ACADEMIC CURRICULA

UNDERGRADUATE/ INTEGRATED POST GRADUATE DEGREE PROGRAMMES

(With exit option of Diploma)

(Choice Based Flexible Credit System)

Regulations 2021

Volume – 1

(Revised on July 2024)

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

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

Kattankulathur, Chengalpattu District 603203,

Tamil Nadu, India

23. B.Tech. in Computer Science and Engineering with Specialization in Computer Networking

23. (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 Identify and address the Knowledge, Professional Skills, Professional Aptitude in the field of Networking

23. (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 possess skills to design and maintain computer and communication systems.
PEO – 5	Graduates will have the ability to develop tools incorporating the skills acquired in computer networking and its related domains

23. (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	3	-	-	-	1
PEO - 2	-	-	2	-	-
PEO - 3	-	3	3	-	-
PEO - 4	-	-	-	2	3
PEO - 5	-	-	-	3	

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

23. (d) Mapping Program Educational Objectives (PEO) to Program Outcomes (PO)

	Program Outcomes (PO)												Program Specific Outcomes (PSO)		
	1	2	3	4	5	6	7	8	9	10	11	12	PSO-1	PSO-2	PSO-3
	Engineering Knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern Tool Usage	The engineer and society	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO-1	PSO-2	PSO-3
PEO - 1	3	-	-	1	-	2	-	3	2	3	-	-	-	-	2
PEO - 2	-	2	2	-	3	-	3	2	-	-	-	-	2	-	-
PEO - 3	-	3	3	2	-	-	-	-	-	2	-	3	-	2	-
PEO - 4	-	2	3	-	-	3	2	-	2	-	2	2	-	2	-
PEO - 5	-	-	-	-	-	3	-	-	3	3	3	3	-	-	3

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

PSO – Program Specific Outcomes (PSO)

PSO - 1	To understand, analyze, design, and develop computing solutions by applying fundamental concepts of computer science and engineering.
PSO - 2	To apply computing principles, skills and practices to develop solutions using logical and reasoning skills, for real life problems.
PSO - 3	To identify and utilize hardware and software to develop network infrastructure for communications.

23. (e) Program Structure: B.Tech. in Computer Science and Engineering with Specialization in Computer Networking

Humanities & Social Sciences including Management Courses (H)

Course Code	Course Title	L	T	P	C
21LEH101T	Communicative English	2	1	0	3
21LEH102T	Chinese				
21LEH103T	French				
21LEH104T	German				
21LEH105T	Japanese	2	1	0	3
21LEH106T	Korean				
21LEH107T	Spanish				
21LEH108T	Russian				
21GNH101J	Philosophy of Engineering	1	0	2	2
21PDH209T [1]	Social Engineering	2	0	0	2
21GNH401T	Behavioral Psychology	2	1	0	3
				Total Credits	13

Engineering Science Courses (S)

Course Code	Course Title	L	T	P	C
21EES101T	Electrical and Electronics Engineering	3	1	0	4
21MES101L [1]	Basic Civil and Mechanical Workshop	0	0	4	2
21MES102L [1]	Engineering Graphics and Design	0	0	4	2
21CSS101J	Programming for Problem Solving	3	0	2	4
21CSS201T	Computer Organization and Architecture	3	1	0	4
21DCS201P [1]	Design Thinking and Methodology	1	2	0	3
21CSS303T	Data Science	2	0	0	2
				Total Credits	21

Professional Elective Courses (E)
(Any 8 Courses)

Course Code	Course Title	L	T	P	C
21CSE253T	Internet of Things	2	1	0	3
21CSE273T	Distributed Operating Systems	2	1	0	3
21CSE274T	Pervasive Computing	2	1	0	3
21CSE347T	Network Protocols and Programming	2	1	0	3
21CSE348T	Network Routing Algorithms	2	1	0	3
21CSE349T	Optical Networks	2	1	0	3
21CSE350T	Principles of Cloud Computing	2	1	0	3
21CSE357T	Distributed Computing	2	1	0	3
21CSE360T	High Performance Computing	2	1	0	3
21CSE364T	Data Centric Networking and System Design	2	1	0	3
21CSE456T	Software Defined Networks	2	1	0	3
21CSE457T	Service Oriented Architecture	2	1	0	3
21CSE458T	Wireless and Mobile Communication	2	1	0	3
21CSE459T	Wireless Sensor Networks	2	1	0	3
21CSE466T	Network Design and Management	2	1	0	3
21CSE450T	Network Security	2	1	0	3
				Total Credits	24

