

M.Tech. in Computer Science and Engineering

**Department of Computer Science and Engineering, Tezpur University
Napaam -784 028, Sonitpur, Assam**

About the Programme:

The two-year post graduate programme in Computer Science and Engineering is intended to train the students in both advanced areas in core courses and specialized topics in emerging technologies. Courses offered include Mathematical Foundation for Computer Science, Advanced Algorithms and Data Structures, Advanced Computer Architectures, Advanced Operating Systems, Selected Topics in Computer Networks, Modern Compiler Design, Pattern Recognition, Image Processing and Computer Vision, Distributed Computing, Parallel Algorithms, Advanced Database System, Bioinformatics, Machine Learning, Natural Language Processing etc. The project work in the final year is intended to equip the students to go deeper into her/his area of specialization. The curriculum is organized with few core courses and many electives to give the students enough choice for specialization like Soft Computing, Networking, Algorithms, Cyber Physical Systems, and Bioinformatics etc.

Programme Educational Objectives:

1. The graduates shall have an in-depth knowledge in the fundamentals of Computing, with the ability and confidence to specialize in topics of interest in Computing
2. The graduates shall have the ability to solve problems and critically analyze solutions in the area of interest in Computing
3. The graduates shall have the skillset for using knowledge in Computing for the benefit of society with sound ethical practices and a lifelong interest in contributing to knowledge in the field

Programme Outcomes:

1. Demonstrate in-depth Knowledge in the fundamentals of Computing
2. Critically analyze solutions, proofs and programs in the field of Computing
3. Apply in-depth knowledge in the field of computing to solve problems in the area
4. Find, read and understand published literature, and identify challenging issues in areas of interest in Computing

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5. Identify appropriate mathematical, analytical or software tools and their use
6. Identify and solve problems spanning multiple disciplines through collaborative thinking and application of skillset in Computing
7. Manage projects effectively
8. Communicate ideas, reviews, solutions and proofs effectively
9. Maintain a lifelong interest and aptitude for learning
10. Understand and remain aware of social responsibilities in profession and follow ethical practices in the field
11. Reflect on the thought processes used in arriving at solutions, independently review, and design progressively more appropriate solutions, to add to the knowledge base in the field

Eligibility: B.E./B.Tech./AMIE/AMIETE in Computer Science & Engineering or MCA with a minimum of 60% marks in aggregate. Candidates selected under GATE must possess a valid GATE score in CS.

Total Intake: 18

Course Structure:

Time Duration:

Minimum duration: 2 years (4 semesters)

Maximum duration: 4 years (8 semesters)

Credit Requirements: Minimum Credit requirement: 68

Core Courses: 24

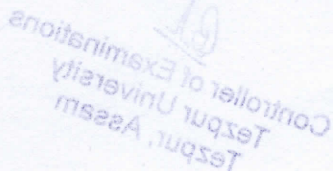
Electives: 12

Term Projects: 24

Seminar: 02

Open Electives: 06



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First Semester			Second Semester		
Course Code	Course Title	L-T-P:Cr.	Course Code	Course Title	L-T-P: Cr.
CS 541	Mathematical Foundation for Computer Science	3-1-0:4	CS 634	Selected Topics in Computer Networks	3-0-1: 4
CS 542	Advanced Algorithms and Data Structures	2-1-0:3	CS 544	Advanced Programming Lab II	0-1-2: 3
CS 606	Computer Architecture and Parallel Processing	3-0-0:3	CS 545	Seminar	0-2-0: 2
CS543	Advanced Programming Lab I	0-1-2:3	-	Elective I	3/4
IT510	Advanced Operating Systems	3-0-1: 4	-	Elective II	3/4
Total Credits		17	-	Open Elective I	3-0-0:3
			Total Credits		18/20

Third Semester			Fourth Semester		
Course Code	Course Title	L-T-P: Cr.	Course Code	Course Title	L-T-P: Cr.
-	Elective III	3/4	CS 641	Term Project-II	0-0-16: 16
-	Elective IV	3/4	Total credits		16
-	Open Elective II	3-0-0:3			
CS 640	Term Project I	0-0-8: 8			
Total Credits		17/19			

Elective I					
Course Code	Course Title	L-T-P: Cr.	Course Code	Course Title	L-T-P: Cr.
IT 610	Advanced Database System	3-0-1:4	IT 507	Computer Security and Cryptography	3-0-0:3
CS 525	Artificial Intelligence	3-0-0:3	CS 664	Parallel Algorithms	3-0-0:3
CS 622	Modern Compiler Design	3-0-0:3	CS 613	Image Processing and Computer Vision	3-0-0:3
CS 659	An Introduction to Probability in Computing	3-0-0:3	CS 638	Software Defined Networking and Network Function Virtualization	3-0-0:3


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