M.Tech. in Civil Engineering with
Structural Engineering Courses

Academic Scheme
Year 2022-23

Sardar Patel College of Engineering Andheri (West), Mumbai 400 058
Academic Book
Year: 2022-23

Scheme for M.Tech. (Civil) with Structural Engineering Courses (Semester – I) Academic year 2022-23

Sr. No	Course Name	Code	Course Type	Course Plan for Each Week (Hrs)			Credits	Test 1	Test 2	Evaluation (Points)			In Semester Evaluation	Total
				Lectures	Laboratory	Tutorial				End Semester		End Semester Weightage (%)		
										Points	Duration			
1	Structural Dynamics	PC-MST 101	Core 1	3	--	1	4	20	20	100	3	60	25	125
2	Advanced Theory of structures	PC-MST 102	Core 2	3	--	1	4	20	20	100	3	60	25	125
3	Elective-I	EC-MST103-113	Program Elective	3	--	--	3	20	20	100	3	60	--	100
4	Elective-II	EC-MST114-124	Program Elective	3	--	--	3	20	20	100	3	60	--	100
5	Elective-III	EC-MST125-135	Program Elective	3	--	--	3	20	20	100	3	60	--	100
6	Advanced Concrete Lab	PC-MST151	Core Lab I	--	2	--	1	--	--	--	--	--	50	50
7	Numerical Analysis Lab	PC-MST152	Core Lab II	--	2	--	1	--	--	--	--	--	50	50
8	Research Methodology & IPR	MC-PG01	MLC (Online/ Offline)	2	--	---	2	20	20	100	3	60	--	100
9	Audit I	AU-PG01-02	Audit Course	2	--		AU	--	--	--	--	--	--	--
Total				**19**	**4**	02	**21**	**100**	**100**	---				750

Elective – I Courses

Sr. No.	Code	Elective
1.	EC-MST 103	Analysis of Composite Structures
2.	EC-MST 104	Advanced Foundation Engineering
3.	EC-MST 105	Design of Pre-stressed Concrete Structures
4.	EC-MST 106	Advanced Concrete Technology

Elective – II Courses

Sr. No.	Code	Elective
1	EC-MST 114	Non Linear Analysis
2	EC-MST 115	Numerical Methods
3.	EC-MST 116	Structural Optimization
4.	EC-MST117	Advanced Design of Steel Structures

Elective – III Courses

Sr. No.	Code	Elective
1.	EC-MST 125	Advanced Solid Mechanics
2	EC-MST 126	Analysis of Laminated Composite Plates
3	EC-MST 127	Fracture Mechanics Of Concrete Structures
4	EC-MST 128	Design Of Plates And Shells
5	EC-MST 129	Design of Masonry structures (Online Course)

Audit -I Courses

Sr. No.	Code	Elective
1	AU-PG 01	Project Planning and Management
2	AU-PG 02	English for Research Paper Writing

Scheme for M.Tech. (Civil) with Structural Engineering Courses (Semester – II) Academic year 2022-23

Sr. No	Course	Code	Course Type	Lectures	Laboratory	Tutorial	Credits	Test 1	Test 2	Marks	Points	End Semester Weightage (%)	In Semester Evaluation	Total
				Course Plan for Each Week (Hrs)				**Evaluation (Points)**						
										End Semester		End Semester Weightage (%)	In Semester Evaluation	
1	Finite Element Analysis	PC-MST201	Core 3	3	--	1	4	20	20	100	3	60	25	125
2	Earthquake Engineering	PC-MST202	Core 4	3	--	1	4	20	20	100	3	60	25	125
3	Elective IV	EC-MST 203-213	Program Elective (Online/ Offline)	3	--	--	3	20	20	100	3	60	--	100
4	Elective V	EC-MST214-224	Program Elective (Online/ Offline)	3	--	--	3	20	20	100	3	60	--	100
6	Open Elective – I (Online/ Offline)	OE-PG01-07	Elective - VI	3	--	---	3	20	20	100	3	60	--	100
6	Model Testing Lab	PC-MST253	Core Lab 3	--	2	--	1	--	--	--	--	--	50	50
7	Structural Engg Lab	PC-MST254	Core Lab 4	--	2	--	1	--	--	--	--	--	50	50
8	Seminar (MiniProject)	PC-MST255	Core 5	--	4	--	2	--	--	--	--	--	100*	100*
9	Audit 2	AU-PG03-04	Audit Course	2	--	--	--	--	--	--	--	--	--	--
	Total			**17**	**8**	**02**	**21**	**100**	**100**	**----**		**300**		650

