

ACADEMIC CURRICULA

UNDERGRADUATE/ INTEGRATED POST GRADUATE DEGREE PROGRAMMES

(With Multiple Exit Options)

(Choice Based Flexible Credit System)

Regulations 2026

Volume – 1



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

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)
Kattankulathur, Chengalpattu District 603203, Tamil Nadu, India

B.Tech. - Electronics and Communication Engineering with Specialization in Data Science
1. (a) Mission of the Department / School

Mission Stmt – 1	To consistently uphold the highest standards of educational process aimed at imparting knowledge and skills related to electronic design and communication engineering fostering successful practicing engineers nationally and globally.
Mission Stmt – 2	To stay at the forefront of technological advancements and adapt our programs to provide cutting-edge learning experiences through collaborative research and innovation in electronics and communication and interdisciplinary fields through interaction with research institutes and industry to align with the evolving demand of society
Mission Stmt – 3	To attract qualified professionals in a rewarding way and enable them to foster the growth of individuals as good leaders, technocrats and entrepreneurs who are technically skilled and committed to ethical principles in their professional endeavours

1. (b) Program Educational Objectives (PEO)

PEO – 1	Establish themselves as successful and creative practicing professional engineers, both nationally and globally, in the related fields of Electronics and Communication Engineering.
PEO – 2	Apply the acquired knowledge and the skills in solving real-world engineering problems; develop novel technology and design products which are economically feasible and socially relevant.
PEO – 3	Develop an attitude of lifelong learning for sustained career advancement and adapt to the changing multidisciplinary profession.
PEO – 4	Demonstrate leadership qualities, effective communication skills, and to work in a team of enterprising people in the multidisciplinary and multicultural environment with strong adherence to professional ethics.

1. (c) Mission of the Department / School to Program Educational Objectives (PEO) Mapping

	Mission Stmt – 1	Mission Stmt – 2	Mission Stmt – 3
PEO – 1	3	2	2
PEO – 2	3	3	3
PEO – 3	2	2	2
PEO – 4	1	2	3

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

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

	Program Outcomes (PO)											PSO		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3
PEO – 1	3	3	2	-	2	-	-	-	-	-	-	3	1	-
PEO – 2	2	3	3	2	-	3	-	2	2	2	-	2	3	-
PEO – 3	-	-	-	2	3	2	-	-	2	-	3	-	-	2
PEO – 4	-	-	-	-	-	-	3	3	3	2	-	-	-	3

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

Program Outcomes (PO)

PO-1	Engineering Knowledge	PO-7	Ethics
PO-2	Problem Analysis	PO-8	Individual & Collaborative Teamwork
PO-3	Design / Development of Solutions	PO-9	Communication
PO-4	Conduct Investigations of Complex Problems	PO-10	Project Mgt. & Finance
PO-5	Engineering Tool Usage	PO-11	Lifelong Learning
PO-6	The Engineer and the World		

Program Specific Outcomes (PSO)

PSO-1	Problem Solving Skills: Should be able to identify and deploy data science and engineering components and provide efficient solutions in solving real-world problems in medicine, science, industry, and numerous other fields.
PSO-2	Professional Skills: Should be able to develop new tools and methods in data collection, integration, cleansing, and representation for real-time data processing.
PSO-3	Successful Career and Entrepreneurship: Create technologically innovative products, Interpret / analyze multi-disciplinary data and propose optimal solution through data analytics

1. (e) Program Structure : B.Tech. - Electronics and Communication Engineering with Specialization in Data Science (Credits-160)

