

ACADEMIC CURRICULA

UNDERGRADUATE DEGREE PROGRAMMES

Bachelor of Technology

(B.Tech. - Four Years)

(Choice Based Flexible Credit System)

Regulations 2018

Volume - 1

(Revised in March 2019)



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, Kancheepuram District 603203, Tamil Nadu,
India**

11. B.Tech. in Computer Science and Engineering

11. (a) Mission of the Department

Mission Stmt - 1	To impart knowledge in cutting edge Computer Science and Engineering technologies in par with industrial standards.
Mission Stmt - 2	To collaborate with renowned academic institutions to uplift innovative research and development in Computer Science and Engineering and its allied fields to serve the needs of society
Mission Stmt - 3	To demonstrate strong communication skills and possess the ability to design computing systems individually as well as part of a multidisciplinary teams.
Mission Stmt - 4	To instill societal , safety, cultural, environmental, and ethical responsibilities in all professional activities
Mission Stmt - 5	To produce successful Computer Science and Engineering graduates with personal and professional responsibilities and commitment to lifelong learning

11. (b) Program Educational Objectives (PEO)

PEO - 1	Graduates will be able to perform in technical/managerial roles ranging from design, development, problem solving to production support in software industries and R&D sectors.
PEO - 2	Graduates will be able to successfully pursue higher education in reputed institutions.
PEO - 3	Graduates will have the ability to adapt, contribute and innovate new technologies and systems in the key domains of Computer Science and Engineering.
PEO - 4	Graduates will be ethically and socially responsible solution providers and entrepreneurs in Computer Science and other engineering disciplines.
PEO - 5	Graduates will possess the additional skills in core computer science discipline with knowledge of Hardware, Software , Programming , Logic & Reasoning.

11. (c) Mission of the Department to Program Educational Objectives (PEO) Mapping

	Mission Stmt. - 1	Mission Stmt. - 2	Mission Stmt. - 3	Mission Stmt. - 4	Mission Stmt. - 5
PEO - 1	H	H	H	H	H
PEO - 2	L	H	H	H	H
PEO - 3	H	H	M	L	H
PEO - 4	M	H	M	H	H
PEO - 5	H	H	M	M	H

H – High Correlation, M – Medium Correlation, L – Low Correlation

11. (d) Mapping Program Educational Objectives (PEO) to Program Learning Outcomes (PLO)

	Program Learning Outcomes (PLO)												Program Specific Outcomes (PSO)		
	Graduate Attributes (GA)														
	Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modern Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO - 1	PSO - 2	PSO - 3
PEO - 1	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEO - 2	H	H	H	H	H	L	L	H	L	H	L	H	H	H	H
PEO - 3	H	H	H	H	H	L	L	L	L	L	H	H	H	H	H
PEO - 4	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEO - 5	H	H	H	H	H	M	M	H	H	H	H	H	H	H	H

H – High Correlation, M – Medium Correlation, L – Low Correlation

PSO – Program Specific Outcomes (PSO)

PSO - 1	Ability to understand client requirements and suggest solutions
PSO - 2	Ability to create Software for automation and function
PSO - 3	Ability to utilize Logic & Reasoning Skills

