

ACADEMIC CURRICULA
UNDERGRADUATE/ INTEGRATED
POST GRADUATE DEGREE
PROGRAMMES

(With exit option of Diploma)

(Choice Based Flexible Credit System)

Regulations 2021

Volume – 1

(Updated on July 2025)



SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

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

Kattankulathur, Chengalpattu District 603203,

Tamil Nadu, India

57. B.Tech. in Computer Science and Engineering (DevSecOps)

57. (a) Mission of the Department

Mission Stmt – 1	To provide world-class IT professionals with an industry-oriented and research-driven curriculum in emerging technologies such as DevOps, Cloud Computing, and Cybersecurity.
Mission Stmt – 2	To impart quality technical education that bridges the gap between academia and industry, fostering innovation, problem-solving, and entrepreneurship.
Mission Stmt – 3	To promote interdisciplinary learning and hands-on experience through project-based and research-oriented teaching in the field of secure software development and automation.
Mission Stmt – 4	To cultivate socially responsible and ethically strong professionals by nurturing leadership qualities, teamwork, and effective communication skills.
Mission Stmt – 5	To encourage lifelong learning and adaptability to evolving technological landscapes in DevSecOps and allied domains.

57. (b) Program Educational Objectives (PEO)

PEO – 1	Graduates will demonstrate strong foundational knowledge and technical expertise in emerging DevSecOps technologies such as containerization, system provisioning, configuration management, and continuous integration/deployment pipelines.
PEO – 2	Graduates will analyze, design, and implement secure and scalable cloud-native applications using automation tools, container orchestration platforms, and infrastructure as code (IaC) techniques.
PEO – 3	Graduates will engage in innovative research, project-based learning, and interdisciplinary problem-solving in the areas of software delivery automation, cybersecurity integration, and modern DevOps practices.
PEO – 4	Graduates will exhibit professional ethics, teamwork, leadership, and communication skills while working in collaborative DevOps and cybersecurity environments.
PEO – 5	Graduates will pursue lifelong learning by adapting to rapidly evolving technologies in DevSecOps, cloud computing, and secure software engineering through continuous upskilling and professional development.

57. (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	3	2	1	1
PEO - 2	2	3	3	2	2
PEO - 3	2	3	3	2	2
PEO - 4	1	2	2	3	2
PEO - 5	2	2	3	2	3

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

57. (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			
PEO - 1	3	2	2	2	3	-	-	-	-	1	1	2	3	3	-
PEO - 2	3	3	3	2	3	-	1	-	2	-	-	2	3	3	-
PEO - 3	3	3	3	3	3	1	-	2	2	1	1	3	3	2	-
PEO - 4	2	2	2	-	2	1	-	3	3	2	2	2	2	2	-
PEO - 5	2	2	2	-	3	--	1	-	2	-	-	3	3	3	-

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

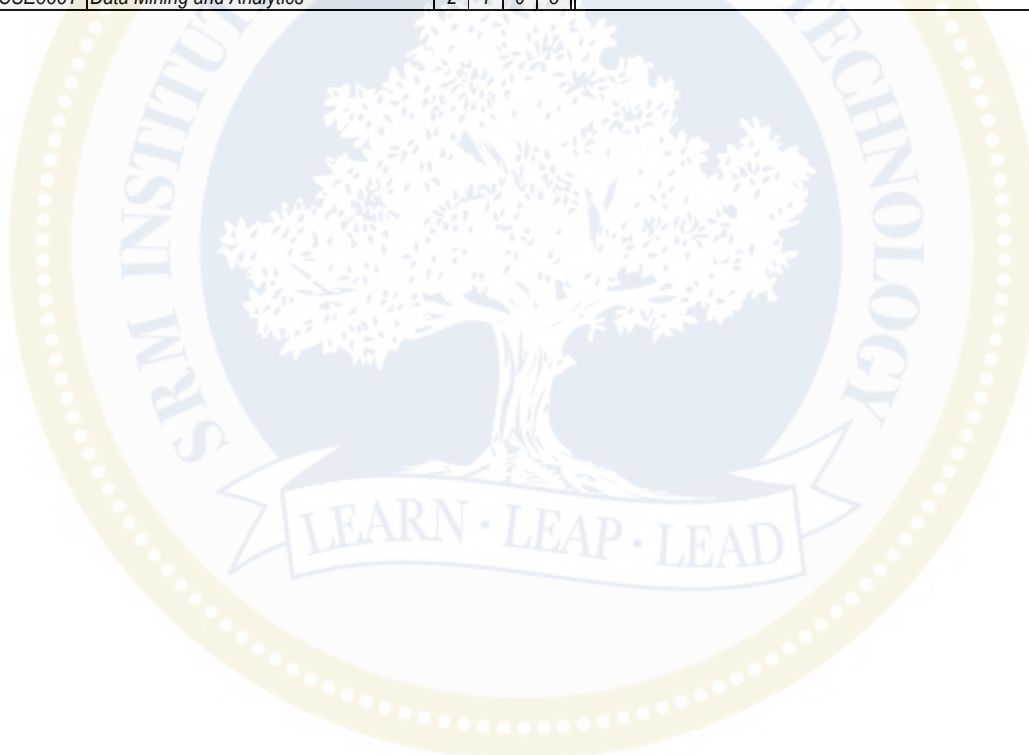
PSO – Program Specific Outcomes (PSO)

PSO - 1	Apply DevSecOps principles to design, build, and deploy secure, automated, and scalable software solutions using containerization, orchestration, and version control tools.
PSO - 2	Implement cloud infrastructure automation through Infrastructure as Code (IaC), continuous integration, and continuous deployment (CI/CD) practices ensuring reliability, performance, and security.

