

ACADEMIC CURRICULA

POST GRADUATE DEGREE PROGRAMMES

Master of Technology

(Choice Based Flexible Credit System)

Regulations 2021

Volume – 21 Curriculum



SRM

INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

Kattankulathur, Chengalpattu District 603203,

Tamil Nadu, India

18. M.Tech in Computer Science and Engineering

18. (a) Department Vision Statement

Stmnt - 1	<i>To become a world-class department in imparting high-quality knowledge and providing students with a unique learning and research experience in Computer Science and Engineering.</i>
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18. (b) Department Mission Statement

Stmnt - 1	<i>To impart knowledge in cutting edge technologies in part with industrial standards.</i>
Stmnt - 2	<i>To collaborate with renowned academic institutions in research and development.</i>
Stmnt - 3	<i>To instill societal and ethical responsibilities in all professional activities.</i>

18. (c) Program Education Objectives (PEO)

PEO - 1	<i>Graduates will be able to demonstrate their knowledge and skills acquired in Computer Science and Engineering domain</i>
PEO - 2	<i>Graduates will be able to successfully pursue their research in reputed institutions</i>
PEO - 3	<i>Graduates will have the proficiency to adapt, contribute and innovate new technologies and systems in their job domains with appropriate professional skills</i>
PEO - 4	<i>Graduates will be ethically and socially responsible solution providers and entrepreneurs in Computer Science and other engineering disciplines.</i>
PEO - 5	<i>Graduates will have the ability to excel in their career producing outstanding contribution in Computer Science and its related domains</i>

18. (d) Consistency of PEO's with Mission of the Department

	Mission Stmnt. - 1	Mission Stmnt. - 2	Mission Stmnt. - 3
PEO - 1	3	3	-
PEO - 2	2	3	2
PEO - 3	3	2	2
PEO - 4	2	2	3
PEO - 5	3	2	-

18. (e) PO – Program Outcomes

PO - 1	<i>An ability to independently carry out research /investigation and development work to solve practical problems.</i>
PO - 2	<i>An ability to write and present a substantial technical report/document.</i>
PO - 3	<i>Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.</i>

18. (f) Consistency of PEO's with Program Outcomes (PO)

	Program Outcomes (PO)		
	1	2	3
PEO - 1	3	2	3
PEO - 2	3	3	2
PEO - 3	2	2	2
PEO - 4	2	2	2
PEO - 5	2	2	3