11. (e) Program Structure: B.Tech. in Computer Science and Engineering

1. Humanities & Social Sciences including Management Courses (H)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18LEH101J	English	2	0	2	3
18LEH102J	Chinese				
18LEH103J	French				
18LEH104J	German	2	0	2	3
18LEH105J	Japanese				
18LEH106J	Korean				
18PDH101T	General Aptitude	0	0	2	1
18PDH102T	Management Principles for Engineers	2	0	0	2
18PDH103T	Social Engineering	2	0	0	2
18PDH201T	Employability Skills & Practices	0	0	2	1
Total Learning Credits					12
2. Basic Science Courses (B)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18PYB103J	Physics: Semiconductor Physics	3	1	2	5
18CYB101J	Chemistry	3	1	2	5
18MAB101T	Calculus and Linear Algebra	3	1	0	4
18MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4
18MAB201T	Transforms and Boundary Value Problems	3	1	0	4
18MAB204T	Probability and Queueing Theory	3	1	0	4
18MAB302T	Discrete Mathematics for Engineers	3	1	0	4
18BTB101T	Biology	2	0	0	2
Total Learning Credits					32
3. Engineering Science Courses (S)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18MES101L	Engineering Graphics and Design	1	0	4	3
18EES101J	Basic Electrical and Electronics Engineering	3	1	2	5
18MES103L	Civil and Mechanical Engineering Workshop	1	0	4	3
18CSS101J	Programming for Problem Solving	3	0	4	5
18CSS201J	Analog and Digital Electronics	3	0	2	4
18CSS202J	Computer Communications	2	0	2	3
Total Learning Credits					23
4. Professional Core Courses (C)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18CSC201J	Data Structures and Algorithms	3	0	2	4
18CSC202J	Object Oriented Design and Programming	3	0	2	4
18CSC203J	Computer Organization and Architecture	3	0	2	4
18CSC204J	Design and Analysis of Algorithms	3	0	2	4
18CSC205J	Operating Systems	3	0	2	4
18CSC206J	Software Engineering and Project Management	3	0	2	4
18CSC207J	Advanced Programming Practice	3	0	2	4
18CSC301T	Formal Language and Automata	3	0	0	3
18CSC302J	Computer Networks	3	0	2	4
18CSC303J	Database Management Systems	3	0	2	4
18CSC304J	Compiler Design	3	0	2	4
18CSC305J	Artificial Intelligence	3	0	2	4
18CSC350T	Comprehension	0	1	0	1
18CSC208L	Competitive Professional Skills-I	0	0	2	1
18CSC306L	Competitive Professional Skills-II	0	0	2	1
18CSC307L	Competitive Professional Skills-III	0	0	2	1
Total Learning Credits					51
5. Professional Elective Courses (E) (Any 6 Elective Courses)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18CSE351T	Computational Logic	3	0	0	3
18CSE352T	Neuro Fuzzy and Genetic Programming	3	0	0	3
18CSE353T	Digital Image Processing	3	0	0	3
18CSE354T	Network Security	3	0	0	3
18CSE355T	Data Mining and Analytics	3	0	0	3
18CSE356T	Distributed Operating Systems	3	0	0	3
18CSE357T	Biometrics	3	0	0	3
18CSE358T	Pattern Recognition Techniques	3	0	0	3
18CSE359T	Natural Language Processing	3	0	0	3
18CSE360T	Information Storage and Management	3	0	0	3
18CSE451T	Wireless Sensor Networks	3	0	0	3
18CSE452T	Network Protocols and Programming	3	0	0	3
18CSE453T	Network Routing Algorithms	3	0	0	3
18CSE454T	High Performance Computing	3	0	0	3
18CSE455T	Database Security and Privacy	3	0	0	3
18CSE456T	Software Defined Networks	3	0	0	3
18CSE457T	Semantic Web	3	0	0	3
18CSE458T	Wireless and Mobile Communication	3	0	0	3
18CSE459T	Service Oriented Architecture	3	0	0	3
18CSE460T	Network Design and Management	3	0	0	3
Total Learning Credits					18
6. Open Elective Courses (O)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18CSO101T	IT Infrastructure Management	3	0	0	3
18CSO102T	Mobile Application Development	3	0	0	3
18CSO103T	System Modeling and Simulation	3	0	0	3
18CSO104T	Free and Open Source Softwares	3	0	0	3
18CSO105T	Android Development	3	0	0	3
18CSO106T	Data Analysis using Open Source Tool	3	0	0	3
18CSO107T	IOS Development	3	0	0	3
Total Learning Credits					12
7. Project Work, Seminar, Internship In Industry / Higher Technical Institutions (P)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18CSP101L	Massive Open Online Course - I				
18CSP102L	Industrial Training-I	0	0	2	1
18CSP103L	Seminar - I				
18CSP104L	Massive Open Online Course - II				
18CSP105L	Industrial Training-II	0	0	2	1
18CSP106L	Seminar - II				
18CSP107L	Minor Project	0	0	6	3
18CSP108L	Internship (4-6 weeks)				
18CSP109L	Project	0	0	20	10
18CSP110L	Semester Internship				
Total Learning Credits					15
8. Mandatory Courses (M)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18PDM101L	Professional Skills and Practices	0	0	2	0
18PDM201L	Competencies in Social Skills				
18PDM203L	Entrepreneurial Skill Development	0	0	2	0
18PDM202L	Critical and Creative Thinking Skills				
18PDM204L	Business Basics for Entrepreneurs	0	0	2	0
18PDM301L	Analytical and Logical Thinking Skills				
18PDM302L	Entrepreneurship Management	0	0	2	0
18LEM101T	Constitution of India	1	0	0	0
18LEM102J	Value Education	1	0	1	0
18GNM101L	Physical and Mental Health using Yoga	0	0	2	0
18LEM109T	Indian Traditional Knowledge	1	0	0	0
18LEM110L	Indian Art Form	0	0	2	0
8. Mandatory Courses (M)					
Course Code	Course Title	Hours/ Week			
		L	T	P	C
18GNM102L	NSS				
18GNM103L	NCC	0	0	2	0
18GNM104L	NSO				
18CYM101T	Environmental Science	1	0	0	0

