0	0	0	6	0	6	0	
Total	**0**	**0**	**14**	**0**	**0**	**0**	**6**	**0**	**20**	**0**	
Optional Additional Courses (Minor)											
3	0	0	4	0	0	0	0	0	4	0	As per the student's choice
4	0	0	4	0	0	0	0	0	4	0	
5	0	0	4	0	0	0	0	0	4	0	
6	0	0	6	0	0	0	0	0	6	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.

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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													
TEE7238	701230101	Calculus and Linear Algebra	BS		3	1	0	0	0	40	60	4	100
TEE7241	701230102	Engineering Chemistry for Semiconductor Fabrication	BS		3	0	2	15	10	30	45	4	100
TEE7314	701230103	Fundamentals of Electrical and Electronics Engineering	ES		2	1	2	15	10	30	45	4	100
TEE7299	701230104	Programming in C	ES		0	0	4	50	0	0	0	2	50
TM2278	701230105	Introduction to Environment and Sustainability	ES		0	0	2	25	0	0	0	1	25
TEE7364	701230106	Tinker and IDEA Lab	ES		0	0	2	25	0	0	0	1	25
TEE7308	701230107	Computational Techniques for Electronics Engineering	PC		2	0	2	15	10	50	0	3	75
T6873	701230108	Creative Thinking	HSMC		1	0	0	0	0	25	0	1	25
				Total	**11**	**2**	**14**	**145**	**30**	**175**	**150**	**20**	**500**

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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		
Semester : 2													
Generic Core Courses													
TEE7234	701230201	Applied Mathematics and Techniques	BS		3	1	0	0	0	40	60	4	100
TEE7252	701230202	Physics of Electronics and Semiconductors	BS		3	0	2	15	10	30	45	4	100
TEE7293	701230203	Exploratory Data Analysis using Python	ES		1	0	4	50	0	25	0	3	75
TEE7324	701230204	Engineering Graphics	ES		0	0	4	30	20	0	0	2	50
TEE7309	701230205	Digital Circuits and Logic Design	PC		2	0	2	15	10	20	30	3	75
THM6150	701230206	Technical and Professional Communication Skills	HSMC		0	0	2	25	0	0	0	1	25
T6732	701230207	Critical Thinking	HSMC		1	0	0	0	0	25	0	1	25
THM6144	701230208	Indian Knowledge Systems	IKS		2	0	0	0	0	50	0	2	50
TEE7265	701230209	Career Essentials- I *			0	0	0	0	0	0	0	Mandatory Non-Credit Course	0

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				Total	**12**	**1**	**14**	**135**	**40**	**190**	**135**	**20**	**500**
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													
Generic Core Courses													
TEE7253	701230301	Transforms and Vector Calculus	BS		2	1	0	0	0	30	45	3	75
P4281	701230302	Microcontrollers and Applications	PC		3	0	2	15	10	75	0	4	100
P4270	701230303	Electronic Devices and Circuits	PC		3	0	2	15	10	30	45	4	100
P4276	701230304	Analog and Digital Communication	PC		3	0	2	15	10	30	45	4	100
P5240	701230305	Network Analysis and Synthesis	PC		2	1	0	0	0	75	0	3	75
P4781	701230307	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	**13**	**2**	**6**	**45**	**30**	**240**	**135**	**18**	**450**
Generic Elective Courses													

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	701230308	Foundation for Electronic Manufacturing Systems	PC		1	0	2	15	10	25	0	2	50
	701230309	Foundation for Firmware Development	PC		1	0	2	15	10	25	0	2	50
				Total Required Credits	**15**	**10**	**25**	**0**	**2**	**50**			
Semester : 4													
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**		
Generic Core Courses													
P4271	701230401	Data Structures and Algorithms	ES		0	0	4	50	0	0	0	2	50
P4269	701230402	Analog Circuit Design	PC		3	0	2	15	10	30	45	4	100
P4268	701230403	Computer Networks	PC		2	0	2	15	10	20	30	3	75
P4618	701230405	Service Learning	HSMC		0	0	4	50	0	0	0	2	50
P4782	701230408	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	**5**	**0**	**12**	**130**	**20**	**50**	**75**	**11**	**275**
Generic Elective Courses													

