

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

38 M.Tech in Computer Aided Design

38. (a) Department Vision Statement

Stmnt - 1	<i>To enhance learning and research skills in mechanical engineering and allied fields to accomplish crest positions in world-renowned organizations.</i>
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38. (b) Department Mission Statement

Stmnt - 1	<i>To impart quality education to produce eminent mechanical engineers.</i>
Stmnt - 2	<i>To establish Centers of Research Excellence to inculcate research acumen to faculty and students on the emerging thrust areas of mechanical engineering.</i>
Stmnt - 3	<i>To inculcate progressive education and intricate facts through cognitive training programs to the faculty and students using state-of-art facilities.</i>

38. (c) Program Education Objectives (PEO)

PEO - 1	<i>Specialize in the domain of engineering design with the support of computing technology.</i>
PEO - 2	<i>Engage in professional practice to meet global standards with ethical and social responsibility.</i>
PEO - 3	<i>Strengthen capability in upcoming areas of research and development in engineering design and analysis.</i>
PEO - 4	<i>Leverage necessary ecosystem for self-employment.</i>
PEO - 5	<i>Apply independent life-long learning ability to actively participate in nation building.</i>

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

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

38. (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>

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

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

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

38. (g) Programme Structure: M.Tech Computer Aided Design

Professional Core Courses (C)						Professional Elective Courses (E)					
Course Code	Course Title	Hours/Week			C	Course Code	Course Title	Hours/Week			C
		L	T	P				L	T	P	
21MAC501T	Computational Methods	3	1	0	4	21MEE501T ³	Integrated Product Design and Development	3	0	0	3
21MEC501J	Modeling and Simulation	2	0	2	3	21MEE502T ³	Design for Manufacture and Assembly	3	0	0	3
21MEC502J	Theory of Vibrations	3	0	2	4	21MEE503J	Optimization Methods in Engineering Design	2	0	2	3
21MEC503T ²	Advanced Mechanics of Solids	3	1	0	4	21MEE504T ³	Biomechanics	3	0	0	3
21MEC504J ²	Finite Element Analysis	3	0	2	4	21MEE505T	Mechanical Behavior of Engineering Materials	3	0	0	3
21IPC501J ²	Research Methodology	2	1	2	4	21MEE506P ¹	Structural Aspects of Biomaterials	3	0	0	3
21MEC601T ¹	Case Studies	3	0	0	3	21MEE507J	Computer Graphics and Virtual Reality	2	0	2	3
Total Credits					26	21MEE508J	Tribology in Design	2	0	2	3
						21MEE509J	Mechanics of Composites	2	0	2	3
						21MEE510J	Design of Hydraulic and Pneumatic Systems	2	0	2	3
						21MEE601T ²	Advanced Finite Element Analysis	2	1	0	3
						21MEE602J ³	Additive Manufacturing Technology	2	0	2	3
						21MEE600T ¹	Journal Publication	0	0	0	3
						21MEE604T	Advanced Mechanism Design and Synthesis	2	1	0	3
						21MEE605J ²	Computational Fluid Dynamics	2	0	2	3
						Total Credits					21
						Open Elective Course (O)					
						Course Code	Course Title	Hours/Week			C
								L	T	P	
						21MEO501T	Industrial Safety	3	0	0	3
						21MEO502T	Entrepreneurship and IPR	3	0	0	3
						21MEO503T	Operations Research	3	0	0	3
						21MEO504T	Human Body Mechanics	3	0	0	3
						21MEO505T	Energy Storage Systems	3	0	0	3
						Total Credits					3
						100% assessment by the Department (1)					
						Course Code	Course Title	Hours/Week			C
								L	T	P	
						21MEE506P ¹	Structural Aspects of Biomaterials	3	0	0	3
						21MEC601T ¹	Case Studies	3	0	0	3
						21MEE600T ¹	Journal Publication	0	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

