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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 (IN MONTHS)**	48 (Full Time)				
3.	**INTAKE**	240				
4.	**RESERVATION**	**I.Within the sanctioned intake**	**a) SC (In Percentage)**	**b) ST (In Percentage)**	**c) Differently abled (In Percentage)**	**d) Domicile of Nagpur (In Percentage)**
			15	7.5	3	25 (Includes i. Scheduled Caste (percentage) - 15 ii. Scheduled Tribes (percentage) - 7.5 iii. Differently Abled (percentage) - 3)
		II.Over and above the sanctioned intake	**a) Kashmiri Migrants (In Seats)**		**b) International Students (In Percentage)**	
			2		15	
5.	**ELIGIBILITY**	Passed 10+2 examination with Physics and Mathematics as compulsory subjects along with one of Chemistry/ Biotechnology/ Biology/				

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		Technical Vocational subjects. Obtained at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) 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 or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) in appropriate branch of Engineering / Technology. b) Passed B.Sc. Degree from a recognized University as defined by UGC, with at least 45% marks or equivalent grade (40% marks or equivalent grade for Scheduled Caste /Scheduled Tribes) 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.
6.	**SELECTION PROCEDURE**	Merit list by valid score of Joint Entrance Examination (JEE - Main) or Any State Government Engineering Entrance Examination.
7.	**MEDIUM OF INSTRUCTION**	English
8.	**PROGRAMME PATTERN**	Semester
9.	**COURSE & SPECIALIZATION**	Annexure A: Bachelor of Technology (Computer Science and Engineering) Students may pursue optional 'Honours' specialization in one of the specialization areas by completing additional 20 credits in Semester: 5, 6 and 7 as specified in Annexure B for Honours. Annexure B: Optional 'Honours' specialization area 1. Artificial Intelligence and Machine learning 2. Computing

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		3. Data Science 4. Game Design & Development 5. Security and Privacy 6. Internet of Things			
10.	**FEE**		**Academic Fee p.a**	**Institute Deposit**	**Total**
	Indian Students	**Other than Nagpur Domicile**	260000	20000	280000
		Nagpur Domicile	221000	20000	241000
	International Students (USD equivalent to INR)		390000	20000	410000
Note: For additional optional specialization 'Honours' or 'Minor', an additional fees of Rs. 25000/- will be charged in the third year.					
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/ DIPLOMA/ CERTIFICATE**	Bachelor of Technology (Computer Science Engineering) OR Bachelor of Technology (Computer Science Engineering) with Honours in Artificial Intelligence and Machine learning / Computing / Data Science / Game Design & Development / Security and Privacy /Internet of Things, 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			

14. CLASSIFICATION OF CREDITS

Semester	Generic Core	Generic Elective	Specialization Core	Specialization Elective	Open Elective	Audit	Total
Group A							
1	18	0	0	0	0	1*	18
2	21	0	0	0	0	1*	21
3	23	1	0	0	0	0	24
4	17	2	0	0	0	1*	19
5	22	0	0	0	3	0	25
6	14	8	0	0	3	0	25
7	11	13	0	0	0	0	24
8	14	0	0	0	0	0	14
Total	**140**	**24**	**0**	**0**	**6**	**0**	**170**
Group B							
1	19	0	0	0	0	1*	19
2	20	0	0	0	0	1*	20
3	23	1	0	0	0	0	24
4	17	2	0	0	0	1*	19
5	22	0	0	0	3	0	25
6	14	8	0	0	3	0	25
7	11	13	0	0	0	0	24
8	14	0	0	0	0	0	14
Total	**140**	**24**	**0**	**0**	**6**	**0**	**170**
Optional Additional Courses (Honours)							
Total	**0**	**0**	**20**	**0**	**0**	**0**	**20**

* Satisfactory completion of the non letter grade courses 'Integrated Disaster Management', 'Fitness for Life' is mandatory for the award of degree.