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	701230409	PCB Design	PC		3	0	6	45	30	30	45	6	150
	701230410	Embedded Hardware and Software	PC		3	0	6	45	30	30	45	6	150
Total Required Credits								**45**	**30**	**30**	**45**	**6**	**150**
Multidisciplinary Open Elective (Choose any one course)													
P5208	701230411	Quantum Computing for Engineers	MOPE	Applied Science	2	1	0	0	0	30	45	3	**75**
P5209	701230412	Mathematics for Data Science	MOPE	Applied Science	2	1	0	0	0	30	45	3	**75**
P4627	701230413	Smart Cities Planning and Management	MOPE	Civil Engineering	2	1	0	0	0	30	45	3	**75**
P4633	701230414	Intelligent Waste Management Techniques	MOPE	Civil Engineering	2	1	0	0	0	30	45	3	**75**
P4811	701230415	Web Technologies	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	**75**
P4812	701230416	Data Science	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	**75**
TE7351	701230417	3D Printing and Prototyping	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	**75**
P5275	701230418	Battery Management Systems	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	**75**
P4787	701230419	Fundamentals of Machine Learning	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	**75**

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P4788	701230420	AI System Development	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	**75**
P5214	701230421	Fundamentals of Robotics and Automation	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	**75**
P5215	701230422	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**
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													
Generic Core Courses													
P5230	701230501	Design Thinking	ES		1	0	0	0	0	25	0	1	25
P4279	701230502	Digital Signal Processing	PC		2	1	2	15	10	30	45	4	100
P4280	701230503	VLSI Design	PC		3	0	2	15	10	30	45	4	100
P4784	701230506	Career Essentials - IV *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0

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SMC001	701230507	Vasudhaiva Kutumbakam *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
				Total	**6**	**1**	**4**	**30**	**20**	**85**	**90**	**9**	**225**
Generic Elective Courses													
	701230508	SMT Assembly Line	PC		3	0	6	45	30	30	45	6	150
	701230509	Firmware Development, Testing & Validation	PC		3	0	6	45	30	30	45	6	150
				Total Required Credits				**45**	**30**	**30**	**45**	**6**	**150**
Program Elective (PE)													
P4285	701230510	Antenna and Wave Propagation	PE		3	0	2	15	10	30	45	4	100
P4286	701230511	Digital Image Processing	PE		3	0	2	15	10	30	45	4	100
P4287	701230512	Digital Design and Verification	PE		3	0	2	15	10	30	45	4	100
P4288	701230513	Operating Systems Fundamentals	PE		3	0	2	15	10	30	45	4	100
P4289	701230514	Robotics and Automation	PE		3	0	2	15	10	30	45	4	100
P4290	701230515	Power Electronics	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)													
P5210	701230516	Financial Mathematics	MOPE	Applied Science	2	1	0	0	0	30	45	3	**75**

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P5211	701230517	Advanced Materials	MOPE	Applied Science	2	1	0	0	0	30	45	3	**75**
P4656	701230518	Sustainability Engineering- Design and Innovation	MOPE	Civil Engineering	2	1	0	0	0	30	45	3	**75**
P4658	701230519	Occupational Health and Safety Management	MOPE	Civil Engineering	2	1	0	0	0	30	45	3	**75**
P4840	701230520	Introduction to Cloud Computing	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	**75**
P4844	701230521	Agile Methodologies	MOPE	Computer Science and Engineering	2	1	0	0	0	30	45	3	**75**
P5277	701230522	Electric and Hybrid Vehicles	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	**75**
T7650	701230523	Six Sigma	MOPE	Mechanical Engineering	2	1	0	0	0	30	45	3	**75**
P4789	701230524	Optimization for ML Systems	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	**75**
P4790	701230525	Deep Learning Essentials	MOPE	Artificial Intelligence and Machine Learning	2	1	0	0	0	30	45	3	**75**
P5216	701230526	Industrial Robotics	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	

