

**School of Computer Science and Engineering****Structure for B. Tech in Computer Science & Engineering (2022-23)**

<b>Semester - I</b>											
Course Code	Course Title	L	T	P	Cr	Evaluation Scheme					
						Component	Exam	Marks	Wt.%	Min Pass (%)	Pass (%)
UST101 (FC)	Applied Mathematics - I	3	1	-	4	Theory	FA	50	50	40	40
							SA	50	50	40	
UST102 (FC)	Applied Physics	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
USC101 (FC)	Basics of Electrical and Electronics Engineering	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS102 (PC)	Programming for Problem Solving Using C	2	-	4	4	Practical	FA	150	50	40	40
							SA	50	50	40	
University Core (UCM002)	English and Communication Skills	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UNM001	Constitution of India	-	-	-	NC	Theory	FA	50	50	40	40
<b>Total</b>		<b>14</b>	<b>1</b>	<b>10</b>	<b>20</b>	<b>Total Hours: 25 Hrs.; Total Credits: 20</b>					
FA – Formative Assessment Theory; SA- Summative Assessment P: FC –Fundamental Core; PC – Program Core; PE - Program Elective; UC - University Core; UNCMC- University Mandatory Non- Credit Course											

<b>Semester - II</b>											
Course Code	Course Title	L	T	P	Cr	Evaluation Scheme					
						Component	Exam	Marks	Wt.%	Min Pass (%)	Pass (%)
UST201 (FC)	Applied Mathematics - II	3	1	-	4	Theory	FA	50	50	40	40
							SA	50	50	40	
UST202 (FC)	Applied Chemistry	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS201 (PC)	Data Structures	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS202 (PC)	Microprocessors and Microcontrollers	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS203 (PC)	Data Communications and Computer Networks	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UNM002	Human Values & Ethics	-	-	-	NC	-			-	-	
<b>Total</b>		<b>15</b>	<b>1</b>	<b>8</b>	<b>20</b>	<b>Total Hours: 24 Hrs.; Total Credits: 20</b>					
FA – Formative Assessment; SA-Summative assessment; FC –Fundamental Core; PC – Program Core ; PE - Program Elective; UC - University Core; UNCMC- University Mandatory Non- Credit Course											

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<b>Semester - III</b>											
Course Code	Course Title	L	T	P	Cr	Evaluation Scheme					
						Component	Exam	Marks	Wt.%	Min Pass (%)	Pass (%)
UCS301 (PC)	Computer Organization and Architecture	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS302 (PC)	Operating Systems	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS303 (PC)	Software Engineering	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS304 (PC)	Object Oriented Programming Using C++	2	-	4	4	Practical	FA	50	50	40	40
							SA	50	50	40	
UCS305 (PC)	Database Management System	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UNM004	Environmental Science	-	-	-	NC	-	-	-	-	-	-
<b>Total</b>		<b>14</b>	<b>-</b>	<b>12</b>	<b>20</b>	<b>Total Hours: 26 Hrs.; Total Credits: 20</b>					
<b>FA – Formative Assessment; SA -Summative assessment; FC –Fundamental Core; PC – Program Core; PE - Program Elective; UC - University Core; UNCMC- University Mandatory</b> <b>Non- Credit Course</b>											

<b>Semester - IV</b>											
Course Code	Course Title	L	T	P	Cr	Evaluation Scheme					
						Component	Exam	Marks	Wt.%	Min Pass (%)	Pass (%)
UCS401 (PC)	Applied Mathematics - III	3	1	-	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS402 (PC)	Java Programming	2	-	2	4	Practical	FA	50	50	40	40
							SA	50	50	40	
UCS403 (PE)	Program Elective I	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UCS404 (UOE401)	Fundamentals of Cloud Computing	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	100	50	40	
UCM001	Foreign Language	3	-	2	4	Theory & Practical	FA	50	50	40	40
							SA	50	50	40	
UNM007	Sustainable Development Goals	-	-	-	NC	-	-	-	-	-	-
<b>Total</b>		<b>15</b>	<b>1</b>	<b>8</b>	<b>20</b>	<b>Total Hours: 24 Hrs.; Total Credits: 20</b>					
<b>FA – Formative Assessment; SA -Summative assessment; FC –Fundamental Core; PC – Program Core; PE - Program Elective; UC - University Core; UNCMC- University Mandatory</b> <b>Non- Credit Course</b>											

**School of Computer Science and Engineering****Structure for B. Tech in Computer Science & Engineering (2022-23)**

<b>Academic Year 2022-2023- Structure for B. Tech Third Year Semester V</b>									
<b>Course Code</b>	<b>Course Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	<b>Component</b>	<b>Evaluation Scheme</b>		
							<b>Exam</b>	<b>WT</b>	<b>Min.Pass %</b>
<b>CST2501</b>	Design and Analysis of Algorithms	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2502</b>	Compiler Design	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2503</b>	Database Management Systems	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2504</b>	Program Vertical - I	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2505</b>	Design and Analysis of Algorithms Laboratory	-	-	2	1	Practical	FEP	100	40
<b>CST2506</b>	Compiler Design Laboratory	-	-	2	1	Practical	FEP	50	40
							OE	50	40
<b>CST2507</b>	Database Management Systems Laboratory	-	-	2	1	Practical	FEP	50	40
							POE	50	40
<b>CST2508</b>	Program Vertical –I Laboratory	-	-	2	1	Practical	FEP	50	40
<b>CST2509</b>	Software Proficiency Program - I	2	-	4	4	Practical	FEP	50	40
							POE	50	40
<b>CST2510</b>	Scholastic Aptitude	3	-	-	Au	Theory	FET	100	40
<b>Total</b>		<b>17</b>	<b>-</b>	<b>12</b>	<b>20</b>	<b>Total Hrs.: 29, Total Credits: 20</b>			
<b>FET - Faculty Evaluation Theory; FEP - Faculty Evaluation Practical; CAT - Continuous Assessment Test, ESE - End Semester Examination: Au - Audit Course</b>									