Project Work, Seminar, Internship in Industry / Higher Technical Institutions (P)

Course Code	Course Title	L	T	P	C
21GNP301L [1]	Community Connect	0	0	2	1
21CSP302L [1]	Project	0	0	6	3
21CSP303T [1]	MOOC	3	0	0	
21CSP401L	Major Project	0	0	30	15
21CSP402L	Major Project	0	0	20	10
21CSP403L	Internship#	0	0	10	5
				Total Credits	19

Basic Science Courses (B)

Course Code	Course Title	L	T	P	C
21PYB102J	Semiconductor Physics and Computational Methods	3	1	2	5
21CYB101J	Chemistry	3	1	2	5
21MAB101T	Calculus and Linear Algebra	3	1	0	4
21MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4
21MAB206T	Numerical Methods and Analysis	3	1	0	4
21MAB204T	Probability and Queueing Theory	3	1	0	4
21MAB302T	Discrete Mathematics	3	1	0	4
21BTB102T	Introduction to Computational Biology	2	0	0	2
				Total Credits	32

Professional Core Courses (C)

Course Code	Course Title	L	T	P	C
21CSC101T	Object Oriented Design and Programming	2	1	0	3
21CSC201J	Data Structures and Algorithms	3	0	2	4
21CSC202J	Operating Systems	3	0	2	4
21CSC203P [1]	Advanced Programming Practice	3	1	0	4
21CSC204J	Design and Analysis of Algorithms	3	0	2	4
21CSC205P [1]	Database Management Systems	3	1	0	4
21CSC206T	Artificial Intelligence	2	1	0	3
21CSC301T	Formal Language and Automata	3	0	0	3
21CSC302J	Computer Networks	3	0	2	4
21CSC303J	Software Engineering and Project Management	2	0	2	3
21CSC311J	Wireless Networks	2	0	2	3
21CSC312J	Mobile Adhoc Networks	2	0	2	3
				Total Credits	42

Open Elective Courses (O)
(Any 3 courses)

Course Code	Course Title	L	T	P	C
21CSO351T	Web Programming	2	1	0	3
21CSO352T	Python Programming	2	1	0	3
21CSO353T	Mobile Application Development	2	1	0	3
21CSO354T	Data Analytics	2	1	0	3
				Total Credits	09

Non Credit Courses (M)

Course Code	Course Title	L	T	P	C
21PDM101L [1]	Professional Skills and Practices	0	0	2	
21PDM102L [1]	General Aptitude	0	0	2	
21PDM201L [1]	Verbal Reasoning	0	0	2	
21PDM202L [1]	Critical and Creative Thinking Skills	0	0	2	0
21PDM301L [1]	Analytical and Logical Thinking Skills	0	0	2	
21PDM302L [1]	Employability Skills and Practices	0	0	2	
21CYM101T [1]	Environmental Science	1	0	0	0
21LEM101T [1]	Constitution of India	1	0	0	0
21LEM102T [1]	Universal Human Values – Introduction	1	0	0	0
21LEM201T [1]	Professional Ethics	1	0	0	0
21LEM202T [1]	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	2	1	0	3
21LEM301T [1]	Indian Art Form	1	0	0	0
21LEM302T [1]	Indian Traditional Knowledge	1	0	0	0
21GNM101L [1]	Physical and Mental Health using Yoga	0	0	2	0
21GNM102L [1]	National Service Scheme				

21GNM103L [1]	National Cadet Corps		
21GNM104L [1]	National Sports Organization		
		Total Credits	**03**

23. (f) Programme Articulation: B.Tech. in Computer Science and Engineering with Specialization in Computer Networking