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P5217	701230527	PLC and SCADA	MOPE	Robotics and Automation	2	1	0	0	0	30	45	3	
				Total Required Credits				**0**	**0**	**30**	**45**	**3**	**75**
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 : 6													
Generic Core Courses													
P4328	701230601	Embedded System Design	PC		3	0	2	15	10	30	45	4	100
P4327	701230602	Wireless Communication	PC		3	0	2	25	0	75	0	4	100
P4785	701230604	Career Essentials - V *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
				Total	**6**	**0**	**4**	**40**	**10**	**105**	**45**	**8**	**200**
Generic Elective Courses													
	701230605	Electronic Product Compliance	PC		3	0	6	45	30	30	45	6	150
	701230606	Firmware Applications	PC		3	0	6	45	30	30	45	6	150
				Total Required Credits				**45**	**30**	**30**	**45**	**6**	**150**
Program Elective (PE)-1													
P4329	701230607	Microwaves, Radar and Electronic Navigation	PE		3	0	2	15	10	30	45	4	100

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P4330	701230608	Artificial Intelligence & Machine Learning	PE		3	0	2	15	10	30	45	4	100
P4331	701230609	CMOS VLSI Design	PE		3	0	2	15	10	30	45	4	100
P4332	701230610	IoT and Applications	PE		3	0	2	15	10	30	45	4	100
P4333	701230611	Industrial Automation with PLC and SCADA	PE		3	0	2	15	10	30	45	4	100
P4334	701230612	Biomedical Electronics	PE		3	0	2	15	10	30	45	4	100
Total Required Credits								**15**	**10**	**30**	**45**	**4**	**100**
Program Elective (PE)-2													
P4335	701230613	Information Theory and Coding	PE		3	0	2	15	10	30	45	4	100
P4336	701230614	High-Performance Computing	PE		3	0	2	15	10	30	45	4	100
P4337	701230615	Mixed Signal Design	PE		3	0	2	15	10	30	45	4	100
P4338	701230616	Real Time Systems	PE		3	0	2	15	10	30	45	4	100
P4339	701230617	Building Automation	PE		3	0	2	15	10	30	45	4	100
P4340	701230618	Quantum Electronics	PE		3	0	2	15	10	30	45	4	100
Total Required Credits								**15**	**10**	**30**	**45**	**4**	**100**
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 : 7													
Generic Core Courses													
T7804	701230701	Project	PIS		0	0	8	60	40	0	0	4	100

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SMC003	701230702	Health and Wellness *	MC		0	0	0	0	0	0	0	Mandatory Non-Credit Course	0
				Total	**0**	**0**	**8**	**60**	**40**	**0**	**0**	**4**	**100**
Generic Elective Courses													
	701230703	Project Based Learning-II	PIS		0	0	6	50	0	0	0	2	50
				Total Required Credits				**50**	**0**	**0**	**0**	**2**	**50**
Generic Core Courses - Track 1													
P4404	701230705	Feedback Control Systems	PC		2	0	2	15	10	20	30	3	75
F0004	701230706	Flexi-Credit Course	PC		3	0	2	25	0	75	0	4	100
P4406	701230707	Organizational Behaviour	HSMC		1	0	0	0	0	25	0	1	25
				Total Required Credits				**40**	**10**	**120**	**30**	**8**	**200**
Programme Elective-I (Choose any one course)													
P4387	701230708	5G Technology	PE		3	0	2	15	10	30	45	4	100
P5248	701230709	Automatic Train Protection System - KAVACH	PE		3	0	2	15	10	30	45	4	100
P4389	701230710	Low Power VLSI Design	PE		3	0	2	15	10	30	45	4	100
P4391	701230711	Embedded Artificial Intelligence	PE		3	0	2	15	10	30	45	4	100
P4392	701230712	Autonomous Systems	PE		3	0	2	15	10	30	45	4	100
P4393	701230713	Electric Vehicles	PE		3	0	2	15	10	30	45	4	100
				Total Required Credits				**15**	**10**	**30**	**45**	**4**	**100**
Programme Elective-II (Choose any one course)													

