

ACADEMIC CURRICULA

POST GRADUATE DEGREE PROGRAMMES

Master of Technology

(Choice Based Flexible Credit System)

Regulations 2021

Volume – 21 Curriculum



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

29 M.Tech in Wireless Communication Technology

29. (a) Department Vision Statement

Stmt - 1	<i>To establish itself as a leading benchmark in the field of electronics and communication engineering by providing high-quality educational and research opportunities that align with advancing technology, while nurturing the development of ethical and skilled professionals.</i>
----------	--

29. (b) Department Mission Statement

Stmt - 1	<i>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.</i>
Stmt - 2	<i>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, communication, and interdisciplinary fields through interaction with research institutes and industry to align with the evolving demands of society.</i>
Stmt - 3	<i>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 endeavors.</i>

29. (c) Program Education Objectives (PEO)

PEO - 1	<i>To provide the Graduates with knowledge and research trends in Wireless Communication Systems and Signal Processing, Electromagnetics and Radiation Systems and Optical Communication</i>
PEO - 2	<i>To Practice Wireless Communication engineering in the design of Communication system through the acquired knowledge, Skills and modern tools.</i>
PEO - 3	<i>To apply the wireless Communication engineering foundation for success in Higher Studies/ Research, Technical careers in Industry, academia, Entrepreneurial and consultancy.</i>
PEO - 4	<i>To promote the development of Intellectual property through research in the specific area by means of high-impact factor journal publication and patents.</i>
PEO - 5	<i>To prepare the graduate for Lifelong learning in order to adapt themselves for professional activities and to take the advantage of opportunities in their profession.</i>

29. (d) Consistency of PEO's with Mission of the Department

	Mission Stmt. - 1	Mission Stmt. - 2	Mission Stmt. - 3
PEO - 1	3	2	1
PEO - 2	1	3	2
PEO - 3	1	2	3
PEO - 4	1	2	3
PEO - 5	2	3	1

29. (e) PO – Program Outcomes

PO - 1	<i>An ability to independently carry out research /investigation and development work to solve practical problems.</i>
PO - 2	<i>An ability to write and present a substantial technical report/document.</i>
PO - 3	<i>Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.</i>

29. (f) Consistency of PEO's with Program Outcomes (PO)

	Program Outcomes (PO)		
	1	2	3
PEO - 1	3	2	1
PEO - 2	3	2	1
PEO - 3	2	3	1
PEO - 4	1	2	3
PEO - 5	1	2	3

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

29. (g) Programme Structure: M.Tech Wireless Communication Technology

Professional Core Courses (C)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21MAC502T	Advanced Mathematics for Communication Engineers	3	1	0	4	
21ECC551J	Digital Modulation and Coding Techniques	2	0	2	3	
21ECC552J ²	Antenna Design Techniques	3	0	2	4	
21ECC553J ³	Advanced Wireless Communication	3	0	2	4	
21ECC554J	Machine Learning for Wireless Communication	3	0	2	4	
21IPC501J ²	Research Methodology	2	1	2	4	
21ECC601T ¹	Case Studies	3	0	0	3	
Total Credits					26	
Project Work, Internship In Industry / Higher Technical Institutions (P)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21ECP501L	Specialization Project (OR)	0	0	40	20	
21ECP502L	Specialization Project	0	0	30	15	
21ECP503L	Domain Internship	0	0	10	5	
Total Credits					20	
Assessment by Open Book Examination (2)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21ECC552J ²	Antenna Design Techniques	3	0	2	4	
21ECE556T ²	Radio Frequency System Design	3	0	0	3	
21IPC501J ²	Research Methodology	2	1	2	4	
100% assessment by the Department (1)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21ECC601T ¹	Case Studies	3	0	0	3	
21ECE600T ¹	Journal Publication	0	0	0	3	

Professional Elective Courses (E) (Any 7 Courses)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21ECE551T	Optical Wireless Communication	3	0	0	3	
21ECE553T	Signal Processing for Next-Generation Communications	3	0	0		
21ECE552T ³	Wireless and Mobile Network Security	3	0	0	3	
21ECE555T ³	Software Defined Networks for Wireless Communication	3	0	0		
21ECE554T ³	5G Mobile Networks	3	0	0	3	
21ECE556T ²	Radio Frequency System Design	3	0	0		
21ECE557T	Intelligent Reflecting Surface aided Wireless Communication	3	0	0	3	
21ECE558T	Massive MIMO and Millimetre Wave Communication	3	0	0		
21ECE651T	Advanced Wireless and Mobile Networks	3	0	0	3	
21ECE652T	Optical Networks for Broadband Services	3	0	0		
21ECE654T	IoT Communication Technology	3	0	0	3	
21ECE656T ³	Wireless Sensor Networks	3	0	0		
21ECE600T ¹	Journal Publication	0	0	0	3	
21ECE653T ³	Cloud Mobile Networks	3	0	0		
21ECE655T	Cognitive Radio	3	0	0		
Total Credits					21	
Open Elective Courses (O)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21ECO550T	Applied Machine Learning in Imaging Systems	3	0	0	3	
Total Credits					3	
Course Delivery by online mode (3)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21ECC553J ³	Advanced Wireless Communication	3	0	2	4	
21ECE552T ³	Wireless and Mobile Network Security	3	0	0	3	
21ECE554T ³	5G Mobile Networks	3	0	0	3	
21ECE555T ³	Software Defined Networks for Wireless Communication	3	0	0	3	
21ECE653T ³	Cloud Mobile Networks	3	0	0	3	
21ECE656T ³	Wireless Sensor Networks	3	0	0	3	