38. (h) Implementation Plan: M.Tech Computer Aided Design

Semester - I							
Code	Course Title	Hours/Week					
		L	T	P	C		
21MAC501T	Computational Methods	3	1	0	4		
21MEC501J	Modeling and Simulation	2	0	2	3		
21MEC502J	Theory of Vibrations	3	0	2	4		
21MEC503T ²	Advanced Mechanics of Solids	3	1	0	4		
21IPC501J ²	Research Methodology	2	1	2	4		
21MEE501T ³	Integrated Product Design and Development	3	0	0			
21MEE502T ³	Design for Manufacture and Assembly	3	0	0			
Total Credits						22	
Semester - II							
Code	Course Title	Hours/Week					
		L	T	P	C		
21MEC504J ²	Finite Element Analysis	3	0	2	4		
21MEE503J	Optimization Methods in Engineering Design	2	0	2			3
21MEE504T ³	Biomechanics	3	0	0			
21MEE505T	Mechanical Behavior of Engineering Materials	3	0	0			3
21MEE506P ¹	Structural Aspects of Biomaterials	3	0	0			
21MEE507J	Computer Graphics and Virtual Reality	2	0	2			3
21MEE508J	Tribology in Design	2	0	2			
21MEE509J	Mechanics of Composites	2	0	2			
21MEE510J	Design of Hydraulic and Pneumatic Systems	2	0	2			3
Total Credits						16	
Semester - III							
Code	Course Title	Hours/Week					
		L	T	P	C		
	Open Elective	3	0	0	3		
21MEE601T ²	Advanced Finite Element Analysis	2	1	0			
21MEE602J ³	Additive Manufacturing Technology	2	0	2			3
21MEE600T ¹	Journal Publication	0	0	0			
21MEE604T	Advanced Mechanism Design and Synthesis	2	1	0			3
21MEE605J ²	Computational Fluid Dynamics	2	0	2			
21MEC601T ¹	Case Studies	3	0	0	3		
Total Credits						12	
Semester - IV							
Code	Course Title	Hours/Week					
		L	T	P	C		
21MEP501L	Specialization Project (OR)	0	0	40	20		
21MEP502L	Specialization Project	0	0	30	15		
21MEP503L	Domain Internship	0	0	10	5		
Total Credits						20	

Students must register either 21MEP501L or 21MEP502L and 21MEP503L both in fourth semester

38. (i) Program Articulation Matrix: M.Tech Computer Aided Design

Course Code	Course Name	Programme Outcomes		
		1	2	3
21MAC501T	Computational Methods	3	3	
21MEC501J	Modeling and Simulation	1.67	2	3
21MEC502J	Theory of Vibrations	3	2	2
21MEC503T	Advanced Mechanics of Solids	2.8		3
21MEC504J	Finite Element Analysis	3		2
21MEE501T	Integrated Product Design and Development	1.6	3	
21MEE502T	Design for Manufacture and Assembly	2	2	3
21MEE503J	Optimization Methods in Engineering Design	2.8	2.8	2.8
21MEE504T	Biomechanics	1.5		3
21MEE505T	Mechanical Behavior of Engineering Materials	1.6	2	
21MEE506P	Structural Aspects of Biomaterials	1.5	1.3	2
21MEE507J	Computer Graphics and Virtual Reality	2	3	3
21MEE508J	Tribology in Design	2	1.8	1.6
21MEE509J	Mechanics of Composites	1	2	3
21MEE510J	Design of Hydraulic and Pneumatic Systems	3	3	1
21IPC501J	Research Methodology	3	2.6	
	Open Elective			
21MEE601T	Advanced Finite Element Analysis	3		1.75
21MEE602J	Additive Manufacturing Technology	2		2
21MEE600T	Journal Publication			
21MEE604T	Advanced Mechanism Design and Synthesis	3		2
21MEE605J	Computational Fluid Dynamics	2.8	2.8	
21MEC601T	Case Studies			
21MEP501L	Specialization Project			
21MEP502L	Specialization Project			
21MEP503L	Domain Internship			
Program Average				

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



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