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P4395	701230714	Software Defined Radio	PE		3	0	2	15	10	30	45	4	100
P4397	701230715	Computer Vision	PE		3	0	2	15	10	30	45	4	100
P4398	701230716	FPGA Programming	PE		3	0	2	15	10	30	45	4	100
P4399	701230717	Cyber Physical System	PE		3	0	2	15	10	30	45	4	100
P4765	701230718	Advanced Control Systems Engineering	PE		3	0	2	15	10	30	45	4	100
P4401	701230719	Wireless Sensor Network	PE		3	0	2	15	10	30	45	4	100
Total Required Credits								**15**	**10**	**30**	**45**	**4**	**100**
Generic Core Courses - Track 2													
F0004	701230720	Flexi-Credit Course	PC		4	0	0	0	0	100	0	4	100
Total Required Credits								**0**	**0**	**100**	**0**	**4**	**100**
Generic Elective courses Group (Choose any one Course)													
T7912	701230721	Startup Internship	PIS		0	0	24	180	120	0	0	12	300
T7912	701230722	Research Internship	PIS		0	0	24	180	120	0	0	12	300
T7912	701230723	Industry Internship	PIS		0	0	24	180	120	0	0	12	300
Total Required Credits								**180**	**120**	**0**	**0**	**12**	**300**
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 : 8													
Generic Core Courses													
T7912	701230801	Internship	PIS		0	0	24	180	120	0	0	12	300
T7802	701230802	Seminar	PIS		0	0	4	30	20	0	0	2	50

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Total	**0**	**0**	**28**	**210**	**140**	**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	8	12	20	500
Semester 2	7	13	20	500
Semester 3	8	12	20	500
Semester 4	7	13	20	500
Semester 5	3	19	22	550
Semester 6	7	15	22	550
Semester 7	7	15	22	550
Semester 8	0	14	14	350
Total	**47**	**113**	**160**	**4000**
		Track 2		
Semester 1	8	12	20	500
Semester 2	7	13	20	500
Semester 3	8	12	20	500
Semester 4	7	13	20	500
Semester 5	3	19	22	550
Semester 6	7	15	22	550
Semester 7	6	16	22	550
Semester 8	0	14	14	350
Total	**46**	**114**	**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 : 4													
Embedded Systems													
Specialisation Core Courses													
P4766	701230423	Microcontrollers and Embedded C Programming	PC		3	0	2	15	10	30	45	4	100
			Total		**3**	**0**	**2**	**15**	**10**	**30**	**45**	**4**	**100**
Semester : 4													
Semiconductor Technology													
Specialisation Core Courses													
P4767	701230424	Introduction to Microfabrication	PC		3	0	2	15	10	30	45	4	100
			Total		**3**	**0**	**2**	**15**	**10**	**30**	**45**	**4**	**100**
Semester : 5													
Embedded Systems													

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Specialisation Core Courses													
P4768	701230528	Automotive Embedded Systems	PC		3	0	0	0	0	30	45	3	75
			Total		**3**	**0**	**0**	**0**	**0**	**30**	**45**	**3**	**75**
Semester : 5													
Semiconductor Technology													
Specialisation Core Courses													
TEE7058	701230529	Semiconductor Equipment Design and Technology	PC		3	0	0	0	0	30	45	3	75
			Total		**3**	**0**	**0**	**0**	**0**	**30**	**45**	**3**	**75**
Semester : 6													
Embedded Systems													
Specialisation Core Courses													
P4769	701230619	Model Based Design	PC		3	0	2	15	10	30	45	4	100
TEE7048	701230620	Embedded Cyber Security	PC		3	0	0	0	0	30	45	3	75
			Total		**6**	**0**	**2**	**15**	**10**	**60**	**90**	**7**	**175**
Semester : 6													
Semiconductor Technology													
Specialisation Core Courses													
P4770	701230621	Application-Specific Integrated Circuit Design and Fabrication	PC		3	0	2	15	10	30	45	4	100
TEE7049	701230622	Semiconductor Materials Synthesis and Characterization	PC		3	0	0	0	0	30	45	3	75
			Total		**6**	**0**	**2**	**15**	**10**	**60**	**90**	**7**	**175**
Semester : 7													
Embedded Systems													
Specialisation Core Courses													