*Note 1- 50 Marks for report and 50 Marks for presentation

Note 2- Project report to be evaluated by supervisor and atleast one internal faculty

Elective – IV Courses

Sr. No.	Code	Elective
1.	EC-MST 203	Bridge Engineering
2	EC-MST 204	Analysis of Offshore Structures
3	EC-MST 205	Structural Deterioration and Rehabilitation of Structures

Elective –V Courses

Sr. No.	Code	Elective
1.	EC-MST 214	Advanced Design of Concrete Structures
2	EC-MST 215	Theory of Plates
3	EC-MST 216	Reliability of structures
4	EC-MST 217	Theory of Shells
5	EC-MST 218	Soil Structure Interaction (Online Course)

Audit -II Courses

Sr. No.	Code	Elective
1	AU-PG 03	Disaster Management
2	AU-PG 04	Stress Management by Yoga

Open Elective Courses

Sr. No.	Code	Elective
1.	OE-PG01	Business Analytics
2	OE-PG02	Industrial Safety Engineering(Online Course)
3	OE-PG03	Operations Research
4	OE-PG04	Cost Management of Engineering Projects
5	OE-PG05	Construction safety Management(online)

Scheme for M.Tech. (Civil) with Structural Engineering Courses (Semester – III) Academic year 2022-23

Sr. No	Course Type	Code	Course Name	Course Plan for Each Week (Hrs)			Credits	Evaluation (Points)							Total
				Lectures	Laboratory	Tutorial		Test1	Test 2	End Semester		End Semester Weightage (%)	In Semester Evaluation		
										Points	Duration		Report	Seminar	
1	Dissertation	PC-MST301	Dissertation Phase - I	---	---	$4^{\#} + 12^{\$}$	12	Seminar on Literature Review					50	50	100*
2			Dissertation Phase - I	---	---			Seminar Stage – I					50	50	100*
							Value added Course								
3	Value added course	VA-MST01	Advanced Earthquake resistant design of structures	03	00	01	00	20	20	100	3 hours	60%	25	00	125
	Total			03	--	17	12	100					125	100	325

For passing, Student must secure minimum 50% marks in each course with all head of passing taken together and minimum 50% marks in the end semester examination

* Examined by supervisor and at least one internal examiner.

#- Contact hours with supervisor/mentor/guide = 4, $-Self-learning hours = 12

Scheme for M.Tech. (Civil) with Structural Engineering Courses (Semester – IV) Academic year 2022-23

Sr. No.	Course Name	Code	Course Plan for Each Week (Hrs)	Credits	Test 1	Test 2	End Semester	End Semester Weightage (%)	Report	Seminar	Total
					Evaluation (Points)				
1	Dissertation Phase-II	PC-MST401	$4^{\#}+12^{\$}$	16	Seminar (Pre-Synopsis)				50*	50*	100
2					Dissertation & Viva-Voce				100**	50**	150
Total			**16**	**16**	--	--	---	--	**150**	**100**	**250**

* Examined by supervisor and at least one internal examiner

** Examined by supervisor and one approved external examiner. #-Contact hours with mentor/supervisor/guide, $-Self learning hours.

For passing, Student must secure minimum 50% points in each Course with all head of passing taken together and minimum 50% points in the end semester examination