Note: For additional specializations (optional) as applicable, fees of Rs.25000/- will be charged, additionally in the third year

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 1													
Group - A Generic Core Courses													
TE7168	0705210101	Engineering Mathematics -I	BS		3	1	0	0	0	40	60	4	100
T7391	0705210102	Physics	BS		3	0	0	0	0	30	45	3	75
T7392	0705210103	Physics lab	BS		0	0	2	10	15	0	0	1	25
T7383	0705210104	Communication Skills	HS		2	0	0	0	0	20	30	2	50
T7384	0705210105	Communication skills lab	HS		0	0	2	10	15	0	0	1	25
TE7288	0705210106	Programming in C	PC		3	0	0	0	0	30	45	3	75
TE7289	0705210107	Programming in C Lab	PC		0	0	2	10	15	0	0	1	25
TE7188	0705210108	Environmental Science	ES		2	0	0	0	0	20	30	2	50
T6773	0705210109	Creative Thinking	HS		1	0	0	0	0	25	0	1	25
				Total Required Credits				**30**	**45**	**165**	**210**	**18**	**450**
Group - B Generic Core Courses													
TE7168	0705210101	Engineering Mathematics -I	BS		3	1	0	0	0	40	60	4	100
T7381	0705210110	Chemistry	BS		3	0	0	0	0	30	45	3	75
T7382	0705210111	Chemistry Lab	BS		0	0	2	10	15	0	0	1	25
T7540	0705210112	Basic Electrical and Electronics Engineering	ES		3	0	0	0	0	30	45	3	75
T7593	0705210113	Basic Electrical and Electronics Engineering Lab	ES		0	0	2	10	15	0	0	1	25

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								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TE7286	0705210114	Programming and Problem Solving	ES		2	0	0	0	0	20	30	2	50
TE7287	0705210115	Programming and Problem Solving Lab	ES		0	0	2	10	15	0	0	1	25
T6732	0705210116	Critical Thinking	HS		1	0	0	0	0	25	0	1	25
T7925	0705210117	Engineering Graphics Lab	ES		0	0	4	20	30	0	0	2	50
TE7396	0705210118	Software Tools	ES		0	0	2	25	0	0	0	1	25
Total Required Credits								**75**	**75**	**145**	**180**	**19**	**475**
Semester : 2													
Group-A Generic Core Courses													
TE7169	0705210201	Engineering Mathematics -II	BS		3	1	0	0	0	40	60	4	100
T7381	0705210202	Chemistry	BS		3	0	0	0	0	30	45	3	75
T7382	0705210203	Chemistry Lab	BS		0	0	2	10	15	0	0	1	25
T7540	0705210204	Basic Electrical and Electronics Engineering	ES		3	0	0	0	0	30	45	3	75
T7593	0705210205	Basic Electrical and Electronics Engineering Lab	ES		0	0	2	10	15	0	0	1	25
TE7286	0705210206	Programming and Problem Solving	ES		2	0	0	0	0	20	30	2	50
TE7287	0705210207	Programming and Problem Solving Lab	ES		0	0	2	10	15	0	0	1	25
T7925	0705210208	Engineering Graphics Lab	ES		0	0	4	20	30	0	0	2	50
T6732	0705210209	Critical Thinking	HS		1	0	0	0	0	25	0	1	25
TE7396	0705210210	Software Tools	ES		0	0	2	25	0	0	0	1	25

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TE7300	0705210211	Tinker Lab	ES		0	0	4	50	0	0	0	2	50
TH4095	0705210212	Fitness for Life *	0		0	0	0	0	0	0	0	Non Letter Grade	0
Total Required Credits								**125**	**75**	**145**	**180**	**21**	**525**
Group- B Generic Core Courses													
TE7169	0705210201	Engineering Mathematics -II	BS		3	1	0	0	0	40	60	4	100
TE7300	0705210211	Tinker Lab	ES		0	0	4	50	0	0	0	2	50
T7391	0705210213	Physics	BS		3	0	0	0	0	30	45	3	75
T7392	0705210214	Physics lab	BS		0	0	2	10	15	0	0	1	25
TE7288	0705210215	Programming in C	ES		3	0	0	0	0	30	45	3	75
TE7289	0705210216	Programming in C Lab	PC		0	0	2	10	15	0	0	1	25
T7383	0705210217	Communication Skills	HS		2	0	0	0	0	20	30	2	50
T7384	0705210218	Communication skills lab	HS		0	0	2	10	15	0	0	1	25
T6773	0705210219	Creative Thinking	HS		1	0	0	0	0	25	0	1	25
TE7188	0705210220	Environmental Science	ES		2	0	0	0	0	20	30	2	50
TH4095	0705210212	Fitness for Life *	0		0	0	0	0	0	0	0	Non Letter Grade	0
Total Required Credits								**80**	**45**	**165**	**210**	**20**	**500**