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T7804	701230724	Honours Project	PIS		0	0	8	60	40	0	0	4	100
T7802	701230725	Honours Seminar	PIS		0	0	4	30	20	0	0	2	50
			Total		**0**	**0**	**12**	**90**	**60**	**0**	**0**	**6**	**150**
Semester : 7													
Semiconductor Technology													
Specialisation Core Courses													
T7804	701230724	Honours Project	PIS		0	0	8	60	40	0	0	4	100
T7802	701230725	Honours Seminar	PIS		0	0	4	30	20	0	0	2	50
			Total		**0**	**0**	**12**	**90**	**60**	**0**	**0**	**6**	**150**

Annexure B Optional 'Honours' Specialisation

Semester	Continuous Assessment	End Semester Examination	Total Credits	Total Marks
Embedded Systems				
Semester 4	0	4	4	100
Semester 5	0	3	3	75
Semester 6	0	7	7	175
Semester 7	0	6	6	150
Total	**0**	**20**	**20**	**500**
Semiconductor Technology				
Semester 4	0	4	4	100
Semester 5	0	3	3	75
Semester 6	0	7	7	175
Semester 7	0	6	6	150
Total	**0**	**20**	**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													
Artificial Intelligence and Machine Learning													
Specialisation Core Courses													
P4772	701230310	Elements of AI	PC		4	0	0	0	0	40	60	4	100
					4	**0**	**0**	**0**	**0**	**40**	**60**	**4**	**100**
Semester : 3													
Cyber Security													
Specialisation Core Courses													
P4773	701230311	Cybersecurity Foundation	PC		4	0	0	0	0	40	60	4	100
					4	**0**	**0**	**0**	**0**	**40**	**60**	**4**	**100**
Semester : 4													
Artificial Intelligence and Machine Learning													
Specialisation Core Courses													
P4774	701230425	Machine Learning Fundamentals	PC		4	0	0	0	0	40	60	4	100
					4	**0**	**0**	**0**	**0**	**40**	**60**	**4**	**100**
Semester : 4													

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Cyber Security												
Specialisation Core Courses												
TE7017	701230426	Network Security	PC		4	0	0	0	0	40	60	4	100
					4	**0**	**0**	**0**	**0**	**40**	**60**	**4**	**100**
Semester : 5													
Artificial Intelligence and Machine Learning													
Specialisation Core Courses													
TE7136	701230530	Deep Learning	PC		4	0	0	0	0	40	60	4	100
					4	**0**	**0**	**0**	**0**	**40**	**60**	**4**	**100**
Semester : 5													
Cyber Security													
Specialisation Core Courses													
P4775	701230531	Mobile Security and Forensics	PC		4	0	0	0	0	40	60	4	100
					4	**0**	**0**	**0**	**0**	**40**	**60**	**4**	**100**
Semester : 6													
Artificial Intelligence and Machine Learning													
Specialisation Core Courses													
F0003	701230623	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
P4534	701230624	Reinforcement Learning	PC		2	0	2	15	10	20	30	3	75
					5	**0**	**2**	**15**	**10**	**95**	**30**	**6**	**150**
Semester : 6													
Cyber Security													
Specialisation Core Courses													
F0003	701230625	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
P4853	701230626	Cyber Security and Artificial Intelligence	PC		2	0	2	15	10	20	30	3	75
					5	**0**	**2**	**15**	**10**	**95**	**30**	**6**	**150**

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Annexure C

Optional 'Minor' Specialisation

Semester	Continuous Assessment	End Semester Examination		Total Credits	Total Marks
	Artificial Intelligence and Machine Learning				
Semester 3	0	4		4	100
Semester 4	0	4		4	100
Semester 5	0	4		4	100
Semester 6	3	3		6	150
Total	**3**	**15**		**18**	**450**
	Cyber Security				
Semester 3	0	4		4	100
Semester 4	0	4		4	100
Semester 5	0	4		4	100
Semester 6	3	3		6	150
Total	**3**	**15**		**18**	**450**