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

22. B.Tech. in Computer Science and Engineering with Specialization in Cloud Computing

22. (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*

22. (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 Computer Science and Engineering with Cloud computing discipline knowledge of computing, networking, and intelligent storage system.*

22. (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

22. (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			
	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	2	2
PEO - 2	-	2	2	-	3	-	3	2	-	-	-	-	2	2	2
PEO - 3	-	3	3	2	-	-	-	-	-	2	-	3	2	3	2
PEO - 4	-	2	3	-	-	3	2	-	2	-	2	2	3	3	3
PEO - 5	-	-	-	-	-	3	-	-	3	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	*Ability to Develop an application and integrate in Cloud Computing Platform*

22. (e) Program Structure: B.Tech. in Computer Science and Engineering with Specialization in Cloud Computing

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**

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				
21GNM102L [1]	National Service Scheme	0	0	2	0
21GNM103L [1]	National Cadet Corps				
21GNM104L [1]	National Sports Organization				
	Total Credits				**03**

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
21CSC316J	Cloud Architecture and Protocols	2	0	2	3
21CSC314P [1]	Big Data Essentials	2	1	0	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**

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**

Professional Elective Courses (E) *(Any 8 Courses)*		Hours / Week			
Course Code	Course Title	L	T	P	C
21CSE261T	Fundamentals of Cloud Computing	2	1	0	3
21CSE262T	Communication Systems Engineering	2	1	0	3
21CSE253T	Internet of Things	2	1	0	3
21CSE263T	Digital Communication Systems	2	1	0	3
21CSE329T	Service Oriented Architecture and Microservices	2	1	0	3
21CSE330T	Cloud Architecture	2	1	0	3
21CSE363T	Cloud Services Solution Architect	2	1	0	3
21CSE364T	Data Centric Networking and System Design	2	1	0	3
21CSE354T	Full Stack Web Development	2	1	0	3
21CSE355T	Data Mining and Analytics	2	1	0	3
21CSE356T	Natural Language Processing	2	1	0	3
21CSE357T	Distributed Computing	2	1	0	3
21CSE358T	Network Security and Cryptography	2	1	0	3

Professional Elective Courses (E)		Hours / Week			
Course Code	Course Title	L	T	P	C
21CSE359T	Information Storage and Management	2	1	0	3
21CSE360T	High Performance Computing	2	1	0	3
21CSE461T	Cloud Security	2	1	0	3
21CSE463T	Cloud Strategy Planning and Management	2	1	0	3
21CSE464T	Fog Computing Analytics	2	1	0	3
21CSE465T	Cloud Application Development	2	1	0	3
21CSE466T	Network Design and Management	2	1	0	3
21CSE455T	Social Network Analysis	2	1	0	3
21CSE456T	Software Defined Networks	2	1	0	3
21CSE454T	Computer Vision	2	1	0	3
21CSE458T	Wireless and Mobile Communication	2	1	0	3
21CSE459T	Wireless Sensor Networks	2	1	0	3
21CSE460T	Network Protocols and Algorithms	2	1	0	3
				Total Credits	**24**

22. (f) Programme Articulation: B.Tech. in Computer Science and Engineering with Specialization in Cloud Computing

Course Code	Course Name	Program Outcomes (PO)												PSO		
		1 Engineering Knowledge	2 Problem Analysis	3 Design/development of solutions	4 Conduct investigations of complex problems	5 Modern Tool Usage	6 The engineer and society	7 Environment & Sustainability	8 Ethics	9 Individual & Team Work	10 Communication	11 Project Mgt. & Finance	12 Life Long Learning	1 PSO-1	2 PSO-2	3 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	-
21CSC316J	Cloud Architecture and Protocols	3	2	-	-	3	-	-	-	-	-	-	-	2	-	3
21CSC314P	Big Data Essentials	2	-	-	3	3	-	-	-	-	-	-	-		-	3
21CSE261T	Fundamentals of Cloud Computing	3	2	-	2	2	-	-	-	-	-	-	-	3	-	3
21CSE262T	Communication Systems Engineering	3	-	-	3	-	-	-	-	-	-	-	-	3	-	
21CSE253T	Internet of Things	1	2	1	3	1	2	-	-	-	-	-	-	-	-	2
21CSE263T	Digital Communication Systems	2	3	-	-	-	-	-	-	-	-	-	-	3	-	-
21CSE329T	Service Oriented Architecture and Microservices	2	3	2	-	-	-	-	-	-	-	-	-	3	-	-
21CSE330T	Cloud Architecture	3	-	-	2	-	-	-	-	-	-	-	-	-	-	3
21CSE363T	Cloud Services Solution Architect	2	3	-	3	-	-	-	-	-	-	-	-	-	-	3
21CSE364T	Data Centric Networking and System Design	-	2	-	3	-	-	-	-	-	-	-	-	-	-	3
21CSE354T	Full Stack Web Development	-	2	2	-	2	-	-	-	-	-	-	-	3	-	2
21CSE355T	Data Mining and Analytics	1	2	-	-	3	-	-	-	-	-	-	-	2	-	-
21CSE356T	Natural Language Processing	3	3	2	3	3	-	-	-	-	-	-	-	2	-	-
21CSE357T	Distributed Computing	-	-	2	2	2	-	-	-	-	-	-	-	2	-	-
21CSE358T	Network Security and Cryptography	2	3	2	-	2	-	-	-	-	-	-	-	2	-	-
21CSE359T	Information Storage and Management	-	3	3	-	1	-	-	-	-	-	-	-	1	2	-
21CSE360T	High Performance Computing	1	1	1	1	2	-	-	-	-	-	-	-	-	3	-
21CSE461T	Cloud Security	3	2	3	-	-	-	-	-	-	-	-	-	-	-	3
21CSE463T	Cloud Strategy Planning and Management	3	3	-	3	-	-	-	-	-	-	-	-	-	-	3
21CSE464T	Fog Computing Analytics	3	-	-	-	3	-	-	-	-	-	-	-	-	-	3
21CSE465T	Cloud Application Development	3	-	3	-	2	-	-	-	-	-	-	-	-	-	3
21CSE466T	Network Design and Management	2	3	-	3	-	-	-	-	-	-	-	-	2		
21CSE455T	Social Network Analysis	2	3	2	3	3	-	-	-	-	-	-	-	-	2	2
21CSE456T	Software Defined Networks	1	1	1	3	1	2	-	-	-	-	-	-	2	-	
21CSE454T	Computer Vision	2	2	1	1	1	-	-	-	-	-	-	-	3	-	2
21CSE458T	Wireless and Mobile Communication	1	2	2	-	-	-	-	-	-	-	-	-	1	-	-
21CSE459T	Wireless Sensor Networks	1	2	2	-	-	-	-	-	-	-	-	-	1	-	-
21CSE460T	Network Protocols and Algorithms	1	2	1	-	-	-	-	-	-	-	-	-	1	-	-
21GNP301L	Community Connect	-	-	-	-	-	-	-	-	3	-	-	3	-	-	-
21CSP302L	Project	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3
21CSP303T	MOOC	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	Major Project	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
21CSP403L	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

22. (g) Implementation Plan: B.Tech. in Computer Science and Engineering with Specialization in Cloud Computing

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
21CSC314P [1]	Big Data Essentials	2	1	0	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
21CSC316J	Cloud Architecture and Protocols	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

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

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

Kattankulathur, Chengalpattu District 603203, Tamil Nadu, India