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ 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													
T7995	0705210301	Discrete Mathematics and Probability Theory	BS		3	1	0	0	0	40	60	4	100
T7996	0705210302	Computer Organization	PC		3	0	0	0	0	30	45	3	75
T7906	0705210303	Fundamentals of Data Structures	PC		3	0	0	0	0	30	45	3	75
TE7257	0705210304	Fundamentals of Data Structures Lab	PC		0	0	2	10	15	0	0	1	25
T7512	0705210305	Programming Paradigms	PC		3	0	0	0	0	30	45	3	75
T7513	0705210306	Programming Paradigms Lab	PC		0	0	2	10	15	0	0	1	25
T7997	0705210307	Digital Electronics and Logic Design	ES		3	0	0	0	0	30	45	3	75
T7555	0705210308	Digital Electronics and Logic Design Lab	ES		0	0	2	10	15	0	0	1	25
T2646	0705210309	Entrepreneurship Venture	HS		1	0	0	0	0	25	0	1	25
F0003	0705210310	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
				Total	**19**	**1**	**6**	**30**	**45**	**260**	**240**	**23**	**575**
Generic Elective Courses Group													
T6761	0705210311	Foundation of Ethics	GE		1	0	0	0	0	25	0	1	25
T6760	0705210312	Introduction to Indian Philosophy	GE		1	0	0	0	0	25	0	1	25
				Total Required Credits				**0**	**0**	**25**	**0**	**1**	**25**
Semester : 4													
Generic Core Courses													

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TE7170	0705210401	Engineering Mathematics-III	BS		2	1	0	0	0	30	45	3	75
F0004	0705210402	Flexi-Credit Course	PC		4	0	0	0	0	100	0	4	100
T7488	0705210403	Data Structures	PC		3	0	0	0	0	30	45	3	75
T7489	0705210404	Data Structures Lab	PC		0	0	2	10	15	0	0	1	25
T7510	0705210405	Operating Systems	PC		3	0	0	0	0	30	45	3	75
T7511	0705210406	Operating Systems Lab	PC		0	0	2	10	15	0	0	1	25
TE7290	0705210407	Project Based Learning -I	PIS		0	0	4	50	0	0	0	2	50
T4005	0705210408	Integrated Disaster Management *	0		0	0	0	0	0	0	0	Non Letter Grade	0
				Total	**12**	**1**	**8**	**70**	**30**	**190**	**135**	**17**	**425**
Generic Elective Courses Group													
T6014	0705210409	Basic French I	GE		2	0	0	0	0	50	0	2	50
T6012	0705210410	Basic German I	GE		2	0	0	0	0	50	0	2	50
T6016	0705210411	Basic Spanish I	GE		2	0	0	0	0	50	0	2	50
				Total Required Credits				**0**	**0**	**50**	**0**	**2**	**50**
Semester : 5													
Generic Core Courses													
F0004	0705210501	Flexi-Credit Course	PC		4	0	0	0	0	100	0	4	100

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
T8000	0705210502	Service Learning	HS		0	0	8	100	0	0	0	4	100
T7908	0705210503	Computer Networks	PC		3	0	0	0	0	30	45	3	75
T7482	0705210504	Computer Networks Lab	PC		0	0	2	10	15	0	0	1	25
T7907	0705210505	Database Management Systems	PC		3	0	0	0	0	30	45	3	75
T7487	0705210506	Data Base Management Systems Lab	PC		0	0	4	20	30	0	0	2	50
TE7299	0705210507	Theory of Computation	PC		3	0	0	0	0	30	45	3	75
T6774	0705210508	Principles of Economics	HS		2	0	0	0	0	50	0	2	50
Total					**15**	**0**	**14**	**130**	**45**	**240**	**135**	**22**	**550**
Open Elective Courses Group													
T7393	0705210509	Computer Based Statistical Packages	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
T7499	0705210510	Java	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7263	0705210511	Introduction to AI and Machine Learning	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7265	0705210512	Introduction to Data Science	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Semester : 6													
Generic Core Courses													

