

**Sardar Patel College of Engineering Andheri (West), Mumbai 400 058**  
Year: 2025-26



**Bharatiya Vidya Bhavan's**  
**SARDAR PATEL COLLEGE OF ENGINEERING**  
(Government Aided Autonomous Institute under Mumbai University)  
Andheri (W), Mumbai - 400058



**M.Tech. in Civil Engineering with**  
**Structural Engineering Courses**  
**Academic Evaluation Scheme/Credit System**  
**Year: 2025-26**

**Sardar Patel College of Engineering Andheri (West), Mumbai 400 058**  
Year: 2025-26

Scheme for F.Y.M.Tech In Civil Engineering with Structural Engineering Subjects, (Semester - I) R23 Academic Year 2025-26														
SR. NO.	Course Name	Code	Course Plan per Week (Hrs)			SL/Sem	Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid term (Points)	Mid Term Duration (Hrs.)	IE	Points	Time (Hrs.)		
<b>Theory Courses</b>														
1	Structural Dynamics	PC-MTSE101	3	--	1	64	4	30	1.5	20	100	3	50%	100
2	Advanced Theory of structures	PC-MTSE102	3	--	0	48	3	30	1.5	20	100	3	50%	100
3	Research Methodology and IPR	PC-MTSE103	2	--	1	48	3	30	1.5	20	100	3	50%	100
<b>Program Elective Courses</b>														
4	Program Elective-I	PE-MTSE11X	3	--	0	48	3	30	1.5	20	100	3	50%	100
5	Program Elective-II	PE-MTSE12X	3	--	0	48	3	30	1.5	20	100	3	50%	100
6	Program Elective-III	PE-MTSE13X	3	--	0	48	3	30	1.5	20	100	3	50%	100
<b>Laboratory Courses</b>														
7	Advanced Concrete Lab	PC-MTSE151	--	2	--	2	1	--	--	25	25	--	100%	50
<b>Vocational and Skill Enhancement Course</b>														
8	Numerical Analysis Lab	SE-MTSE101	--	4	--	4	2	--	--	25	25	--	100%	50
<b>Indian Knowledge System Courses</b>														
9	Indian Knowledge System	IK-MTSE10X	2	--	--	32	2	30	1.5	20	50	2	100%	100
<b>TOTAL</b>			<b>19</b>	<b>6</b>	<b>2</b>		<b>24</b>							<b>800</b>

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation

1 Credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L,T,P), the remaining hours are utilised for self-learning by students

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**Program Elective-I Courses**

<b>Sr. No.</b>	<b>Code</b>	<b>Elective</b>
1.	PE-MTSE111	Analysis of Composite Structures
2.	PE-MTSE112	Advanced Foundation Engineering
3.	PE-MTSE113	Design of Pre-stressed Concrete Structures
4.	PE-MTSE114	Advanced Concrete Technology

**Program Elective-II Courses**

<b>Sr. No.</b>	<b>Code</b>	<b>Elective</b>
1	PE-MTSE121	Non Linear Analysis
2	PE-MTSE122	Numerical Methods
3.	PE-MTSE123	Structural Optimization
4.	PE-MTSE124	Advanced Design of Steel Structures

**Program Elective-III Courses**

<b>Sr. No.</b>	<b>Code</b>	<b>Elective</b>
1.	PE-MTSE131	Advanced Solid Mechanics
2	PE-MTSE132	Analysis of Laminated Composite Plates
3	PE-MTSE133	Fracture Mechanics Of Concrete Structures
4	PE-MTSE134	Design Of Plates And Shells

