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

28. B.Tech. in Computer Science and Engineering with Specialization in Internet of Things

28. (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 skilled IoT engineers to emerge as independent entrepreneurs and future leaders.*

28. (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, eco-friendly and socially responsible solution providers in Computer Science and other engineering disciplines.*
PEO – 5	*Graduates will be able to demonstrate their leadership abilities with IoT skills while addressing various social issues in an industrial, entrepreneurial, and research setting.*

28. (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	-	3	1	-	-
PEO - 3	3	-	3	-	-
PEO - 4	-	2	-	3	-
PEO - 5	-	-	-	3	3

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

28. (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	-	-	-	-	-
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	3
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 utilize cutting-edge techniques in IoT concepts for societal needs with promoting lifelong learning & research for a forward-thinking profession.*

28. (e) Program Structure: B.Tech. in Computer Science and Engineering with Specialization in Internet of Things

Humanities & Social Sciences including Management Courses (H)

Course Code	Course Title	Hours / Week L	T	P	C
21LEH101T	Communicative English	2	1	0	3
21LEH102T	Chinese	2	1	0	3
21LEH103T	French				
21LEH104T	German				
21LEH105T	Japanese				
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	Hours / Week L	T	P	C
21CSS101J	Programming for Problem Solving	3	0	2	4
21MES101L [1]	Basic civil and Mechanical Workshop	0	0	4	2
21MES102L [1]	Engineering Graphics and Design	0	0	4	2
21EES101T	Electrical and Electronics Engineering	3	1	0	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	Hours / Week L	T	P	C
21PDM101L [1]	Professional Skills and Practices	0	0	2	0
21PDM102L [1]	General Aptitude	0	0	2	
21PDM201L [1]	Verbal Reasoning	0	0	2	
21PDM202L [1]	Critical and Creative Thinking Skills	0	0	2	
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

Basic Science Courses (B)

Course Code	Course Title	Hours / Week 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 Queuing 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	Hours / Week 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
21CSC315J	Fog Computing	2	0	2	3
21CSC313J	Cloud Computing for IoT	2	0	2	3
				Total Credits	42

Open Elective Courses (O)
(Any 3 courses)

Course Code	Course Title	Hours / Week 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	Hours / Week 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)*					
Course Code	Course Title	Hours / Week			
		L	T	P	C
21CSE264T	*Introduction to IoT: Sensors, Actuators and Microcontrollers*	*2*	*1*	*0*	*3*
21CSE265T	*Introduction to Embedded Programming and Embedded OS*	*3*	*0*	*0*	*3*
21CSE266T	*Internet of Things Architecture and Protocols*	*3*	*0*	*0*	*3*
21CSE365T	*Machine Learning for IoT*	*2*	*1*	*0*	*3*
21CSE366T	*Introduction to Cloud Application Development for IoT*	*2*	*1*	*0*	*3*
21CSE367T	*IoT Forensics*	*2*	*1*	*0*	*3*
21CSE368J	*Network Programming for IoT*	*2*	*0*	*2*	*3*
21CSE369J	*Introduction to Security of Internet of Things and Cyber-Physical Systems*	*2*	*0*	*2*	*3*

Professional Elective Courses (E)					
Course Code	Course Title	Hours / Week			
		L	T	P	C
21CSE370J	*Data Visualization for IoT*	*2*	*0*	*2*	*3*
21CSE371J	*IoT Techniques, Tools, and its application*	*2*	*0*	*2*	*3*
21CSE467T	*Advanced Database Systems*	*2*	*1*	*0*	*3*
21CSE468T	*Edge Computing*	*2*	*1*	*0*	*3*
21CSE469T	*Energy Management for IoT devices*	*2*	*1*	*0*	*3*
21CSE470T	*Applied Software Techniques in IoT Engineering*	*2*	*1*	*0*	*3*
21CSE471T	*Fundamentals of Cyber security*	*2*	*1*	*0*	*3*
21CSE472J	*Full Stack Development for IoT*	*2*	*0*	*2*	*3*
21CSE473T	*Deep Learning for IoT*	*2*	*1*	*0*	*3*
21CSE474T	*IoT Privacy*	*2*	*1*	*0*	*3*
				Total Credits	**24**