11. (f) Program Articulation: B.Tech. in Computer Science and Engineering

Course Code	Course Name	Program Learning Outcomes (PLO)												
		Graduate Attributes											PSO	
		Engineering Knowledge	Problem Analysis	Design & Development	Analysis, Design, Research	Modern Tool Usage	Society & Culture	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO - 1
														PSO - 2
														PSO - 3
18CSS101J	Programming for Problem Solving	H	H	M	M	H	L	L	M	H	M	L	H	H
18CSC201J	Data Structures and Algorithms	H	H	H	M	L	L	M	H	M	M	H	L	H
18CSC202J	Object Oriented Design and Programming	H	H	H	H	M	L	M	H	H	M	H	L	H
18CSC203J	Computer Organization and Architecture	H	M	H	M	L	L	L	M	L	L	L	M	M
18CSC204J	Design and Analysis of Algorithms	H	H	H	H	M	M	L	M	M	M	M	H	H
18CSC205J	Operating Systems	H	H	H	H	H	M	L	M	H	M	M	H	H
18CSC206J	Software Engineering and Project Management	H	H	H	H	H	H	H	H	H	H	H	L	M
18CSC207J	Advanced Programming Practice	H	H	M	M	H	L	L	M	H	M	L	H	H
18CSC301T	Formal Language and Automata	H	H	H	H	L	L	L	L	M	M	L	H	H
18CSC302J	Computer Networks	H	H	H	H	H	M	L	M	H	M	M	H	M
18CSC303J	Database Management Systems	H	H	H	H	M	L	M	H	M	M	H	H	M
18CSC304J	Compiler Design	H	H	H	M	L	L	L	M	M	M	L	H	H
18CSC305J	Artificial Intelligence	H	H	H	H	M	M	L	L	M	M	L	H	H
18CSC208L	Competitive Professional Skills-I	H	H	H	H	H	L	L	M	H	H	M	H	H
18CSC306L	Competitive Professional Skills-II	H	H	H	H	H	L	L	M	H	H	M	H	H
18CSC307L	Competitive Professional Skills-III	H	H	H	H	H	L	L	M	H	H	M	H	H
18CSE351T	Computational Logic	M	H	M	H	M	M	L	M	M	M	M	H	H
18CSE352T	Neuro Fuzzy and Genetic Programming	M	H	H	H	H	M	L	M	M	M	M	H	H
18CSE353T	Digital Image Processing	H	H	H	M	H	M	L	M	H	M	M	H	H
18CSE354T	Network Security	H	H	H	H	H	L	L	M	H	H	L	H	H
18CSE355T	Data Mining and Analytics	H	H	H	H	H	H	H	H	H	H	H	H	H
18CSE356T	Distributed Operating Systems	H	H	H	H	M	L	M	H	M	M	M	H	M
18CSE357T	Biometrics	M	H	H	H	M	M	H	M	H	M	M	H	H
18CSE358T	Pattern Recognition Techniques	H	H	H	H	H	M	M	M	M	M	M	L	H
18CSE359T	Natural Language Processing	H	H	H	H	H	L	M	H	M	M	M	H	H
18CSE360T	Information Storage and Management	H	H	H	H	M	H	H	M	H	M	H	H	M
18CSE451T	Wireless Sensor Networks	H	H	H	H	M	M	M	M	M	H	L	H	H
18CSE452T	Network Protocols and Programming	H	H	H	H	M	M	M	M	M	H	L	H	H