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Scheme for F.Y.M.Tech In Civil Engineering with Structural Engineering Subjects, (Semester - II) R23 Academic Year 2025-26														
SR. NO.	Course Name	Code	Course Plan per Week (Hrs)			SL/Sem	Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid term (Points)	Mid Term Duration (Hrs.)	IE	Points	Time (Hrs.)		
<b>Theory Courses</b>														
1	Finite Element Analysis	PC-MTSE201	3	0	1	64	4	30	1.5	20	100	3	50%	100
2	Earthquake Engineering	PC-MTSE202	3	0	1	64	4	30	1.5	20	100	3	50%	100
3	Seminar/ Mini Project	PC-MTSE203	--	4	--	4	2			50*	50*		100%	100*
<b>Program Elective Courses</b>														
4	Program Elective-IV	PE-MTSE21X	3	--	--	48	3	30	1.5	20	100	3	50%	100
5	Program Elective-V	PE-MTSE22X	3	--	--	48	3	30	1.5	20	100	3	50%	100
<b>Open elective course</b>														
6	Open Elective	OE-MTSEXX	3	--	--	48	3	30	1.5	20	100	3	50%	100
<b>Laboratory Course</b>														
7	Structural Design Lab	PC-MTSE251	--	4	--	4	2	--	--	25	25	--	100%	50
<b>Vocational and Skill Enhancement Course</b>														
8	Earthquake Engineering and Model Testing Lab	SE-MTSE201	--	4	--	4	2	--	--	25	25	--	100%	50
<b>Ability Enhancement Course</b>														
9	Ability Enhancement Course	AE-MTSE20X	2			32	2	30	1.5	20	100	3	50%	100
<b>TOTAL</b>			<b>17</b>	<b>12</b>	<b>2</b>		<b>25</b>							<b>800</b>

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation

1 Credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L,T,P), the remaining hours are utilized for self learning by students

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**Program Elective – IV Courses**

<b>Sr. No.</b>	<b>Code</b>	<b>Elective</b>
1.	PE-MTSE211	Bridge Engineering
2	PE-MTSE212	Analysis of Offshore Structures
3	PE-MTSE213	Deterioration, Instrumentation and Rehabilitation of Structures

**Program Elective –V Courses**

<b>Sr. No.</b>	<b>Code</b>	<b>Elective</b>
1.	PE-MTSE221	Advanced Design of Concrete Structures
2	PE-MTSE222	Theory of Plates
3	PE-MTSE223	Reliability based civil engineering design
4	PE-MTSE224	Theory of Shells
5	PE-MTSE22X	Related NPTEL/Swayam course

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Scheme for S.Y.M.Tech In Civil Engineering with Structural Engineering Subjects, (Semester - III) R23 Academic Year 2025-26														
SR. NO.	Course Name	Code	Course Plan per Week (Hrs)			SL/sem	Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid term (Points)	Mid Term Duration (Hrs.)	IE	Points	Time (Hrs.)		
<b>Value education course</b>														
1	Value Education Course	VE-MTSE30X	2	-	-	32	2	30	1.5	20	100	3	50%	100
<b>Field or Community Engagement Project</b>														
2	Field or Community Engagement Project	FP-MTSE301					2	Continous evaluation shall be defined by course mentor or activity evaluator					100	
<b>Internship/Dissertation</b>														
3	Internship/Dissertation Phase - I	DS-MTSE301	4#+38				14			100*	200\$			300
<b>TOTAL</b>			<b>2</b>				<b>18</b>							<b>500</b>

# - Contact hours with supervisor/mentor/guide = 4

\* - Evaluation shall be based on one or more presentations during the semester. 50% weightage shall be for the report and remaining 50% shall be for presentations.

The evaluation shall be carried out by the allotted guide and atleast one internal examiner

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Scheme for S.Y.M.Tech In Civil Engineering with Structural Engineering Subjects, (Semester - IV) R23 Academic Year 2025-26														
SR. NO.	Course Name	Code	Course Plan per Week (Hrs)			SL/sem	Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid term (Points)	Mid Term Duration (Hrs.)	IE	Points	Time (Hrs.)		
<b>Co-curricular Activity</b>														
1	Co curricular course	CC-MTSE40X	1			16	1	30	1.5	20	100	3	50%	100
<b>Internship/Dissertation</b>														
2	Internship/Dissertation Phase - II	DS-MTSE401	4#+38				14			100*	200 <sup>\$</sup>			300
<b>TOTAL</b>							<b>15</b>							<b>400</b>

# - Contact hours with supervisor/mentor/guide = 4

\* - Evaluation shall be based on one or more presentations during the semester. 50% weightage shall be for the report and remaining 50% shall be for presentations.