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28. (f) Programme Articulation: B.Tech. in Computer Science and Engineering with Specialization in Internet of Things

Course Code	Course Name	Program Outcomes (PO)												PSO		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	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
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	-
21CSC315J	Fog Computing			3	2	2									2	3
21CSC313J	Cloud Computing for IoT		2			3									3	3
21CSE264T	Introduction to IoT: Sensors, Actuators and Microcontrollers			3	2									2	2	
21CSE265T	Introduction to Embedded Programming and Embedded OS			3	2									3	3	
21CSE266T	Internet of Things Architecture and Protocols		3	3										2	2	
21CSE365T	Machine Learning for IoT		2			3									3	3
21CSE366T	Introduction to Cloud Application Development for IoT			3	2										3	3
21CSE367T	IoT Forensics		3	3										2	2	
21CSE368J	Network Programming for IoT			2		3									3	3
21CSE369J	Introduction to Security of Internet of Things and Cyber-Physical Systems			3	2										3	3
21CSE370J	Data Visualization for IoT		3	3	2	2								2	2	
21CSE371J	IoT Techniques, Tools, and its application			2		3									3	3
21CSE467T	Advanced Database Systems			2	3									2	3	
21CSE468T	Edge Computing			3	2									3	3	
21CSE469T	Energy Management for IoT devices		3		2									2	3	
21CSE470T	Applied Software Techniques in IoT Engineering			2	3									2	3	
21CSE471T	Fundamentals of Cyber security			3	2										3	2
21CSE472J	Full Stack Development for IoT			3		2									3	3
21CSE473T	Deep Learning for IoT		3			3									3	3
21CSE474T	IoT Privacy			3					2						3	2
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	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

28. (g) Implementation Plan: B.Tech. in Computer Science and Engineering with Specialization in Internet of Things

Semester – I

Course Code	Course Title	Hours / Week L	T	P	C
21LEH101T	Communicative English	2	1	0	3
21MAB101T	Calculus and Linear Algebra	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
21CSS101J	Programming for Problem Solving	3	0	2	4
21CYM101T [1]	Environmental Science*	1	0	0	0
21PDM101L [1]	Professional Skills and Practices	0	0	2	0
21LEM101T [1]	Constitution of India	1	0	0	0
				Total Credits	22

Semester – II

Course Code	Course Title	Hours / Week L	T	P	C
21LEH102T	Chinese	2	1	0	3
21LEH103T	French				
21LEH104T	German				
21LEH105T	Japanese				
21LEH106T	Korean				
21LEH107T	Spanish				
21LEH108T	Russian				
21GNH101J	Philosophy of Engineering	1	0	2	2
21MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4
21CYB101J	Chemistry	3	1	2	5
21BTB102T	Introduction to Computational Biology	2	0	0	2
21CSC101T	Object Oriented Design and Programming	2	1	0	3
21MES101L [1]	Basic Civil and Mechanical Workshop	0	0	4	2
21PDM102L [1]	General Aptitude*	0	0	2	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	21

Semester – III

Course Code	Course Title	Hours / Week 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 Ethic	1	0	0	0
21PDM201L [1]	Verbal Reasoning	0	0	2	0
				Total Credits	23

Semester – IV

Course Code	Course Title	Hours / Week 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	Hours / Week 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
21CSC313J	Cloud Computing for IoT	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	Hours / Week L	T	P	C
21CSS303T	Data Science	2	0	0	2
21CSC303J	Software Engineering and Project Management	2	0	2	3
21CSC315J	Fog Computing	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

