

# M.Tech. Computer Science and Engineering

Batch 2019

<b>Semester I</b>			
<b>Code</b>	<b>Course Name</b>	<b>L-T-P</b>	<b>Credits</b>
CS 540	Fundamentals of Computing Systems Design	3 -0 - 3	9
EE 611	Applied Linear Algebra in Electrical Engineering	3 -0 - 0	6
CS 510	Foundations of Theoretical Computer Science	3 -0 - 0	6
	Elective I	3 -0 - 0	6
		12 -0 - 3	27
<b>Semester II</b>			
CS 530	Foundations of Machine Learning	3 -0 - 3	9
CS 522	Algorithms design	3 -0 - 0	6
CS 600	M.Tech Thesis Proposal Unit/Seminar	3 -0 - 0	6
	Elective-1	3 -0 - 0	6
	Elective-2	3 -0 - 0	6
		15 -0 - 3	33
<b>Semester III</b>			
CS 651	M.Tech Thesis Work 1		28
<b>Semester IV</b>			
CS652	M.Tech Thesis Work 2		28
HS600	Research communications, ethics and methods	3 -0 - 0	P/NP

## List of Elective courses:

<b>Code</b>	<b>Course Name</b>	<b>L-T-P</b>	<b>Credits</b>
CS 570	Model Checking and Software Verification	3 -0 - 0	6
CS 572	Modelling and Simulation of Systems	3 -0 - 0	6
CS 662	Markov chains and their Applications	3 -0 - 0	6
MA 605	Probability Theory	3 -0 - 0	6
CS 520	Combinatorial Optimization	3 -0 - 0	6
CS 511	Approaches to Software Performance Enhancement	3 -0 - 0	6
CS 521	Foundations of Functional Programming	3 -0 - 0	6
CS 513	Introduction to Information Security	3 -0 - 0	6

Batch 2020

Semester I					
Course Code	Course Name	Credit Structure			
		L	T	P	C
CS 500	Algorithms Lab	0	0	3	2
CS 510	Foundations of Theoretical Computer Science	3	0	0	3
CS 561	Probability & Statistics for Computer Science	3	0	0	3
CS 540	Fundamentals of Computing Systems Design	3	0	3	4
	Programme Elective	3	0	0	3
	<b>Total</b>				15

Semester II					
Course Code	Course Name	Credit Structure			
		L	T	P	C
CS 530	Foundations of Machine Learning	3	0	3	4
CS 600	M.Tech Thesis Proposal Unit/Seminar	3	0	0	3
	Elective-1	3	0	0	3
	Elective-2	3	0	0	3
CS523	Advanced Algorithms	3	0	0	3
HS600	Research communications, ethics and methods	3	0	0	P/NP
	<b>Total</b>				16

Semester III					
CS651	M.Tech Thesis Work1	0	0	14	14

Semester IV					
CS652	M.Tech Thesis Work 2	0	0	14	14

List of Elective courses:					
Course Code	Course Name	Credit Structure			
		L	T	P	C
CS 541	System on Chip Design: Hardware-Software Perspectives	3	0	2	4
CS 620	Algebraic Algorithms	3	0	0	3
CS 606	Programming Language Paradigms	3	0	0	3
CS 531	Higher dimensional data science	3	0	0	3
CS 431	Optimization: Theory and Algorithms	3	0	0	3
CS 441	Foundations of Digital Transformation	2	0	0	2
CS 440	Computer Graphics using OpenGL	3	0	0	3

Batch 2021

**Semester I**

Course Code	Course Name	Credit Structure			
		L	T	P	C
CS524	Advanced Data Structures using C++	3	0	2	4
CS510	Foundations of Theoretical Computer Science	3	0	0	3
CS561	Probability & Statistics for Computer Science	3	0	0	3
CS540	Fundamentals of Computing Systems Design	3	0	3	4
	<b>Total</b>				<b>14</b>

**Semester II**

Course Code	Course Name	Credit Structure			
		L	T	P	C
CS 530	Foundations of Machine Learning	3	0	3	4
CS 600	M.Tech Thesis Proposal Unit/Seminar	3	0	0	3
	Elective-1	3	0	0	3
	Elective-2	3	0	0	3
HS600	Research communication, ethics and methods	3	0	0	3
	<b>Total</b>				<b>16</b>

**Semester III**

Course Code	Course Name	Credit Structure			
		L	T	P	C
CS651	M.Tech Thesis Work1	0	0	0	14

**Semester IV**

Course Code	Course Name	Credit Structure			
		L	T	P	C
CS652	M.Tech Thesis Work 2	0	0	14	14

**List of Elective courses:**

CS572	Modeling and Simulation of Systems	3	0	0	3
CS513	Introduction to Information Security	3	0	0	3
CS525	Randomized algorithms	3	0	0	3
CS431	Optimization: Theory and Algorithms	3	0	0	3