Discipline Courses (B/E/C)						Discipline Skill Elective Courses (D)									
Code	Course Title	Hours / Week			C	Code	Course Title	Hours / Week			C				
		L	T	P				L	T	P					
Basic Sciences Courses						Professional Electives / Specialization (Any 8 Courses)									
26PYB1002J	Electromagnetism, Quantum Physics and Optics for Engineers	3	0	2	4	26ECD2001J	Python and Scientific Python	3	0	2	4				
26CYB1001J	Chemistry	2	1	2	4	26ECD2002J	PCB Design, Fabrication and Manufacturing	3	0	2	4				
26BTB1002T	Biology	2	0	0	2	26ECD2003J	Semiconductor Device Modeling	3	0	2	4				
Mathematics Courses						26ECD3301J	Statistics for Data Science	3	0	2	4				
26MAB1001T	Calculus and Linear Algebra	3	1	0	4	26ECD3302T	Data Mining Techniques	3	0	2	4				
26MAB1002T	Advanced Calculus and Complex Analysis	3	1	0	4	26ECD3303J	Natural Language Processing Techniques	3	0	2	4				
26MAB1003T	Discrete Mathematics	3	1	0	4	26ECD3304J	Agentic Artificial Intelligence and Data Analytics	3	0	2	4				
26MAB2001T	Transforms and Boundary Value Problems	3	1	0	4	26ECD3305T	Distributive Artificial Intelligence and Data Analytics	3	0	2	4				
26MAB2003J	Probability and Statistics	3	0	2	4	26ECD3306J	Cloud Data Analytics	3	0	2	4				
Engineering Science Courses						26ECD3308T	High Performance Databases for Data Analytics	3	0	2	4				
26CSE1001T	Data Science and Artificial Intelligence	2	1	0	3	26ECD3309J	Edge Data Analytics	3	0	2	4				
26CSE1002J	Programming for Problem Solving	2	0	2	3	26ECD3310J	Data Analytics Using Statistical Analysis System	3	0	2	4				
26DCE1001T	Design Thinking and Methodology	2	0	0	2	26ECD3311J	Tableau for Business Intelligence	3	0	2	4				
26MEE1001L	Workshop Practice	0	0	4	2	26ECD3312J	Julia for Data Science	3	0	2	4				
26EEE1001T	Electrical and Electronics Engineering	3	0	0	3	26ECD3313T	Data Analytics with Spark Using Python	3	0	2	4				
26MEE1002L	Engineering Graphics	0	0	4	2	26ECD3314J	Programming for Data Science Using Python	3	0	2	4				
Professional Core Courses						26ECD3315J	Power Business Intelligence and Data Visualization	3	0	2	4				
26ECC1001J	Solid State Devices	3	0	2	4	26ECD3316J	Programming for Data Science Using R	3	0	2	4				
26ECC2001J	Engineering Electromagnetics and Its Application	3	0	2	4	26ECD3317T	Blockchain in Data Analytics	3	0	2	4				
26ECC2002J	Digital Logic Design	3	0	2	4	26ECD3318J	Business Data Analytics	3	0	2	4				
26ECC2003J	Analog Electronic Circuit Design	3	0	2	4	26ECD3319J	Big Data Analytics Strategies for the Smart Grid	3	0	2	4				
26ECC2004J	Signal Processing	3	0	2	4	26ECD3320P	Social Media Data Analytics	3	0	2	4				
26ECC2005J	Communication Systems	3	0	2	4	26ECD3321J	Big Data and Health Care Analytics	3	0	2	4				
26ECC2006J	Processor Architecture and Interfaces	3	0	2	4	26ECD3322P	Sensor Data Processing and IoT Data Analytics	3	0	2	4				
26ECC3001T	Microwave and Wireless Communication	3	0	0	3	26ECD3323J	Analytics for Audio and Speech Signals	3	0	2	4				
26ECC3002J	Optical Communication Systems	3	0	2	4	26ECD3324T	Data Analytics for the Automotive System	3	0	2	4				
26ECC3003L	Microwave and Wireless Communication Lab	0	0	4	2	26ECD3325T	Data Analytics for Network Automation	3	0	2	4				
26ECC3004J	VLSI Design	3	0	2	4	26ECD4301J	Large Language Models and Its Applications	3	0	2	4				
26ECC3005T	Computer Communication Networks	3	0	0	3	26ECD4302J	Generative Artificial Intelligence and Its Applications	3	0	2	4				
Total Learning Credits					89	26ECD4303J	Responsible Artificial Intelligence Using Python	3	0	2	4				
Skill Enhancement Courses (S)						26ECD4304T	Digital Twin and Data Analytics	3	0	2	4				
						26ECD4305T	Extended Reality Systems Data Analytics and Visualization	3	0	2	4				
(Any 4 Courses)						26ECD4306J	Stream Real Time Data Processing and Analytics	3	0	2	4				
26LCS1001L	Communicative and Analytical Competence in English	1	0	2	2	26ECD4307T	Data Analytics for Predictive Maintenance	3	0	2	4				
26LCS2001L	Engineering Careers and Professional Skills	1	0	2	2	26ECD4308J	Data Analytics for Sustainable Autonomous Factories	3	0	2	4				
26LCS2002L	Social Responsibility and Innovation	1	0	2	2	26ECD4309J	Data Analytics for FinTech	3	0	2	4				
26LCS2002T	Public Speaking and Leadership	1	1	0	2	26ECD4310J	Cyber Threat Data Analytics	3	0	2	4				
26LCS2004T	Gender and Society	1	1	0	2	26ECD4311J	Data Analytic for EduTech	3	0	2	4				
26MAS2001T	Analytical and Logical Thinking Skills	1	1	0	2	Total Learning Credits					32				
Total Learning Credits					8	Ability Enhancement Courses (A)									
Multidisciplinary Skill Courses (M) – Open Electives						Code	Course Title	Hours / Week			C				
Code	Course Title	Hours / Week			L			T	P	C					
		(Any 3 Courses)													
26ECM2001T	Short Range Wireless Communication	3	0	0	3	26LCA1001J	Professional English for Engineers	2	0	2	3				
26ECM2002T	Electronic Circuits and Systems	3	0	0	3	26LCA1002J	Chinese	2	0	2	3				
26ECM2003T	PCB Design and Manufacturing	3	0	0	3	26LCA1003J	French								
26ECM3001T	Fiber Optics and Optoelectronics	3	0	0	3	26LCA1004J	German								
26ECM3002T	Embedded System Design Using Arduino	3	0	0	3	26LCA1005J	Japanese								
26ECM3003T	Embedded System Design Using Raspberry PI	3	0	0	3	26LCA1006J	Korean								
26ECM3004T	3D Printing Hardware and Software	3	0	0	3	26LCA1007J	Spanish								
Total Learning Credits					9	26LCA1008J	Russian					Total Learning Credits			6