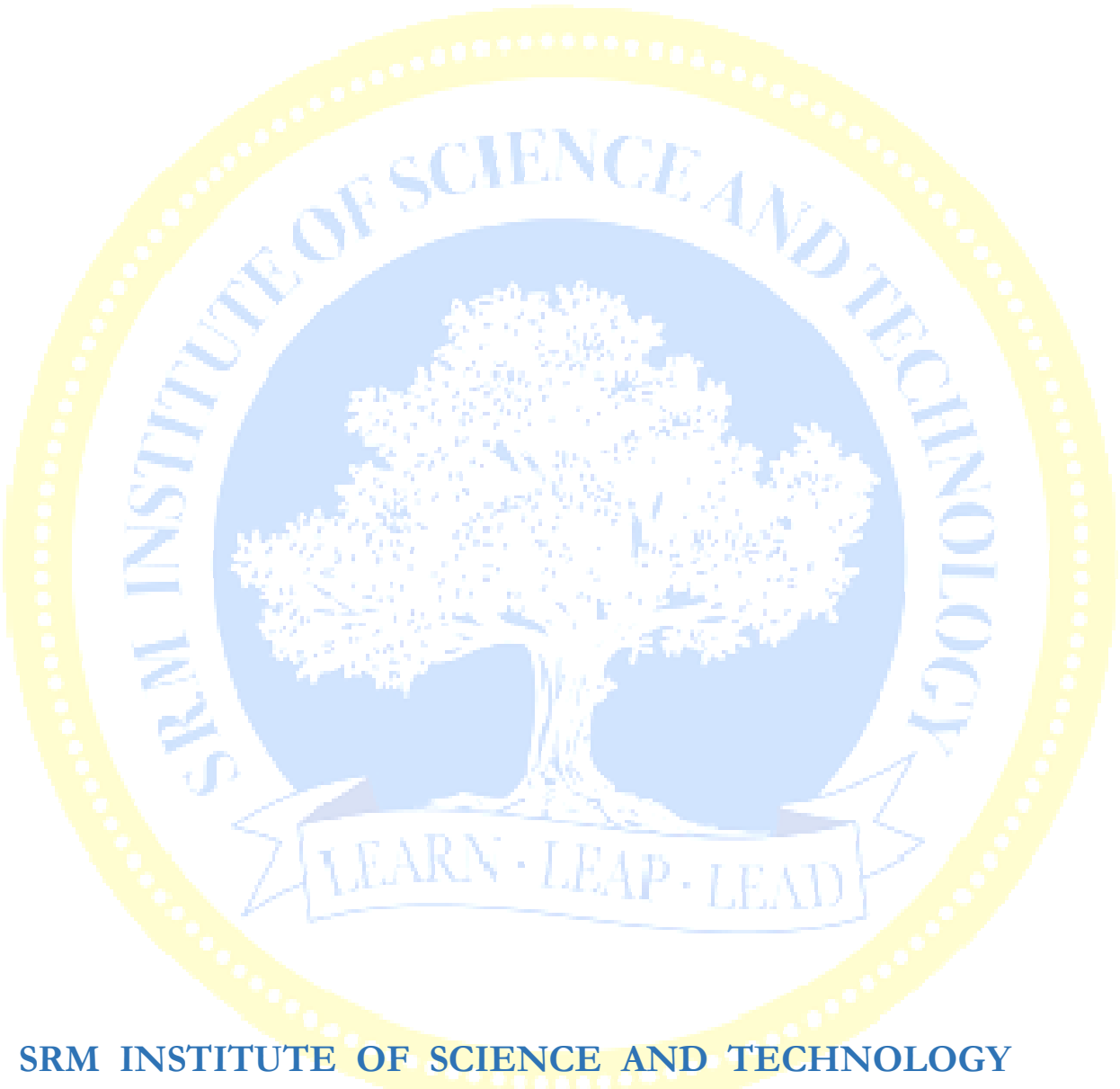
Semester – VII

Course Code	Course Title	Hours / Week 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	Hours / Week 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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(Deemed to be University u/s 3 of UGC Act, 1956)

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