18CSE453T	Network Routing Algorithms	H	H	H	H	M	M	M	M	M	H	L	H	H
18CSE454T	High Performance Computing	H	H	H	H	H	L	L	M	H	H	L	H	H
18CSE455T	Database Security and Privacy	H	H	H	H	H	H	H	H	H	H	H	H	H
18CSE456T	Software Defined Networks	H	H	H	H	M	M	M	M	H	M	M	H	H
18CSE457T	Semantic Web	M	H	H	H	H	M	L	M	M	H	M	H	H
18CSE458T	Wireless and Mobile Communication	H	H	H	H	M	H	H	H	M	H	M	H	H
18CSE459T	Service Oriented Architecture	M	H	H	H	H	M	M	M	M	H	M	H	H
18CSE460T	Network Design and Management	H	H	H	H	M	M	M	M	M	H	L	H	H
18CSP101L	Massive Open Online Course - I	H	M	M	M	M	M	M	M	H	H	H	M	H
18CSP102L	Industrial Training-I	H	M	M	M	M	M	M	M	H	H	H	M	H
18CSP103L	Seminar - I	H	M	M	M	M	M	M	M	H	H	H	M	H
18CSP104L	Massive Open Online Course - II	H	M	M	M	M	M	M	M	H	H	H	M	H
18CSP105L	Industrial Training-II	H	M	M	M	M	M	M	M	H	H	H	M	H
18CSP106L	Seminar - II	H	M	M	M	M	M	M	M	H	H	H	M	H
18CSP107L	Minor Project	H	H	H	H	H	M	M	H	H	H	H	H	M
18CSP108L	Internship (4-6 weeks)	H	H	H	H	H	M	M	H	H	H	H	H	M
18CSP109L	Project	H	H	H	H	H	M	M	H	H	H	H	H	M
18CSP110L	Semester Internship	H	H	H	H	H	M	M	H	H	H	H	H	M
	Program Average	H	H	M	H	M	L	M	L	M	M	M	H	M

H – High Correlation, M – Medium Correlation, L – Low Correlation

11. (g) Implementation Plan: B.Tech. in Computer Science and Engineering

Semester - I					
Code	Course Title	Hours/ Week			C
		L	T	P	
18LEH101J	English	2	0	2	3
18MAB101T	Calculus and Linear Algebra	3	1	0	4
18PYB103J	Physics: Semiconductor Physics	3	1	2	5
18MES101L	Engineering Graphics and Design	1	0	4	3
18EES101J	Basic Electrical and Electronics Engineering	3	1	2	5
18PDM101L	Professional Skills and Practices	0	0	2	0
18LEM101T	Constitution of India	1	0	0	0
18GNM101L	Physical and Mental Health using Yoga	0	0	2	0
Total Learning Credits					20

Semester - II					
Code	Course Title	Hours/ Week			C
		L	T	P	
18LEH10XJ	Chinese / French / German / Japanese/ Korean	2	0	2	3
18MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4
18CYB101J	Chemistry	3	1	2	5
18CSS101J	Programming for Problem Solving	3	0	4	5
18MES103L	Civil and Mechanical Engineering Workshop	1	0	4	3
18PDH101T	General Aptitude	0	0	2	1
18LEM102J	Value Education	1	0	1	0
18GNM102L	NSS	0	0	2	0
18GNM103L	NCC				
18GNM104L	NSO				
Total Learning Credits					21