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**Structure for B. Tech in Computer Science & Engineering (2022-23)**

Academic Year 2022-2023 - Structure for B. Tech Third Year Semester VI									
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme		
							Exam	WT	Min Pass %
CST2601	Information Security	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
CST2602	Advanced Database Systems	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
CST2603	Machine Learning	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
CST2604	Program Vertical II	3	-	-	3	Theory	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
CST2605	Information Security Laboratory	-	-	2	1	Practical	FEP	100	40
CST2606	Advanced Database Systems Laboratory	-	-	2	1	Practical	FEP	50	40
							POE	50	40
CST2607	Machine Learning Laboratory	-	-	2	1	Practical	FEP	50	40
							POE	50	40
CST2608	Program Vertical II Laboratory	-	-	2	1	Practical	FEP	100	40
CST2609	Software Proficiency Program II	-	-	4	2	Practical	FEP	50	40
							POE	50	40
CST2610	Mini Project-II	-	-	2	1	Practical	FEP	50	40
							POE	50	40
CST2611	Internship Training	-	-	-	1	Project	FEP	100	40
CST2612	Foreign Language	2	-	-	Au	Theory	FEP	100	40
Total		14	-	14	20	Total Hours: 28, Total Credits: 20			
<b>FET - Faculty Evaluation Theory; FEP - Faculty Evaluation Practical; CAT - Continuous Assessment Test, ESE - End Semester Examination: Au - Audit Course</b>									



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**Structure for B. Tech in Computer Science & Engineering (2022-23)**

Structure for B. Tech Final Year Semester VII									
Course Code	Course Title	L	T	P	C	Component	Evaluation Scheme		
							Exam	WT %	Min. Pass %
<b>CST2701</b> (PC   ST) Version: 1.0	Distributed and Parallel Computing	3	-	-	3	Theory 100 Marks	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2702</b> (PC   ST) Version: 1.0	Distributed and Parallel Computing Laboratory	-	-	2	1	Practical 50 Marks	FEP	100	40
<b>CST2703</b> (PC   ST) Version: 1.0	Agile Software Development	3	-	-	3	Theory 100 Marks	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2704</b> (PC   ST) Version: 1.0	Agile Software Development Laboratory	-	-	2	1	Practical 100 Marks	FEP	50	40
							POE	50	40
<b>CST2705</b> (PC   ST) Version: 1.0	Mobile Application Development	3	-	-	3	Theory 100 Marks	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2706</b> (PC   ST) Version: 1.0	Mobile Application Development Laboratory	-	-	2	1	Practical 100 Marks	FEP	50	40
							POE	50	40
<b>CST2707_</b> (PE   ST) Version: 1.0	Program Vertical III	3	-	-	3	Theory 100 Marks	FET	20	40
							CAT I	15	
							CAT II	15	
							ESE	50	40
<b>CST2708--_</b> (PE   ST) Version: 1.0	Program Vertical III Laboratory	-	-	2	1	Practical 50 Marks	FEP	100	40
<b>CST2709</b> (PC ST) Version: 1.0	Software Proficiency Program III	-	-	2	1	Practical 100 Marks	FEP	50	40
							POE	50	40
<b>Phase – I Tracks *</b>									
<b>II-401</b>	Industry Internship Program (IIP-II) with project.	-	-	2	1	Project	FEP	100	Min 50
<b>ED-401</b>	Entrepreneurship Venture Scheme (EVS)	-	-	2	1	Project	FEP	100	Min 50
<b>RE-401</b>	Undergraduate Research Opportunity Program (UROP)	-	-	2	1	Project	FEP	100	Min 50
<b>CP-401</b>	Capstone Project with Vertical and University Open Electives	-	-	2	1	Project	FEP	100	Min 50
<b>Total</b>		<b>12</b>		<b>16</b>	<b>18</b>	<b>Total Hours: 28, Total Credits: 19</b>			
* Tracks Phase – I is a preparation for Tracks Phase – II									
Course Codes : II – Industrial Internship Program; ED – Entrepreneurship Venture Scheme; RE – Undergraduate Research Opportunity Program; CP – Capstone Project; UE – University Open Elective									



**School of Computer Science and Engineering**

**Structure for B. Tech in Computer Science & Engineering (2022-23)**

**Program Electives (SEM – IV)**

Course Code	Program Elective - I
UCS4031	Advanced Network Technologies
UCS4032	Data warehouse or Data Mining
UCS4033	Simulation and Modelling
UCS4034	Cyber Security

**Program Electives (SEM – VI)**

Course Code	Program Elective - III
CST26041	Advanced Network Technologies
CST26042	Internet of Things
CST26043	Intelligent Systems
CST26044	Recommender Systems
CST26045	High Performance Computing
CST26046	Human Computer Interaction
CST26047	Ethical Hacking
CST26048	Risk Assessment and Security Audit

**Program Electives (SEM – V)**

Course Code	Program Elective - II
CST25041	Wireless Sensor Networks
CST25042	Mobile Computing
CST25043	Data warehouse or Data Mining
CST25044	Business Analytics
CST25045	Simulation and Modelling
CST25046	Computer Vision
CST25047	Cyber Security
CST25048	Digital Forensics

**Program Electives (SEM – VII)**

Course Code	Program Elective - IV
CST27071	Network Simulation and Modeling
CST27072	Soft Computing
CST27073	Software Architecture
CST27074	Block chain Technologies