Course Code	Course Name	Engineering Knowledge (PO1)	Problem Analysis (PO2)	Design/development of solutions (PO3)	Conduct investigations of complex problems (PO4)	Modern Tool Usage (PO5)	The engineer and society (PO6)	Environment & Sustainability (PO7)	Ethics (PO8)	Individual & Team Work (PO9)	Communication (PO10)	Project Mgt. & Finance (PO11)	Life Long Learning (PO12)	PSO-1	PSO-2	PSO-3
21CSS101J	Programming for Problem Solving	2	3	-	-	-	-	-	-	-	-	-	2	-	3	-
21CSS303T	Data Science	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
21CSS201T	Computer Organization and Architecture	3	2	-	-	-	-	-	-	-	-	-	-	1	2	1
21CSC201J	Data Structures and Algorithms	2	3	3	1	-	-	-	-	-	-	-	-	1	1	2
21CSC101T	Object Oriented Design and Programming	-	2	2	-	2	-	-	-	-	-	-	3	-	2	2
21CSC204J	Design and Analysis of Algorithms	2	1	2	1	-	-	-	-	-	3	-	3	3	1	-
21CSC202J	Operating Systems	3	3	3	2	-	-	-	-	-	-	-	3	2	-	-
21CSC303J	Software Engineering and Project Management	-	3	2	-	-	-	-	-	2	-	2	-	3	-	-
21CSC203P	Advanced Programming Practice	3	2	2	1	2	-	-	-	1	-	-	-	2	-	-
21CSC301T	Formal Language and Automata	2	2	2	-	-	-	-	-	-	-	-	-	-	3	-
21CSC302J	Computer Networks	3	-	-	2	3	-	-	-	-	-	-	-	1	-	-
21CSC205P	Database Management Systems	3	2	2	-	-	-	-	-	-	-	-	-	2	1	-
21CSC206T	Artificial Intelligence	1	2	3	-	-	-	-	-	-	-	-	-	1	2	-
21CSC311J	Wireless Networks	3		2			1									3
21CSC312J	Mobile Adhoc Networks	3								2						3
21CSE253T	Internet of Things	1	2	1	3	1	2	-	-	-	-	-	-	-	-	2
21CSE273T	Distributed Operating Systems	2		3		3								2		2
21CSE274T	Pervasive Computing	3													2	
21CSE347T	Network Protocols and Programming			3		3					2					3
21CSE348T	Network Routing Algorithms			3		3					2					3
21CSE349T	Optical Networks					3								3		
21CSE350T	Principles of Cloud Computing	3			2	2								3		
21CSE357T	Distributed Computing	-	-	2	2	2	-	-	-	-	-	-	-	2	-	-
21CSE360T	High Performance Computing	1	1	1	1	2	-	-	-	-	-	-	-	-	3	-
21CSC364T	Data Centric Networking and System Design		2		3									3		
21CSE456T	Software Defined Networks	1	1	1	3	1	2	-	-	-	-	-	-	2	-	
21CSE457T	Service Oriented Architecture	2	1	2	-	-	-	-	-	-	-	-	-	2	-	-
21CSE458T	Wireless and Mobile Communication	1	2	2	-	-	-	-	-	-	-	-	-	1	-	-
21CSE459T	Wireless Sensor Networks	1	2	2	-	-	-	-	-	-	-	-	-	1	-	-
21CSE466T	Network Design and Management	2	3		3									2		
21CSE450T	Network Security		2			3			1							3
21CSP302L	Project	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21CSP303T	MOOC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21CSP401L	Major Project	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
21CSP402L	Internship	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Program Average	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

23. (g) Implementation Plan: B.Tech. in Computer Science and Engineering with Specialization in Computer Networking

Semester – I

Course Code	Course Title	L	T	P	C
21LEH102T	Chinese				
21LEH103T	French				
21LEH104T	German				
21LEH105T	Japanese	2	1	0	3
21LEH106T	Korean				
21LEH107T	Spanish				
21LEH108T	Russian				
21GNH101J	Philosophy of Engineering	1	0	2	2
21MAB101T	Calculus and Linear Algebra	3	1	0	4
21CYB101J	Chemistry	3	1	2	5
21BTB102T	Introduction to Computational Biology	2	0	0	2
21CSS101J	Programming for Problem Solving	3	0	2	4
21MES101L [1]	Basic Civil and Mechanical Workshop	0	0	4	2
21PDM101L [1]	Professional Skills and Practices	0	0	2	0
21GNM101L [1]	Physical and Mental Health using Yoga				
21GNM102L [1]	National Service Scheme	0	0	2	0
21GNM103L [1]	National Cadet Corps				
21GNM104L [1]	National Sports Organization				
	Total Credits				**22**

