COMPUTER SCIENCE AND TECHNOLOGY (CST)
COURSE STRUCTURE

(Tentative)

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Introduction to Computer Science and Technology	Data Structures	Statistics and Numerical Methods	Linear Algebra and Optimization	Formal Language and Automata Theory	DevOps	Departmental Elective (DE-3)*	Departmental Elective* (DE-5)
Computer Programming	Object Oriented Programming (using Java)	Design and Analysis of Algorithms	Database Management System	Full Stack Development	Compiler Design	Departmental Elective* (DE-4)	Open Category Course* (OC-3)
Digital Logic Design	Discrete Structures	Computer Networks	Operating Systems	Artificial Intelligence and Machine Learning	Edge Computing	Open Category Course# (OC-2)	Industry Internship/ Research Internship/ Innovation & Start-up
Sensors & Actuators	Probability and Random Process	Computer Organization and Architecture	Software Engineering & Agile Methodology	Departmental Elective* (DE-1)	Departmental Elective* (DE-2)	Skill Enhancement Program/Research Internship/ On Job Training	Professional Development##
Matrices and Calculus	Basic Electrical & Electronics Engineering	Introduction to Internet of Things	Data Science	Cryptography and Network Security	Open Category Course (OC-1)	Creative Problem Solving	**Honours or Minor Degree (Optional)**
Computer Programming Lab	Data Structures Lab	Design Analysis and Algorithm Lab	Data Science Lab	Full Stack Development Lab	Compiler Design Lab	**Honours or Minor Degree (Optional)**	
Web Technology Lab	Object Oriented Programming Lab	Design & Thinking Lab	Database Management System Lab	Artificial Intelligence and Machine Learning Lab	DevOps Lab		
Novel Engaging Course	Electrical & Electronics Engineering Lab	Problem Solving through Python Programming	Competitive Programming	Cornerstone Project	Capstone Project		
Language Lab	Novel Engaging Course	Novel Engaging Course	Novel Engaging Course	Professional Skills & Competencies - I	Professional Skills & Competencies - II		
Micro Project-I	Micro Project-II	Macro Project-I	Macro Project-II	Supply Chain Management	Professional Certification		
Universal Human Values & Professional Ethics (UHVPE)	Sustainability & Environmental Science	Cyber Security	Project Management, Economics & Financing	**Honours or Minor Degree (Optional)**	Disaster Management		
Skill Internship Program (Soft Skill): Minimum 45 hours duration		Skill Internship Program (Institute Level) (Qualifier): Minimum 30 hours duration	**Honours or Minor Degree (Optional)**		**Honours or Minor Degree (Optional)**		

Legend:
- Departmental Core Courses
- Basic Science Courses
- Engineering Science Courses
- Mandatory Audit Courses

Note:
1. *Mandatory Workshops in each semester (I to VI) at Department Level*
2. ** Course will be run through SWAYAM/NPTEL*
3. *# Course will be run through MITS MOOCs.*

Departmental Elective Courses
Computer Science and Technology
Large Language Models
Extended Reality
Distributed Systems
Software Testing
Social Network Analysis
Mobile Computing
Ethical Hacking
Distributed Optimization and Machine Learning
Information Retrieval
Deep Learning for Computer Vision
Natural Language Processing
Reinforcement Learning
Blockchain Technologies
Big Data Computing
Introduction to Industry 4.0 and Industrial Internet of Things
Exploratory Data Analysis
Recommender Systems
Quantum Computing
Quantum Artificial Intelligence
Open Category Courses
Soft Computing
Software Engineering
Software Testing
Data Mining & Pattern Warehousing
Recommender Systems

Computer Science	*Technology*
Introduction to Computer Science and Technology	Web Technology
Computer Programming	Sensors & Actuators
Digital Logic Design	Introduction to Internet of Things
Data Structures	Design & Thinking Lab
Object Oriented Programming (using Java)	Full Stack Development
Discrete Structures	DevOps
Design and Analysis of Algorithms	Edge Computing
Computer Networks	
Computer Organization and Architecture	
Problem Solving through Python Programming	
Database Management System	
Operating Systems	
Software Engineering & Agile Methodology	
Data Science	
Formal Language and Automata Theory	
Artificial Intelligence and Machine Learning	
Compiler Design	
Cryptography and Network Security	