The evaluation shall be carried out by the allotted guide and atleast one internal examiner

\$ - 50% weightage shall be for the report and remaining 50% shall be for presentation. The evaluation shall be carried out by the allotted guide and atleast one internal examiner

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**List of Ability Enhancement Courses**

Sr. No.	Code	Courses
1	AE-MTSE201	English For Technical Writing
2	AE-MTSE202	Project Planning and Management

**List of Indian Knowledge System**

Sr. No.	Code	Courses	Sr. No.	Code	Audit Courses
1	IK-MTSE101	Constitution of India	2	IK-MTSE10X	Related NPTEL/SWAYAM Courses

**Open Electives**

Sr. No.	Code	Elective
1	OE-MTSE201	Operations Research
2	OE-MTSE202	Legal Aspects in Construction
3	OE-MTSE203	Business Analytics
4	OE-MTSE204	Cost Management of Engineering Projects
5	OE-MTSE205	Artificial Intelligence in Engineering
6	OE-MTSE20X	Related NPTEL/Swayam Courses

**List of Value Education Courses**

Sr. No.	Code	Courses
1	VE-MTSE301	Disaster Management
2	VE-MTSE302	Introduction to Sustainability and Sustainable Development
3	VE-MTSE303	Safety in construction
4	VE-MTSE30X	Related NPTEL/SWAYAM Courses

### **Evaluation for R23**

1. For passing, student must secure minimum 50% marks in each course with all heads of passing taken together and minimum 50% marks in the end semester examination.
2. Department will offer online course as Program Elective or Open Elective courses subject to availability of a course on <https://swayam.gov.in/>, and NPTEL and availability of internal resources. The assessment criteria for these courses will be as per swayam / NPTEL. After evaluation grades will be awarded as per institute criteria. 2, 3 Credits will be assigned for online courses of 8 and 12 weeks respectively.
3. Assessment criteria for Laboratory/Tutorial work i.e. weightage for assessment shall be as follows: (i) Participation in Laboratory/Tutorial = 20% (ii) Journal/Drawing sheet/Sketch book = 40% (iii) MCQ/oral/test = 40% (5) L – Lecture P – Lab T - Tutorial  
\* 50 Marks for seminar / mini project evaluation and 50 for presentation. The seminar / mini project report should be evaluated by supervisor and at least one internal examiner.  
\* Note 1: 50 Marks for seminar / mini project evaluation and 50 for presentation. Note 2: The seminar report should be evaluated by supervisor and at least one internal examiner.
4. Mid-Semester: The courses under the category “Theory courses (PC, PE, OE)” and “Ability Enhancement Courses (AE)”. The evaluation is based on Mid Term Exam having 30% weightage. Any change in the same will be informed by the course instructor.  
The courses under the category “Skill Enhancement”, “Value Education” and Indian Knowledge system”, the evaluation is based on activity , lab work, Presentation, Test, Mini project, Field project, Practical Examination, viva. This evaluation shall be conducted by course instructor.
5. IE: Internal Evaluation will be carried out by course instructor for 20 points. It is the continuous evaluation through out the semester.  
The evaluation will be based on minimum three of the following activities decided by course instructor. The maximum points that can be assigned to one activity will be 07. The course instructor needs to inform the students and head of the department about the activities those will be considered for IE and the points assigned to them in first week of semester. The course instructor will submit the internal evaluation points (out of 20 with activity wise break up) to examination section before the beginning of End Semester examination.  
List of Activities: 1. Class Involvement 2. Assignments 3. Problem Solving 4. Mini project 5. Quizzes 6. Presentation 7. Oral
6. End semester evaluation: The courses under the category “Theory courses” and “Ability Enhancement Courses”. the evaluation is based on End semester examination of 100 points. **The end semester examination will cover all the modules of the course content.**  
The courses under the category “Skill Enhancement”, “Value Education” and “Indian knowledge system”, the evaluation is based on lab assignment/ activity (Presentation, Test, Mini project, Field project, Practical Examination).
7. \$\$\$\$ The evaluation for Co curricular course/ activity shall be defined by course instructor or activity evaluator. The evaluation of points shall be carried out through out the semester and the grade Pass/ No pass will be awarded which will not be considered for CPI calculation.  
**Note: Refer Academic and Examination rules and regulations for further details.**