3 – High Correlation, 2 – Medium Correlation, 1 – Low Correlation

18. (g) Programme Structure: M.Tech in Computer Science and Engineering

Professional Core Courses (C)						Professional Elective Courses (E) (Any 7 Courses)					
Course Code	Course Title	Hours/Week			C	Course Code	Course Title	Hours/Week			C
		L	T	P				L	T	P	
21MAC503T	Discrete Mathematics and Probability Theory	3	1	0	4	21CSE531T	Cyber Security Operations	2	1	0	3
21CSC551J	Advanced Data Structures and Algorithms	3	0	2	4	21CSE535T	Network Intrusions and Computer Forensics	2	1	0	3
21CSC550J	Database Technology	3	0	2	4	21CSE541T	Probabilistic Graphical models: Principles and Techniques	3	0	0	3
21CSC552J	Advanced Software Engineering	3	0	2	4	21CSE542T	Deep Generative Models	3	0	0	3
21CSC510T	Parallel Computing	3	1	0	4	21CSE548T	Spatial and Temporal Computing	3	0	0	3
21IPC501J ²	Research Methodology	2	1	2	4	21CSE554T	Computer Networking	3	0	0	3
21CSC601T ¹	Case Studies	3	0	0	3	21CSE563T ³	Big Data Database Technologies	2	1	0	3
Total Credits					27	21CSE565T ³	Web Development	3	0	0	3
						21CSE583T ³	Natural Language Processing and its Applications	3	0	0	3
						21CSE584T ³	Time Series Analysis and Forecasting	2	1	0	3
						21CSE588T ³	Deploying Full Stack Application	3	0	0	3
						21CSE592T ³	Statistical Machine Learning	2	1	0	3
						21CSE593T	User Experience Design Thinking	2	1	0	3
						21CSE594T	Full Stack Development	3	0	0	3
						21CSE627T ³	Internet of Things and Cognitive Computing	3	0	0	3
						21CSE633T ³	Computer Vision on Edge Computing	2	1	0	3
						21CSE637T ³	Deep Learning and its Applications	3	0	0	3
						21CSE643T	Microservices and Service Based Architectures	3	0	0	3
						21CSE653T ³	Cloud Computing with Blockchain	3	0	0	3
						21CSE658T ³	Large Language Models	3	0	0	3
						21CSE664P ¹	Product Thinking	3	0	0	3
						21CSE669P ¹	Quantum Communication and Cryptography	2	1	0	3
						21CSE670P ¹	NP Completeness and Beyond	2	1	0	3
						21CSE600T ¹	Journal Publication	0	0	0	3
						Total Credits					21
Project Work, Internship In Industry / Higher Technical Institutions (P)											
Course Code	Course Title	Hours/Week			C						
		L	T	P							
21CSP501L	Specialization Project (OR)	0	0	40	20						
21CSP502L	Specialization Project	0	0	30	15						
21CSP503L	Domain Internship	0	0	10	5						
Total Credits					20						
Open Elective Courses (O)											
Course Code	Course Title	Hours/Week			C						
		L	T	P							
21CSO621T	Cyber Security	3	0	0	3						
21CSO622T	Big Data Analytics	3	0	0	3						
21CSO623T	Data Sciences	3	0	0	3						
Total Credits					3						
Course Delivery by online mode (³)						Assessment by Open Book Examination (²)					
Course Code	Course Title	Hours/Week			C	Course Code	Course Title	Hours/Week			C
		L	T	P				L	T	P	
21CSE563T ³	Big Data Database Technologies	2	1	0	3	21IPC501J ²	Research Methodology	2	1	2	4
21CSE565T ³	Web Development	3	0	0	3						
21CSE583T ³	Natural Language Processing and its Applications	3	0	0	3						
21CSE584T ³	Time Series Analysis and Forecasting	2	1	0	3						
21CSE588T ³	Deploying Full Stack Application	3	0	0	3						
21CSE592T ³	Statistical Machine Learning	2	1	0	3						
21CSE627T ³	Internet of Things and Cognitive Computing	3	0	0	3						
21CSE633T ³	Computer Vision on Edge Computing	2	1	0	3						
21CSE637T ³	Deep Learning and its Applications	3	0	0	3						
21CSE653T ³	Cloud Computing with Blockchain	3	0	0	3						
21CSE658T ³	Large Language Models	3	0	0	3						
						100% assessment by the Department (¹)					
Course Code	Course Title	Hours/Week			C	Course Code	Course Title	Hours/Week			C
		L	T	P				L	T	P	
21CSE664P ¹	Product Thinking	3	0	0	3	21CSE669P ¹	Quantum Communication and Cryptography	2	1	0	3
21CSE669P ¹	Quantum Communication and Cryptography	2	1	0	3	21CSE670P ¹	NP Completeness and Beyond	2	1	0	3
21CSE670P ¹	NP Completeness and Beyond	2	1	0	3	21CSC601T ¹	Case Studies	3	0	0	3
21CSC601T ¹	Case Studies	3	0	0	3	21CSE600T ¹	Journal Publication	0	0	0	3
21CSE600T ¹	Journal Publication	0	0	0	3						