Semester – II

Course Code	Course Title	L	T	P	C
21LEH101T	Communicative English	2	1	0	3
21MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4
21PYB102J	Semiconductor Physics and Computational Methods	3	1	2	5
21MES102L [1]	Engineering Graphics and Design	0	0	4	2
21EES101T	Electrical and Electronics Engineering	3	1	0	4
21CSC101T	Object Oriented Design and Programming	2	1	0	3
21CYM101T [1]	Environmental Science	1	0	0	0
21PDM102L [1]	General Aptitude	0	0	2	0
21LEM101T [1]	Constitution of India	1	0	0	0
	Total Credits				**21**

Semester – III

Course Code	Course Title	L	T	P	C
21MAB206T	Numerical Methods and Analysis	3	1	0	4
21DCS201P [1]	Design Thinking and Methodology	1	2	0	3
21CSS201T	Computer Organization and Architecture	3	1	0	4
21CSC201J	Data Structures and Algorithms	3	0	2	4
21CSC202J	Operating Systems	3	0	2	4
21CSC203P [1]	Advanced Programming Practice	3	1	0	4
21LEM201T [1]	Professional Ethics	1	0	0	0
21PDM201L [1]	Verbal Reasoning	0	0	2	0
	Total Credits				**23**

Semester – IV

Course Code	Course Title	L	T	P	C
21MAB204T	Probability and Queueing Theory	3	1	0	4
21CSC204J	Design and Analysis of Algorithms	3	0	2	4
21CSC205P [1]	Database Management Systems	3	1	0	4
21CSC206T	Artificial Intelligence	2	1	0	3
E	Professional Elective-I				3
21PDH209T [1]	Social Engineering	2	0	0	2
21PDM202L [1]	Critical and Creative Thinking Skills	0	0	2	0
21LEM202T [1]	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	2	1	0	3
	Total Credits				**23**

Semester – V

Course Code	Course Title	L	T	P	C
21MAB302T	Discrete Mathematics	3	1	0	4
21CSC301T	Formal Language and Automata	3	0	0	3
21CSC302J	Computer Networks	3	0	2	4
21CSC311J	Wireless Networks	2	0	2	3
E	Professional Elective – II				3
O	Open Elective – I				3
21GNP301L [1]	Community Connect	0	0	2	1
21PDM301L [1]	Analytical and Logical Thinking Skills	0	0	2	0
21LEM301T [1]	Indian Art Form	1	0	0	0
	Total Credits				**21**

Semester – VI

Course Code	Course Title	L	T	P	C
21CSS303T	Data Science	2	0	0	2
21CSC303J	Software Engineering and Project Management	2	0	2	3
21CSC312J	Mobile Adhoc Networks	2	0	2	3
E	Professional Elective – III				3
E	Professional Elective – IV				3
O	Open Elective – II				3
21CSP302L [1]	Project	0	0	6	3
21CSP303T [1]	MOOC	3	0	0	
21PDM302L [1]	Employability Skills and Practices	0	0	2	0
21LEM302T [1]	Indian Traditional Knowledge	1	0	0	0
	Total Credits				**20**

Semester – VII

Course Code	Course Title	L	T	P	C
21GNH401T	Behavioral Psychology	2	1	0	3
E	Professional Elective – V				3
E	Professional Elective – VI				3
E	Professional Elective – VII				3
E	Professional Elective – VIII				3
O	Open Elective –III				3
	Total Credits				**18**

Semester - VIII

Course Code	Course Title	L	T	P	C
21CSP401L	Major Project	0	0	30	15
21CSP402L	Major Project	0	0	20	10
21CSP403L	Internship#	0	0	10	5
	Total Credits				**15**

#Students have to register either 21CSP401L or 21CSP402L and 21CSP403L both in eighth semester

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