ACADEMIC CURRICULA

UNDERGRADUATE DEGREE PROGRAMMES

Bachelor of Technology

(B.Tech. - Four Years)

(New Programmes)

Regulations 2018

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(Revised in March 2019)

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

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

Kattankulathur, Kancheepuram District 603203, Tamil Nadu, India

3. B.Tech. in Computer Science and Engineering with Specialization in Blockchain Technology

3. (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*

3. (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 be able to explore recent technological developments related to Systems Engineering.*
PEO - 6	*Graduates will have the ability to explore research areas and produce outstanding contribution in various areas of Systems Engineering.*

3. (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*
PEO - 6	*M*	*H*	*H*	*H*	*H*

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

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

	Program Learning Outcomes (PLO)														
	Graduate Attributes (GA)												Program Specific Outcomes (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
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*	*L*	*L*	*H*	*H*	*L*	*L*	*L*	*L*	*L*	*H*	*H*	*H*	*H*	*H*
PEO - 6	*L*	*H*	*H*	*H*	*H*	*H*	*H*	*L*	*L*	*L*	*L*	*L*	*H*	*H*	*L*

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

PSO – Program Specific Outcomes (PSO)

PSO - 1	*Ability to apply the techniques and tools of Block chain Technology*
PSO - 2	*Create new Algorithms and techniques with Block chain concepts*
PSO - 3	*Ability to Develop systems involving Block chain fundamentals*

3. (e) Program Structure: B.Tech. in Computer Science and Engineering with Specialization in Blockchain Technology

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
18CSE332T	Distributed Systems and Applications	3	0	0	3
18CSE333J	Big Data Tools and Techniques for Blockchain	2	0	2	3
18CSE334T	Blockchain using Cryptography	3	0	0	3
18CSE335T	Principles of Cryptography	3	0	0	3
18CSE431J	Distributed Ledger Technology	2	0	2	3
18CSE432T	Smart Contracts and Application Development	3	0	0	3
18CSE433T	Trust based computing	3	0	0	3
18CSE434J	Web3 Development	2	0	2	3
18CSE435J	Advanced Cryptography	2	0	2	3
	Total Learning Credits				**18**

6. Open Elective Courses (O)
(Any 3 Open Elective Courses)

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				**09**

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)

Code	Course Title	L	T	P	C
18PDM101L	Professional Skills and Practices	0	0	2	0
18PDM201L	Competencies in Social Skills	0	0	2	0
18PDM203L	Entrepreneurial Skill Development				
18PDM202L	Critical and Creative Thinking Skills	0	0	2	0
18PDM204L	Business Basics for Entrepreneurs				
18PDM301L	Analytical and Logical Thinking Skills	0	0	2	0
18PDM302L	Entrepreneurship Management				
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

8. Mandatory Courses (M)

Course Code	Course Title	Hours/ Week L	T	P	C
18GNM102L	NSS				
18GNM103L	NCC	0	0	2	0
18GNM104L	NSO				
18LEM109T	Indian Traditional Knowledge	1	0	0	0
18LEM110L	Indian Art Form	0	0	2	0
18CYM101T	Environmental Science	1	0	0	0

3. (f) Program Articulation:B.Tech. in Computer Science and Engineering with Specialization in Blockchain Technology