All elective courses may be studied under MOOC platform

¹ 100% assessment by the Department

² Assessment by Open Book Examination

³ Course Delivery through online mode

18. (h) Implementation Plan: M.Tech in Computer Science and Engineering

Semester - I					
Code	Course Title	Hours/Week			
		L	T	P	
21MAC503T	Discrete Mathematics and Probability Theory	3	1	0	4
21CSC551J	Advanced Data Structures and Algorithms	3	0	2	4
21CSC552J	Advanced Software Engineering	3	0	2	4
21IPC501J ²	Research Methodology	2	1	2	4
					3
Total Credits					16/19

Semester - II					
Code	Course Title	Hours/Week			
		L	T	P	
21CSC550J	Database Technology	3	0	2	4
21CSC510T	Parallel Computing	3	1	0	4
	Professional Elective-1				3
					3
					3
Total Credits					11/17

Semester - III					
Code	Course Title	Hours/Week			
		L	T	P	
21CSC601T ¹	Case Studies	3	0	0	3
	Professional Elective-2				3
					3
					3
					3
Total Credits					6/15

Semester - IV					
Code	Course Title	Hours/Week			
		L	T	P	
21CSP501L	Specialization Project	0	0	40	20
(OR)					
21CSP502L	Specialization Project	0	0	30	15
21CSP503L	Domain Internship	0	0	10	5
					3
					3
Total Credits					20/26

Students must register either 21CSP501L or 21CSP502L and 21CSP503L both in fourth semester

Students must register either 21CSP501L or 21CSP502L and 21CSP503L both in fourth semester

Offered and can be enrolled in both ODD & EVEN semester					
Code	Course Title	Hours/ Week			C
		L	T	P	
	Professional Elective-3				3
	Professional Elective-4				3
	Professional Elective-5				3
	Professional Elective-6				3
21CSE600T ¹	Journal Publication	0	0	0	
	Professional Elective-7				3
	Open Elective	3	0	0	3

18. (i) Program Articulation Matrix: M.Tech in Computer Science and Engineering

Course Code	Course Name	Programme Outcomes		
		1	2	3
21MAC503T	Discrete Mathematics and Probability Theory	3	3	-
21CSC551J	Advanced Data Structures and Algorithms	3	-	-
21CSC550J	Database Technology	2.3	3	3
21CSC552J	Advanced Software Engineering	2.5	2.5	3
21CSC510T	Parallel Computing			
21CSC601T	Case Studies			
21CSE531T	Cyber Security Operations			
21CSE535T	Network Intrusions and Computer Forensics			
21CSE541T	Probabilistic Graphical models: Principles and Techniques			
21CSE542T	Deep Generative Models			
21CSE548T	Spatial and Temporal Computing			
21CSE554T	Computer Networking	2.4	-	2.3
21CSE563T	Big Data Database Technologies	3	-	2
21CSE565T	Web Development	1	-	3
21CSE583T	Natural Language Processing and its Applications	3	-	-
21CSE584T	Time Series Analysis and Forecasting	2	2	2
21CSE588T	Deploying Full Stack Application	2.8	3	3
21CSE592T	Statistical Machine Learning	3	-	-
21CSE593T	User Experience Design Thinking	2	2.3	2.3
21CSE594T	Full Stack Development	3	3	3
21CSE627T	Internet of Things and Cognitive Computing	2	1	2.7
21CSE633T	Computer Vision on Edge Computing	2	2	2
21CSE637T	Deep Learning and its Applications	3	-	2.8
21CSE643T	Microservices and Service Based Architectures	2	-	2.8
21CSE653T	Cloud Computing with Blockchain	3	2	3
21CSE658T	Large Language Models	2	2.2	2.2
21CSE664P	Product Thinking	2	2.5	2.6
21CSE669P	Quantum Communication and Cryptography	1.6	-	2.4
21CSE670P	NP Completeness and Beyond	3	-	3
21CSE600T	Journal Publication			
21IPC501J	Research Methodology	3	2.6	
	Open Elective			
21CSP501L	Specialization Project			
21CSP502L	Specialization Project			
21CSP503L	Domain Internship			
Program Average				



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