All elective courses may be studied under MOOC platform

¹ 100% assessment by the Department

² Assessment by Open Book Examination

³ Course Delivery through online mode

29. (h) Implementation Plan: M.Tech Wireless Communication Technology

Semester - I						
Code	Course Title	Hours/ Week				
		L	T	P	C	
21MAC502T	Advanced Mathematics for Communication Engineers	3	1	0	4	3
21ECC551J	Digital Modulation and Coding Techniques	2	0	2	3	
21ECC552J ²	Antenna Design Techniques	3	0	2	4	
21IPC501J ²	Research Methodology	2	1	2	4	
21ECE551T	Optical Wireless Communication	3	0	0		
21ECE553T	Signal Processing for Next-Generation Communications	3	0	0		
Total Credits					18	

Semester - II						
Code	Course Title	Hours/ Week				
		L	T	P	C	
21ECC553J ³	Advanced Wireless Communication	3	0	2	4	3
21ECC554J	Machine Learning for Wireless Communication	3	0	2	4	
21ECE552T ³	Wireless and Mobile Network Security	3	0	0		
21ECE555T ³	Software Defined Networks for Wireless Communication	3	0	0		
21ECE554T ³	5G Mobile Networks	3	0	0		
21ECE556T ²	Radio Frequency System Design	3	0	0		
21ECE557T	Intelligent Reflecting Surface aided Wireless Communication	3	0	0		3
21ECE558T	Massive MIMO and Millimetre Wave Communication	3	0	0		
Total Credits					17	

Semester - III						
Code	Course Title	Hours/ Week				
		L	T	P	C	
	Open Elective	3	0	0	3	3
21ECE651T	Advanced Wireless and Mobile Networks	3	0	0		
21ECE652T	Optical Networks for Broadband Services	3	0	0		
21ECE654T	IoT Communication Technology	3	0	0		
21ECE656T ³	Wireless Sensor Networks	3	0	0		
21ECE600T ¹	Journal Publication	0	0	0		
21ECE653T ³	Cloud Mobile Networks	3	0	0		3
21ECE655T	Cognitive Radio	3	0	0		
21ECC601T ¹	Case Studies	3	0	0	3	
Total Credits					15	

Semester - IV						
Code	Course Title	Hours/ Week				
		L	T	P	C	
21ECP501L	Specialization Project	0	0	40	20	(OR)
21ECP502L	Specialization Project	0	0	30	15	
21ECP503L	Domain Internship	0	0	10	5	
Total Credits					20	

Students must register either 21ECP501L or 21ECP502L and 21ECP503L both in fourth semester

29. (i) Program Articulation Matrix: M.Tech Wireless Communication Technology

Course Code	Course Name	Programme Outcomes		
		1	2	3
21MAC502T	Advanced Mathematics for Communication Engineers	3	3	3
21ECC551J	Digital Modulation and Coding Techniques	2.25	2	2.8
21ECC552J	Antenna Design Techniques	2.5	2	2.75
21ECC553J	Advanced Wireless Communication	2.75	2	2.67
21ECC554J	Machine Learning for Wireless Communication	3	2	2.35
21ECC601T	Case Studies			
21ECE551T	Optical Wireless Communication	3	2	3
21ECE552T	Wireless and Mobile Network Security	2.33	1.67	2.67
21ECE553T	Signal Processing for Next-Generation Communications	3	2	2
21ECE554T	5G Mobile Networks	3	2	3
21ECE555T	Software Defined Networks for Wireless Communication	3	2	2
21ECE556T	Radio Frequency System Design	2.6	2	2.33
21ECE557T	Intelligent Reflecting Surface aided Wireless Communication	3	2	3
21ECE558T	Massive MIMO and Millimetre Wave Communication	3	2	3
21ECE651T	Advanced Wireless and Mobile Networks	3	2	2.5
21ECE652T	Optical Networks for Broadband Services	2.33	3	3
21ECE653T	Cloud Mobile Networks	3	2	3
21ECE654T	IoT Communication Technology	3	2	3
21ECE655T	Cognitive Radio	3	2.33	2.5
21ECE656T	Wireless Sensor Networks	3	2	2
21ECE600T	Journal Publication			
21IPC501J	Research Methodology	3	2.6	
	Open Elective			
21ECP501L	Specialization Project			
21ECP502L	Specialization Project			
21ECP503L	Domain Internship			
Program Average		2.84	2.15	2.62

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



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

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

Kattankulathur, Chengalpattu District 603203, Tamil Nadu, India