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	L	H	H
18CSC201J	Data Structures and Algorithms	H	H	H	H	M	L	L	M	H	M	M	H	L	H	H
18CSC202J	Object Oriented Design and Programming	H	H	H	H	H	M	L	M	H	H	M	H	L	H	H
18CSC203J	Computer Organization and Architecture	H	M	H	M	L	L	L	M	L	L	L	M	H	M	M
18CSC204J	Design and Analysis of Algorithms	H	H	H	H	M	M	L	M	M	M	M	H	L	H	H
18CSC205J	Operating Systems	H	H	H	H	H	M	L	M	H	M	M	H	H	H	M
18CSC206J	Software Engineering and Project Management	H	H	H	H	H	H	H	H	H	H	H	H	L	H	M
18CSC207J	Advanced Programming Practice	H	H	M	M	H	L	L	M	H	M	L	H	L	H	H
18CSC301T	Formal Language and Automata	H	H	H	H	L	L	L	L	M	M	L	H	H	H	H
18CSC302J	Computer Networks	H	H	H	H	H	M	L	M	H	M	M	H	H	H	M
18CSC303J	Database Management Systems	H	H	H	H	H	M	L	M	H	M	M	H	H	H	M
18CSC304J	Compiler Design	H	H	H	H	M	L	L	L	M	M	L	H	H	H	H
18CSC305J	Artificial Intelligence	H	H	H	H	M	M	L	L	M	M	L	H	H	H	H
18CSC208L	Competitive Professional Skills – I	H	H	H	H	H	L	L	M	H	H	M	H	H	H	H
18CSC306L	Competitive Professional Skills - II	H	H	H	H	H	L	L	M	H	H	M	H	H	H	H
18CSC307L	Competitive Professional Skills - III	H	H	H	H	H	L	L	M	H	H	M	H	H	H	H
18CSE332T	Distributed Systems and Applications	H	H	H	M	H	M	L	M	H	M	L	H	L	H	H
18CSE333J	Big Data Tools and Techniques for Blockchain	H	H	H	H	H	M	L	M	H	M	L	H	L	H	H
18CSE334T	Blockchain using Cryptography	H	H	H	H	M	M	L	M	H	M	M	H	L	H	H
18CSE335T	Principles of Cryptography	H	H	H	M	H	M	L	M	H	M	M	H	L	H	H
18CSE431J	Distributed Ledger Technology	H	H	H	H	H	H	L	M	H	M	M	H	M	H	H
18CSE432T	Smart Contracts and Application Development	H	H	H	H	M	M	L	M	H	M	L	H	M	H	H
18CSE433T	Trust based computing	H	H	H	H	H	M	M	H	H	M	M	H	M	H	H
18CSE434J	Web3 Development	H	H	H	H	H	M	L	M	H	M	L	H	M	H	H
18CSE435J	Advanced Cryptography	H	H	H	H	H	M	L	M	H	M	M	H	M	H	H
18CSP101L	Massive Open Online Course - I	H	M	M	M	M	M	M	M	H	H	H	M	H	H	H
18CSP102L	Industrial Training-I	H	M	M	M	M	M	M	M	H	H	H	M	H	H	H
18CSP103L	Seminar - I	H	M	M	M	M	M	M	M	H	H	H	M	H	H	H
18CSP104L	Massive Open Online Course - II	H	M	M	M	M	M	M	M	H	H	H	M	H	H	H
18CSP105L	Industrial Training-II	H	M	M	M	M	M	M	M	H	H	H	M	H	H	H
18CSP106L	Seminar - II	H	M	M	M	M	M	M	M	H	H	H	M	H	H	H
18CSP107L	Minor Project	H	H	H	H	H	M	M	H	H	H	H	H	H	M	M
18CSP108L	Internship (4-6 weeks)	H	H	H	H	H	M	M	H	H	H	H	H	H	M	M
18CSP109L	Project	H	H	H	H	H	M	M	H	H	H	H	H	H	M	M
18CSP110L	Semester Internship	H	H	H	H	H	M	M	H	H	H	H	H	H	M	M
	Program Average	H	H	M	H	M	L	M	L	M	M	M	H	M	M	M

3. (g) Implementation Plan: B.Tech. in Computer Science and Engineering with Specialization in Blockchain Technology

Semester - I

Code	Course Title	Hours/ Week L	T	P	C
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 L	T	P	C
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
18GNM10XL	NCC / NSS / NSO	0	0	2	0
	Total Learning Credits				21

Semester - III

Code	Course Title	Hours/ Week L	T	P	C
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 L	T	P	C
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 L	T	P	C
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
18CSC306L	Competitive Professional Skills - II	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				
18LEM109T	Indian Traditional Knowledge	1	0	0	0
	Total Learning Credits				22

Semester - VI

Code	Course Title	Hours/ Week L	T	P	C
18CSC303J	Database Management Systems	3	0	2	4
18CSC304J	Compiler Design	3	0	2	4
18CSC305J	Artificial Intelligence	3	0	2	4
18CSC307L	Competitive Professional Skills - III	0	0	2	1
18CSC350T	Comprehension	0	1	0	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 L	T	P	C
	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 L	T	P	C
18CSP109L	Project	0	0	20	10
18CSP110L	Semester Internship				
	Total Learning Credits				10