

Dual Degree Programme in Computer Science and Engineering

Semester I

	Course Name			
1.	Humanities and Social Sciences	2-0-0	2	HS
2.	Environmental Studies	2-0-2	3	BS
3.	Engineering Mathematics-I (Calculus and Transform)	4-0-0	4	BS
4.	Engineering Foundation-I (Computer Programming)	2-0-4	4	EF
6.	Introduction to Engineering-I (Lecture/Visit/Demo/Doing)	1-0-2	2	EF
7.	Engineering Drawing & Visualization	0-0-4	2	DI
8.	Principles of Economics	2-0-0	2	HS
9.	English in Practice	2-0-2	Non-credit	
		Total (19)	HS-4, BS-7, EF-6, DI-2	

*Non-credit course: need to pass Basic English course

Semester II

	Course Name			
1.	Physics-I	3-0-2	4	BS
2.	Chemistry-I	3-0-2	4	BS
3.	Engineering Mathematics-II (Probability and Statistics)	4-0-0	4	BS
4.	Engineering Foundation-II (Data Structure)	3-0-2	4	EF
5.	Introduction to Engineering-II (Engineering Specific)	1-0-2	Non-Credit	EF
6.	Product Realization	0-0-4	2	DI
7.	IPR and Law	2-0-0	2	HS
		Total (20)	BS-12, EF-4, DI-2, HS-2	

Semester III

	Course Name			
1.	Engineering Foundation-III (Engineering Mechanics)		4	EF
2.	Biology/Chemistry-II/Physics-II	3-0-2	4	BS
3.	Discrete Mathematical Structures	3-1-0	4	BC
4.	Digital Logic and Systems Design	3-0-2	4	BC
5.	Programming Languages	3-0-2	4	BC
		Total (20)	EF-4, BS-4, BC-12	

Semester IV

	Course Name			
1.	Engineering Foundation-1V (Numerical Methods)		4	EF
2.	Engineering Foundation-V (Signals and Systems)		4	EF
3.	Computer Architecture	3-0-2	4	BC
4.	Design and Analysis of Algorithms	3-1-0	4	BC
5.	Database Management Systems	3-0-2	4	BC
6.	Professional Practice & Ethics	1-0-2	2	HS
		Total 22		EF-8, BC-12, HS-2

Semester V

	Course Name			
1.	Operating Systems	3-0-2	4	BC
2.	Machine Learning	3-0-2	4	BC
3.	Bachelor Elective- I		4	BE
4.	Technical Writing	2-0-0	2	HS
5.	Open-Elective-I	3-0-0	3	OE
6.	Open-Elective-II	3-0-0	3	OE
		Total (20)		HS-2, BC-8, BE-4,OE-6

Semester VI

	Course Name			
1.	Theory of Computation	3-1-0	4	BC
2.	Computer Networks	3-1-0	4	BC
3.	Bachelor Elective- II		4	BE
4.	Open-Elective-III		3	OE
5.	Open-Elective-IV		3	OE
		Total (18)		BC-8, BE-4, OE-6

Semester VII

	Course Name			
1.	Project (Engineering Specific)		6	BE
2.	Bachelor Elective -III		4	BE
3.	Advanced Algorithms		3	MC
4.	Optimization Techniques		3	MC
5.	Master Specialization-I		3	ME
		Total (19)		BE- 10, MC-6, ME-3

Semester VIII

	Course Name			
1.	Master Specialization –II		3	ME
2.	Master Specialization –III		3	ME
3.	Master Specialization –IV		3	ME
4.	Master Specialization –V		3	ME
5.	Master Specialization –VI		3	ME
		Total (15)	ME-15	

Semester IX

	Course Name			
1.	Master Specialization-VII		3	ME
2.	Master Specialization-VIII		3	ME
3.	Dissertation		9	DS
		Total (15)	ME-6, DS-9	

Semester X

	Course Name			
1.	Dissertation		15	DS
		Total (15)	DS-15	

Total Credits: 183 (Minimum)

Core Courses for B. Tech Computer Science & Engineering:

S. No.	Course Name
1.	Discrete Mathematical Structures
2.	Digital Logic and Systems Design
3.	Programming Languages
4.	Computer Architecture
5.	Design and Analysis of Algorithms
6.	Database Management Systems
7.	Operating Systems
8.	Machine Learning
9.	Theory of Computation
10.	Computer Networks

Elective Courses for B. Tech Computer Science & Engineering:

S. No.	Course Name
1.	Minor Project
2.	Independent Study
3.	Compiler Design

4.	Artificial Intelligence
5.	Cloud Computing
6.	Computer Graphics
7.	Digital Image processing
8.	Modeling & Simulations
9.	Object Oriented Programming
10.	Parallel & Distributed Systems
11.	Software Engineering

Elective Courses for M. Tech in Computer Science & Engineering:

S.No.	Course Name
1	Advanced Software Engineering
2.	Big Data Analytics
3.	Computer Vision
4.	Data Communication and Computer Networks
5.	Data Mining and Knowledge Discovery
6.	Large Scale Graph Algorithms and Application
7.	Mobile Ad Hoc Networks
8.	Multicast Communication
9.	Natural Language Processing
10.	Network Security
11.	Object Oriented Software Engineering
12.	Performance Modeling of Computer Communication Networks
13.	Swarm Intelligence
14.	Services Oriented Architecture
15.	Wireless Communication and Mobile Computing

Prerequisite for M. Tech in Computer Science & Engineering:

1. Digital System and Design
2. Computer Architecture
3. Operating System
4. Design and Analysis of Algorithms