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
TE7008	0705210601	Distributed Systems and Resource Management	PC		3	0	0	0	0	30	45	3	75
F0003	0705210602	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
T6749	0705210603	Design Thinking	HS		2	0	0	0	0	50	0	2	50
T7674	0705210604	Cyber Security	PC		2	0	0	0	0	50	0	2	50
TE7291	0705210605	Project Based Learning-II	PIS		0	0	4	50	0	0	0	2	50
T7802	0705210606	Capstone Course	PC		2	0	0	0	0	50	0	2	50
Total					**12**	**0**	**4**	**50**	**0**	**255**	**45**	**14**	**350**
Generic Elective Courses Group- I													
TE7255	0705210607	Data Warehousing and Mining	PE		3	0	0	0	0	30	45	3	75
TE7101	0705210608	Internet of Things	PE		3	0	0	0	0	30	45	3	75
TE7328	0705210609	Image Processing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Generic Elective Courses Group- II													
TE7013	0705210610	Data Warehousing and Mining Lab	PE		0	0	2	10	15	0	0	1	25
T7528	0705210611	Internet of Things Lab	PE		0	0	2	10	15	0	0	1	25
TE7329	0705210612	Image Processing Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								**10**	**15**	**0**	**0**	**1**	**25**
Generic Elective Courses Group- III													

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
T7473	0705210613	Artificial Intelligence	PE		3	0	0	0	0	30	45	3	75
TE7259	0705210614	Human Computer Interface	PE		3	0	0	0	0	30	45	3	75
TE7243	0705210615	Advanced Algorithms	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Generic Elective Courses Group- IV													
TE7014	0705210616	Artificial Intelligence Lab	PE		0	0	2	10	15	0	0	1	25
TE7260	0705210617	Human Computer Interface Lab	PE		0	0	2	10	15	0	0	1	25
TE7244	0705210618	Advanced Algorithms Lab	PE		0	0	2	0	0	10	15	1	25
Total Required Credits								**10**	**15**	**0**	**0**	**1**	**25**
Open Elective Courses Group													
T7474	0705210619	Basics of Database	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
T7529	0705210620	Machine Learning	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
T7509	0705210621	Open Source Technologies	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
TE7264	0705210622	Introduction to BIGDATA	OE	Computer Science and Engineering	3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Semester : 7													

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ 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													
T7804	0705210701	Project	PIS		0	0	8	40	60	0	0	4	100
T7477	0705210702	Compiler Construction	PC		3	0	0	0	0	30	45	3	75
T7478	0705210703	Compiler Construction Lab	PC		0	0	2	10	15	0	0	1	25
F0003	0705210704	Flexi-Credit Course	PC		3	0	0	0	0	75	0	3	75
				Total	**6**	**0**	**10**	**50**	**75**	**105**	**45**	**11**	**275**
Generic Elective Courses Group- I													
T2585	0705210705	Organizational Behaviour	GE		2	0	0	0	0	50	0	2	50
TE7438	0705210706	History of Science and Technology	GE		2	0	0	0	0	50	0	2	50
				Total Required Credits				**0**	**0**	**50**	**0**	**2**	**50**
Generic Elective Courses Group- II													
TE7253	0705210707	Data Science	PE		3	0	0	0	0	30	45	3	75
TE7282	0705210708	Optimization Techniques and Algorithms	PE		3	0	0	0	0	30	45	3	75
TE7097	0705210709	Neural Network	PE		3	0	0	0	0	30	45	3	75
				Total Required Credits				**0**	**0**	**30**	**45**	**3**	**75**
Generic Elective Courses Group- III													
TE7254	0705210710	Data Science Lab	PE		0	0	2	10	15	0	0	1	25
TE7283	0705210711	Optimization Techniques and Algorithms Lab	PE		0	0	2	10	15	0	0	1	25
TE7112	0705210712	Neural Networks Lab	PE		0	0	2	10	15	0	0	1	25

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Total Required Credits								**10**	**15**	**0**	**0**	**1**	**25**
Generic Elective Courses Group- IV													
T7529	0705210713	Machine Learning	PE		3	0	0	0	0	30	45	3	75
T7138	0705210714	Network Security	PE		3	0	0	0	0	30	45	3	75
TE7103	0705210715	Natural Language Processing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Generic Elective Courses Group- V													
TE7105	0705210716	Machine Learning Lab	PE		0	0	2	10	15	0	0	1	25
T7506	0705210717	Network Security Lab	PE		0	0	2	10	15	0	0	1	25
TE7106	0705210718	Natural Language Processing Lab	PE		0	0	2	10	15	0	0	1	25
Total Required Credits								**10**	**15**	**0**	**0**	**1**	**25**
Generic Elective Courses Group- VI													
TE7251	0705210719	Computer Graphics	PE		3	0	0	0	0	30	45	3	75
TE7297	0705210720	Software Testing Tools	PE		3	0	0	0	0	30	45	3	75
T7476	0705210721	Cloud Computing	PE		3	0	0	0	0	30	45	3	75
Total Required Credits								**0**	**0**	**30**	**45**	**3**	**75**
Semester : 8													
Generic Core Courses													