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

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
21GNH401TA	Behavioral Psychology	2	1	0	3
Total Credits					13
Engineering Science Courses (S)					
Course Code	Course Title	Hours / Week			
		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	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 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	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
21CSC320J	Containerization with Docker and Kubernetes	2	0	2	3
21CSC321J	Continuous Integration and Continuous Deployment in DevOps	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	
21CSP402L	Major Project	0	0	20	10
21CSP403L	Internship#	0	0	10	5
Total Credits					19

Professional Elective Courses (E) (Any 8 Courses)							Professional Elective Courses (E)						
Course Code	Course Title	Hours / Week					Course Code	Course Title	Hours / Week				
		L	T	P					L	T	P		
21CSE295P	Linux and scripting in DevOps	3	0	0	3		21CSE359T	Information Storage and Management	2	1	0	3	
21CSE298P	Essentials in Cloud and DevOps	3	0	0	3		21CSE402P ¹	Intelligent Systems for IoT Applications	2	1	0	3	
21CSE299P	DevOps Tools and Practices	3	0	0	3		21CSE462P	Software Containerization in DevOps	3	0	0	3	
21CSE306P ¹	Applied Generative AI	2	1	0	3		21CSE462T	Agile Structure and frameworks	3	0	0	3	
21CSE315P ¹	Data Orchestration and Management in Cloud Ecosystems	2	1	0	3		21CSE463P	System Provisioning and Configuration Management in DevOps	3	0	0	3	
21CSE369T	DevSecOps Essentials	3	0	0	3		21CSE464P	CI/CD Pipeline and Security	3	0	0	3	
21CSE379P	Source and Version Control	3	0	0	3		21CSE465P	Test Automation	3	0	0	3	
21CSE379T	Applied DevOps	3	0	0	3		21CSE461T	Cloud Security	2	1	0	3	
21CSE380P	DevSecOps: Integrating security into DevOps Practices	3	0	0	3		21CSE463T	Cloud Strategy Planning and Management	2	1	0	3	
21CSE381P	Orchestration and Security	3	0	0	3		21CSE465T	Cloud Application Development	2	1	0	3	
21CSE382P	Build, Release and Infrastructure Automation	3	0	0	3		21CSE455T	Social Network Analysis	2	1	0	3	
21CSE329T	Service Oriented Architecture and Microservices	2	1	0	3		21CSE456T	Software Defined Networks	2	1	0	3	
21CSE330T	Cloud Architecture	2	1	0	3		Total Credits						24
21CSE354T	Full Stack Web Development	2	1	0	3								
21CSE355T	Data Mining and Analytics	2	1	0	3								



57. (f) Programme Articulation: B.Tech. in Computer Science and Engineering (DevSecOps)

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	-
21CSC320J	Containerization with Docker and Kubernetes															
21CSC321J	Continuous Integration and Continuous Deployment in DevOps															
21CSE295P	Linux and scripting in DevOps															
21CSE298P	Essentials in Cloud and DevOps															
21CSE299P	DevOps Tools and Practices															
21CSE369T	DevSecOps Essentials															
21CSE379P	Source and Version Control															
21CSE379T	Applied DevOps															
21CSE380P	DevSecOps: Integrating security into DevOps Practices															
21CSE381P	Orchestration and Security															
21CSE382P	Build, Release and Infrastructure Automation															
21CSE329T	Service Oriented Architecture and Microservices	2	3	2	-	-	-	-	-	-	-	-	3	-	-	
21CSE330T	Cloud Architecture	3	-	-	2	-	-	-	-	-	-	-	-	-	3	
21CSE354T	Full Stack Web Development	-	2	2	-	2	-	-	-	-	-	-	3	-	2	
21CSE355T	Data Mining and Analytics	1	2	-	-	3	-	-	-	-	-	-	2	-	-	
21CSE359T	Information Storage and Management															
21CSE462P	Software Containerization in DevOps															
21CSE462T	Agile Structure and frameworks															
21CSE463P	System Provisioning and Configuration Management in DevOps															
21CSE464P	CICD Pipeline and Security															
21CSE465P	Test Automation															
21CSE461T	Cloud Security	3	2	3	-	-	-	-	-	-	-	-	-	-	3	
21CSE463T	Cloud Strategy Planning and Management	3	3	-	3	-	-	-	-	-	-	-	-	-	3	
21CSE465T	Cloud Application Development	3	-	3	-	2	-	-	-	-	-	-	-	-	3	
21CSE455T	Social Network Analysis	2	3	2	3	3	-	-	-	-	-	-	-	2	2	
21CSE456T	Software Defined Networks	1	1	1	3	1	2	-	-	-	-	-	2	-	-	
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	
21CSP402L	Major Project	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	
	Program Average	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

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

Semester – I						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
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	
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	0	0	2	0	
21GNM102L ¹	National Service Scheme					
21GNM103L ¹	National Cadet Corps					
21GNM104L ¹	National Sports Organization					
Total Credits 22						
Semester – III						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
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 – V						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21MAB302T	Discrete Mathematics	3	1	0	4	
21CSC301T	Formal Language and Automata	3	0	0	3	
21CSC302J	Computer Networks	3	0	2	4	
21CSC320J	Containerization with Docker and Kubernetes	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 – VII						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21GNH401TA	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 – II						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
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 – IV						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
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 – VI						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21CSS303T	Data Science	2	0	0	2	
21CSC303J	Software Engineering and Project Management	2	0	2	3	
21CSC321J	Continuous Integration and Continuous Deployment in DevOps	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 - VIII						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
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