

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

8. M.Tech in Construction Engineering and Management

8. (a) Department Vision Statement

Stmnt - 1	<i>To become a frontier in various fields of Civil Engineering education and research to meet national and global challenges in accordance with the societal needs.</i>
-----------	---

8. (b) Department Mission Statement

Stmnt - 1	<i>To move up through international alliances and collaborative initiatives in civil engineering to achieve global excellence</i>
Stmnt - 2	<i>To accomplish a process to advance knowledge in a rigorous research environment related to civil engineering and allied disciplines</i>
Stmnt - 3	<i>To attract and build people in a rewarding and inspiring environment by fostering freedom, empowerment, creativity and innovation.</i>

8. (c) Program Education Objectives (PEO)

PEO - 1	<i>Graduates will perform as professional engineers in the various fields of Construction Engineering and Management</i>
PEO - 2	<i>Graduates will perform well in their specialized field and gradually move into teamwork and leadership positions</i>
PEO - 3	<i>Graduates will exhibit their potential in public and private sectors with managerial skills</i>
PEO - 4	<i>Graduates will exhibit entrepreneurship qualities and perform as an all-round achiever</i>
PEO - 5	<i>Graduates will contribute to the development of the global, national and provincial levels</i>

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

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

8. (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>

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

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

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

8. (g) Programme Structure: M.Tech Construction Engineering and Management

Professional Core Courses (C)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21CEC531T	Modernistic Approaches in Construction Management	3	0	0	3	
21CEC532J	Construction Planning, Scheduling and Control	3	0	2	4	
21CEC533J	Construction Materials and Practices	3	0	2	4	
21CEC534T ³	Advanced Construction Methods	4	0	0	4	
21CEC535T ³	Construction Economics and Financial Management	3	1	0	4	
21IPC501J ²	Research Methodology	2	1	2	4	
21CEC601T 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		
21CEP501L	Specialization Project (OR)	0	0	40	20	
21CEP502L	Specialization Project	0	0	30	15	
21CEP503L	Domain Internship	0	0	10	5	
Total Credits					20	
Open Elective Courses (O)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21CEO531T	Project Management and Leadership Skills	3	0	0	3	
21CEO532T	Urban Planning and Sustainability	3	0	0	3	
21CEO533T	Smart Cities	3	0	0	3	
21CEO534T	Affordable Housing	3	0	0	3	
Total Credits					3	
Course Delivery by online mode (³)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21CEC534T ³	Advanced Construction Methods	4	0	0	4	
21CEC535T ³	Construction Economics and Financial Management	3	1	0	4	
21CEE543T ³	Construction Equipment and Automation	3	0	0	3	
Assessment by Open Book Examination (²)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21CEE531T ²	Quantitative Analysis in Construction	3	0	0	3	
21IPC501J ²	Research Methodology	2	1	2	4	

Professional Elective Courses (E)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21CEE531T ²	Quantitative Analysis in Construction	3	0	0	3	
21CEE532T	Construction Personnel Management	3	0	0		
21MAE501T	Advanced Mathematical Techniques	3	0	0		
21CEE533T	Organization Dynamics and Human Resource Management	3	0	0	3	
21CEE534T	Building Rehabilitation and Forensic Engineering	3	0	0		
21CEE535T	Construction Material Management	3	0	0		
21CEE536T	Advanced Project Management Concepts	3	0	0	3	
21CEE537T	Temporary Structures in Construction	2	1	0		
21CEE538T	Statistical Application in Construction Practices	2	1	0		
21CEE539T	Digital Transformation in Construction Practices	2	1	0	3	
21CEE540T	Quality and Risk Management in Construction Projects	3	0	0		
21CEE541T	Industrial Health and Safety Management	3	0	0		
21CEE542T	Building Services and Facility Management	3	0	0	3	
21CEE543T ³	Construction Equipment and Automation	3	0	0		
21CEE544T	Lean Construction	3	0	0		
21CEE545T	Infrastructure and Real Estate Management	3	0	0	3	
21CEE546T	Sustainability in Built Environment	3	0	0		
21CEE547T	Energy Efficiency Building	3	0	0		
21CEE548T	Modular and Low-Cost Construction	3	0	0	3	
21CEE600T ¹	Journal Publication	0	0	0		
21CEE549J	Building Information Modelling in Construction	2	0	2		
21CEE550T	System Dynamic modeling in construction	3	0	0	3	
21CEE551T	Contract Laws and Regulations	3	0	0		
Total Credits					21	
100% assessment by the Department (¹)						
Course Code	Course Title	Hours/Week			C	
		L	T	P		
21CEC601T ¹	Case Studies	3	0	0	3	
21CEE600T ¹	Journal Publication	0	0	0	3	