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Annexure A

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
T7912	0705210801	Internship	PIS		0	0	24	120	180	0	0	12	300
T7802	0705210802	Seminar	PIS		0	0	4	50	0	0	0	2	50
				Total	**0**	**0**	**28**	**170**	**180**	**0**	**0**	**14**	**350**

Abbreviations (Nature)

BS Basic Sciences
ES Engineering Sciences
HS Humanities and Social Sciences
OE Open Electives
PC Professional Core
PE Professional Elective
PIS Project, Internship, Seminar
PD Professional Development Course
MC Mandatory Course
L Lecture
T Tutorial
CA Continuous Assessment
ESE End Semester Examination

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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Semester 1	3	34	37	925
Semester 2	7	34	41	1025
Semester 3	5	19	24	600
Semester 4	8	11	19	475
Semester 5	10	15	25	625
Semester 6	11	14	25	625
Semester 7	5	19	24	600
Semester 8	2	12	14	350
Total	**51**	**158**	**209**	**5225**

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 5													
Artificial Intelligence and Machine Learning Specialization Core Courses													
TE7273	0705210513	Machine Learning: Classification	PC		3	0	0	0	0	30	45	3	75
TE7274	0705210514	Machine Learning: Regression	PC		3	0	0	0	0	30	45	3	75
				Total	**6**	**0**	**0**	**0**	**0**	**60**	**90**	**6**	**150**
Semester : 5													
Computing Specialization Core Courses													
T7476	0705210515	Cloud Computing	PC		3	0	0	0	0	30	45	3	75
TE7250	0705210516	Cloud Environment in Public Model	PC		3	0	0	0	0	30	45	3	75
				Total	**6**	**0**	**0**	**0**	**0**	**60**	**90**	**6**	**150**
Semester : 5													
Data Science Specialization Core Courses													
TE7292	0705210517	R Programming	PC		3	0	0	0	0	30	45	3	75
TE7281	0705210518	Open Source Tools for Data Science	PC		4	0	0	0	0	40	60	4	100
				Total	**7**	**0**	**0**	**0**	**0**	**70**	**105**	**7**	**175**

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Optional 'Honours' Specialization

Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 5													
Game Design & Development Specialization Core Courses													
TE7267	0705210519	Introduction to Game Development	PC		3	0	0	0	0	30	45	3	75
TE7285	0705210520	Principles of Game Design	PC		3	0	0	0	0	30	45	3	75
				Total	**6**	**0**	**0**	**0**	**0**	**60**	**90**	**6**	**150**
Semester : 5													
Internet of Things Specialization Core Courses													
TE7268	0705210521	Introduction to IOT	PC		4	0	0	0	0	40	60	4	100
TE7293	0705210522	Raspberry Pi and Python	PC		3	0	0	0	0	30	45	3	75
				Total	**7**	**0**	**0**	**0**	**0**	**70**	**105**	**7**	**175**
Semester : 5													
Security and Privacy Specialization Core Courses													
TE7301	0705210523	Usable Security	PC		3	0	0	0	0	30	45	3	75
TE7296	0705210524	Software Security	PC		3	0	0	0	0	30	45	3	75
				Total	**6**	**0**	**0**	**0**	**0**	**60**	**90**	**6**	**150**

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 6													
Artificial Intelligence and Machine Learning Specialization Core Courses													
TE7266	0705210623	Introduction to Deep Learning	PC		4	0	0	0	0	40	60	4	100
TE7271	0705210624	Machine Learning Clustering and Retrieval	PC		3	0	0	0	0	30	45	3	75
				Total	**7**	**0**	**0**	**0**	**0**	**70**	**105**	**7**	**175**
Semester : 6													
Computing Specialization Core Courses													
TE7246	0705210625	Block Chain	PC		4	0	0	0	0	40	60	4	100
TE7249	0705210626	Cloud Computing Platforms	PC		3	0	0	0	0	30	45	3	75
				Total	**7**	**0**	**0**	**0**	**0**	**70**	**105**	**7**	**175**
Semester : 6													
Data Science Specialization Core Courses													
T2228	0705210627	Business Analytics	PC		3	0	0	0	0	30	45	3	75
TE7284	0705210628	Power BI	PC		3	0	0	0	0	30	45	3	75
				Total	**6**	**0**	**0**	**0**	**0**	**60**	**90**	**6**	**150**