Semester - III					
Code	Course Title	Hours/ Week			C
		L	T	P	
18MAB201T	Transforms and Boundary Value Problems	3	1	0	4
18BTB101T	Biology	2	0	0	2
18CSS201J	Analog and Digital Electronics	3	0	2	4
18CSC201J	Data Structures and Algorithms	3	0	2	4
18CSC202J	Object Oriented Design and Programming	3	0	2	4
18CSC203J	Computer Organization and Architecture	3	0	2	4
18PDH102T	Management Principles for Engineers	2	0	0	2
18PDM201L	Competencies in Social Skills	0	0	2	0
18PDM203L	Entrepreneurial Skill Development				
Total Learning Credits					24

Semester - IV					
Code	Course Title	Hours/ Week			C
		L	T	P	
18MAB204T	Probability and Queueing Theory	3	1	0	4
18CSS202J	Computer Communications	2	0	2	3
18CSC204J	Design and Analysis of Algorithms	3	0	2	4
18CSC205J	Operating Systems	3	0	2	4
18CSC206J	Software Engineering and Project Management	3	0	2	4
18CSC207J	Advanced Programming Practice	3	0	2	4
18CSC208L	Competitive Professional Skills-I	0	0	2	1
18PDH103T	Social Engineering	2	0	0	2
18PDM202L	Critical and Creative Thinking Skills	0	0	2	0
18PDM204L	Business Basics for Entrepreneurs				
18CYM101T	Environmental Science	1	0	0	0
Total Learning Credits					26

Semester - V					
Code	Course Title	Hours/ Week			C
		L	T	P	
18MAB302T	Discrete Mathematics for Engineers	3	1	0	4
18CSC301T	Formal Language and Automata	3	0	0	3
18CSC302J	Computer Networks	3	0	2	4
18CSC208L	Competitive Professional Skills-I	0	0	2	1
	Professional Elective – 1	3	0	0	3
	Professional Elective – 2	3	0	0	3
	Open Elective – 1	3	0	0	3
18CSP101L	Massive Open Online Course - I	0	0	2	1
18CSP102L	Industrial Training-I				
18CSP103L	Seminar - I				
18PDM301L	Analytical and Logical Thinking Skills	0	0	2	0
18PDM302L	Entrepreneurship Management	1	0	0	0
18LEM109T	Indian Traditional Knowledge				
Total Learning Credits					22

Semester - VI					
Code	Course Title	Hours/ Week			C
		L	T	P	
18CSC303J	Database Management Systems	3	0	2	4
18CSC304J	Compiler Design	3	0	2	4
18CSC305J	Artificial Intelligence	3	0	2	4
18CSC350T	Comprehension	0	1	0	1
18CSC307L	Competitive Professional Skills-III	0	0	2	1
	Professional Elective – 3	3	0	0	3
	Professional Elective – 4	3	0	0	3
	Open Elective – 2	3	0	0	3
18CSP104L	Massive Open Online Course - II	0	0	2	1
18CSP105L	Industrial Training-II				
18CSP106L	Seminar - II				
18PDH201T	Employability Skills and Practices	0	0	2	1
18LEM110L	Indian Art Form	0	0	2	0
Total Learning Credits					25

Semester - VII					
Code	Course Title	Hours/ Week			C
		L	T	P	
	Professional Elective – 5	3	0	0	3
	Professional Elective – 6	3	0	0	3
	Open Elective – 3	3	0	0	3
18CSP107L	Minor Project	0	0	6	3
18CSP108L	Internship (4-6 weeks)				
Total Learning Credits					12

Semester - VIII					
Code	Course Title	Hours/ Week			C
		L	T	P	
18CSP109L	Project	0	0	20	10
18CSP110L	Semester Internship				
Total Learning Credits					10