8. (h) Implementation Plan: M.Tech Construction Engineering and Management

Semester - I							Semester - II						
Code	Course Title	Hours/Week					Code	Course Title	Hours/Week				
		L	T	P	C				L	T	P	C	
21CEC531T	Modernistic Approaches in Construction Management	3	0	0	3		21CEC534T ³	Advanced Construction Methods	4	0	0	4	
21CEC532J	Construction Planning, Scheduling and Control	3	0	2	4		21CEC535T ³	Construction Economics and Financial Management	3	1	0	4	
21CEC533J	Construction Materials and Practices	3	0	2	4		21CEE534T	Building Rehabilitation and Forensic Engineering	3	0	0		
21IPC501J ²	Research Methodology	2	1	2	4		21CEE535T	Construction Material Management	3	0	0	3	
21CEE531T ²	Quantitative Analysis in Construction	3	0	0			21CEE536T	Advanced Project Management Concepts	3	0	0		
21CEE532T	Construction Personnel Management	3	0	0			21CEE537T	Temporary Structures in Construction	2	1	0		
21MAE501T	Advanced Mathematical Techniques	3	0	0	3		21CEE538T	Statistical Application in Construction Practices	2	1	0	3	
21CEE533T	Organization Dynamics and Human Resource Management	3	0	0			21CEE539T	Digital Transformation in Construction Practices	2	1	0		
Total Credits						18							
Semester - III													
Code	Course Title	Hours/Week					Code	Course Title	Hours/Week				
		L	T	P	C				L	T	P	C	
	Open Elective	3	0	0	3		21CEE540T	Quality and Risk Management in Construction Projects	3	0	0		
21CEE543T ³	Construction Equipment and Automation	3	0	0			21CEE541T	Industrial Health and Safety Management	3	0	0	3	
21CEE544T	Lean Construction	3	0	0	3		21CEE542T	Building Services and Facility Management	3	0	0		
21CEE545T	Infrastructure and Real Estate Management	3	0	0			Total Credits						17
21CEE546T	Sustainability in Built Environment	3	0	0			Semester - IV						
21CEE547T	Energy Efficiency Building	3	0	0			Code	Course Title	Hours/Week				
21CEE548T	Modular and Low-Cost Construction	3	0	0					L	T	P	C	
21CEE600T ¹	Journal Publication	0	0	0			21CEP501L	Specialization Project	0	0	40	20	
21CEE549J	Building Information Modelling in Construction	2	0	2			(OR)						
21CEE550T	System Dynamic Modeling in Construction	3	0	0	3		21CEP502L	Specialization Project	0	0	30	15	
21CEE551T	Contract Laws and Regulations	3	0	0			21CEP503L	Domain Internship	0	0	10	5	
21CEC601T ¹	Case Studies	3	0	0	3		Total Credits						20
Total Credits						15							

Students must register either 21CEP501L or 21CEP502L and 21CEP503L both in fourth semester

8. (i) Program Articulation Matrix: M.Tech Construction Engineering and Management

Course Code	Course Name	Programme Outcomes		
		1	2	3
21CEC531T	Modernistic Approaches in Construction Management	2	2	3
21CEC532J	Construction Planning, Scheduling and Control	2	2	3
21CEC533J	Construction Materials and Practices	2	3	3
21CEC534T	Advanced Construction Methods	2	3	2
21CEC535T	Construction Economics and Financial Management	2	3	3
21CEC601T	Case Studies	2	2	2
21CEE531T	Quantitative Analysis in Construction	2	2	3
21CEE532T	Construction Personnel Management	2	2	3
21MAE501T	Advanced Mathematical Techniques	3	3	-
21CEE533T	Organization Dynamics and Human Resource Management	1	2	3
21CEE534T	Building Rehabilitation and Forensic Engineering	2	2	3
21CEE535T	Construction Material Management	2	2	3
21CEE536T	Advanced Project Management Concepts	1	2	3
21CEE537T	Temporary Structures in Construction	2	2	3
21CEE538T	Statistical Application in Construction Practices	2	2	3
21CEE539T	Digital Transformation in Construction Practices	2	2	3
21CEE540T	Quality and Risk Management in Construction Projects	2	3	3
21CEE541T	Industrial Health and Safety Management	2	1	3
21CEE542T	Building Services and Facility Management	2	2	2
21CEE543T	Construction Equipment and Automation	2	2	3
21CEE544T	Lean Construction	2	2	3
21CEE545T	Infrastructure and Real Estate Management	2	2	3
21CEE546T	Sustainability in Built Environment	2	2	3
21CEE547T	Energy Efficiency Building	2	2	3
21CEE548T	Modular and Low-Cost Construction	2	2	3
21CEE600T	Journal Publication			
21CEE549J	Building Information Modelling in Construction	2	2	3
21CEE550T	System Dynamic Modeling in Construction	2	2	3
21CEE551T	Contract Laws and Regulations	2	2	3
21IPC501J	Research Methodology	3	2.6	
	Open Elective			
21CEP501L	Specialization Project			
21CEP502L	Specialization Project			
21CEP503L	Domain Internship			
Program Average				

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