Non-Graded Courses (N)							Internship / Project (P)						
Code	Course Title	Hours / Week			C	Code	Course Title	Hours / Week			C		
		L	T	P				L	T	P			
(Not to be Counted for Total Credits)							26ECP4001L	Major Project	0	0	24	12	
26CEN1001T	Disaster Mitigation and Management	2	0	0	2	OR							
26CSN1001J	Cyber Hygiene	1	0	2	2	26ECP4002L	Major Project	0	0	16	8		
26CYN1001J	Environmental Science with AI	1	0	2	2	26ECP4003L	Professional Internship	0	0	8	4		
26GNN1001T	Universal Human Values – Understanding Harmony and Ethical Human Conduct	2	1	0	3								
26GNN1002L	Community Connect	0	0	4	2	26ECP3001L	Summer Internship	0	0	8	4		
26GNN1003J	Behavioural Psychology	1	0	2	2	Total Learning Credits 16							
26GNN1004L	National Service Scheme	0	0	4	2								
26GNN1005L	National Cadet Corps	0	0	4									
26GNN1006L	National Sports Organization	0	0	4									
26GNN1007J	Physical and Mental Health using Yoga	1	0	2									
26LCN1001T	Indian Art, Culture and Constitution	2	0	0	2								
26LCN1002T	Indian Traditional Knowledge	2	0	0	2								
26LCN1003T	Professional Ethics and Values	2	0	0	2								

1. (f) Implementation Plan : B.Tech. - Electronics and Communication Engineering with Specialization in Data Science