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 6													
Game Design & Development Specialization Core Courses													
TE7275	0705210629	Modern Platforms in Game Development	PC		4	0	0	0	0	40	60	4	100
TE7256	0705210630	Enterpreneurship in Game Development	PC		3	0	0	0	0	30	45	3	75
		Total			**7**	**0**	**0**	**0**	**0**	**70**	**105**	**7**	**175**
Semester : 6													
Internet of Things Specialization Core Courses													
TE7269	0705210631	IOT Security and Privacy	PC		3	0	0	0	0	30	45	3	75
TE7295	0705210632	Software Defined Networking	PC		3	0	0	0	0	30	45	3	75
		Total			**6**	**0**	**0**	**0**	**0**	**60**	**90**	**6**	**150**
Semester : 6													
Security and Privacy Specialization Core Courses													
TE7252	0705210633	Cryptography	PC		4	0	0	0	0	40	60	4	100
TE7258	0705210634	Hardware Security	PC		3	0	0	0	0	30	45	3	75
		Total			**7**	**0**	**0**	**0**	**0**	**70**	**105**	**7**	**175**

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 7													
Artificial Intelligence and Machine Learning Specialization Core Courses													
T7805	0705210722	Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0705210723	Seminar	PIS		0	0	4	20	30	0	0	2	50
				Total	**0**	**0**	**14**	**70**	**105**	**0**	**0**	**7**	**175**
Semester : 7													
Computing Specialization Core Courses													
T7805	0705210722	Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0705210723	Seminar	PIS		0	0	4	20	30	0	0	2	50
				Total	**0**	**0**	**14**	**70**	**105**	**0**	**0**	**7**	**175**
Semester : 7													
Data Science Specialization Core Courses													
T7805	0705210722	Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0705210723	Seminar	PIS		0	0	4	20	30	0	0	2	50
				Total	**0**	**0**	**14**	**70**	**105**	**0**	**0**	**7**	**175**

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Catalog Course Code	Course Code	Course Title	Nature	Specialization/ Area/ Department	Teaching Scheme (Hours Per Week)			Examination Scheme (Marks)				Total Credits	Total
								Practical		Theory			
					L	T	Lab	CA	ESE	CA	ESE		
Semester : 7													
Game Design & Development Specialization Core Courses													
T7805	0705210722	Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0705210723	Seminar	PIS		0	0	4	20	30	0	0	2	50
				Total	**0**	**0**	**14**	**70**	**105**	**0**	**0**	**7**	**175**
Semester : 7													
Internet of Things Specialization Core Courses													
T7805	0705210722	Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0705210723	Seminar	PIS		0	0	4	20	30	0	0	2	50
				Total	**0**	**0**	**14**	**70**	**105**	**0**	**0**	**7**	**175**
Semester : 7													
Security and Privacy Specialization Core Courses													
T7805	0705210722	Project	PIS		0	0	10	50	75	0	0	5	125
T7802	0705210723	Seminar	PIS		0	0	4	20	30	0	0	2	50
				Total	**0**	**0**	**14**	**70**	**105**	**0**	**0**	**7**	**175**

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Semester	Internal Credits	External Credits	Total Credits	Total Marks
Artificial Intelligence and Machine Learning				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	**0**	**20**	**20**	**500**
Computing				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	**0**	**20**	**20**	**500**
Data Science				
Semester 5	0	7	7	175
Semester 6	0	6	6	150
Semester 7	0	7	7	175
Total	**0**	**20**	**20**	**500**
Game Design & Development				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	**0**	**20**	**20**	**500**
Internet of Things				
Semester 5	0	7	7	175
Semester 6	0	6	6	150

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Semester 7	0	7	7	175
Total	**0**	**20**	**20**	**500**
Security and Privacy				
Semester 5	0	6	6	150
Semester 6	0	7	7	175
Semester 7	0	7	7	175
Total	**0**	**20**	**20**	**500**