Semester 1						Semester 2					
Code	Course Title	Hours / Week			C	Code	Course Title	Hours / Week			C
		L	T	P				L	T	P	
26PYB1002J	Electromagnetism, Quantum Physics and Optics for Engineers	3	0	2	4	26CYB1001J	Chemistry	2	1	2	4
26MAB1001T	Calculus and Linear Algebra	3	1	0	4	26BTB1002T	Biology	2	0	0	2
26CSE1001T	Data Science and Artificial Intelligence	2	1	0	3	26MAB1002T	Advanced Calculus and Complex Analysis	3	1	0	4
26EEE1001T	Electrical and Electronics Engineering	3	0	0	3	26CSE1002J	Programming for Problem Solving	2	0	2	3
26MEE1002L	Engineering Graphics	0	0	4	2	26MEE1001L	Workshop Practice	0	0	4	2
26LCA1001J	Professional English for Engineers	2	0	2	3	26ECC1001J	Solid State Devices	3	0	2	4
26GNN1001T*	Universal Human Values – Understanding Harmony and Ethical Human Conduct	2	1	0	3	26LCA1002J	Chinese	2	0	2	3
Total Learning Credits					19	26LCA1003J	French				
						26LCA1004J	German				
						26LCA1005J	Japanese				
						26LCA1006J	Korean				
						26LCA1007J	Spanish				
						26LCA1008J	Russian				
						26GNN1004L*	National Service Scheme	0	0	4	2
						26GNN1005L*	National Cadet Corps	0	0	4	
						26GNN1006L*	National Sports Organization	0	0	4	
						26GNN1007J*	Physical and Mental Health using Yoga	1	0	2	
						Total Learning Credits					22
Semester 3						Semester 4					
Code	Course Title	Hours / Week			C	Code	Course Title	Hours / Week			C
		L	T	P				L	T	P	
26MAB2001T	Transforms and Boundary Value Problems	3	1	0	4	26MAB2003J	Probability and Statistics	3	0	2	4
26DCE1001T	Design Thinking and Methodology	2	0	0	2	26ECC2004J	Signal Processing	3	0	2	4
26ECC2001J	Engineering Electromagnetics and Its Application	3	0	2	4	26ECC2005J	Communication Systems	3	0	2	4
26ECC2002J	Digital Logic Design	3	0	2	4	26ECC2006J	Processor Architecture and Interfaces	3	0	2	4
26ECC2003J	Analog Electronic Circuit Design	3	0	2	4		Skill Enhancement Course 2				2
	Skill Enhancement Course 1				2		Discipline Skill Elective Course 1				4
26LCN1001T*	Indian Art, Culture and Constitution	2	0	0	2		Multidisciplinary Skill Course 1				3
26LCN1002T*	Indian Traditional Knowledge	2	0	0	2	26GNN1003J*	Behavioural Psychology	1	0	2	2
Total Learning Credits					20	26LCN1003T*	Professional Ethics and Values	2	0	0	2
						Total Learning Credits					25
Semester 5						Semester 6					
Code	Course Title	Hours / Week			C	Code	Course Title	Hours / Week			C
		L	T	P				L	T	P	
26MAB1003T	Discrete Mathematics	3	1	0	4	26ECC3004J	VLSI Design	3	0	2	4
26ECC3001T	Microwave and Wireless Communication	3	0	0	3	26ECC3005T	Computer Communication Networks	3	0	0	3
26ECC3002J	Optical Communication Systems	3	0	2	4		Skill Enhancement Course 4				2
26ECC3003L	Microwave and Wireless Communication Lab	0	0	4	2		Discipline Skill Elective Course 3				4
	Skill Enhancement Course 3				2		Discipline Skill Elective Course 4				4
	Discipline Skill Elective Course 2				4		Multidisciplinary Skill Course 3				3
	Multidisciplinary Skill Course 2				3	26CEN1001T*	Disaster Mitigation and Management	2	0	0	2
26CYN1001J*	Environmental Science with AI	1	0	2	2	26CSN1001J*	Cyber Hygiene	1	0	2	2
26GNN1002L*	Community Connect	0	0	4	2	Total Learning Credits					20
Total Learning Credits					22						
Semester 7						Semester 8					
Code	Course Title	Hours / Week			C	Code	Course Title	Hours / Week			C
		L	T	P				L	T	P	
	Discipline Skill Elective Course 5				4	26ECP4001L	Major Project	0	0	24	12
	Discipline Skill Elective Course 6				4	OR					
	Discipline Skill Elective Course 7				4	26ECP4002L	Major Project	0	0	16	8
	Discipline Skill Elective Course 8				4	26ECP4003L	Professional Internship	0	0	8	4
26ECP3001L	Summer Internship	0	0	8	4	Total Learning Credits					12
Total Learning Credits					20						

(Total Credits - 160)

* The credits for Non-graded courses are not to be counted for total credits for the award of the degree