

# MVJ College of Engineering

Whitefield, Bangalore

*An Autonomous Institution, Affiliated to VTU, Belagavi*

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

Effective from the academic year 2024-25

## Department of Civil Engineering – M. Tech Structural Engineering

### I SEMESTER (Core Courses related to main Engineering Stream)

I SEMESTER (Core Courses related to main Engineering Stream)												
S. No	Course Type	Course Code	Course Title	Teaching Department	Teaching Hours per Week			Examination				Credits
					Theory	Practical /Seminar	Tutorial/S DA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	IPCC	MVJCSE101	Numerical methods and Optimization Techniques	Mathematics	03	00	00	03	50	50	100	4
2	PCC	MVJCSE102	Mechanics of Deformable Bodies	Civil Engineering	03	00	00	03	50	50	100	3
3	PCC	MVJCSE103	Structural Dynamics and Earthquake Engineering	Civil Engineering	03	00	00	03	50	50	100	3
4	PCC	MVJCSE104	Advanced Design of RC Structures	Civil Engineering	03	00	00	03	50	50	100	3
5	PCC	MVJCSE105	Repairs and Rehabilitation of Structures	Civil Engineering	03	00	00	03	50	50	100	3
6	PCCL	MVJCSEL106	Structural Engineering Lab	Civil Engineering	01	02	00	03	50	50	100	2
7	AUD / AEC	MVJCSE107	Research Methodology and IPR ( <b>Online</b> )		Online courses (online.vtu.ac.in)							PP
									300	300	600	18

### Semester – I

Note: PCC: Professional core courses, PEC Professional Elective Courses, IPCC-Integrated Professional Core Courses. MPS-Mini Project With Seminar. AUD/AEC: Audit Courses / Ability Enhancement Courses (Mandatory), PCCL-Professional Core Course lab. L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities (Hours are for Interaction between faculty and students) PP/NP- Passed / Not Passed (Only for non-Credit Course)

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### Semester – II

II SEMESTER (Core Courses related to main Engineering Stream)												
S. No	Course	Course Code	Course Title	Teaching Department	Teaching Hours per Week			Examination				Credits
					Theory	Practical/Seminar	Tutorial/SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	IPCC	MVJCSE201	Finite Element Methods	Civil Engineering	03	02	00	03	50	50	100	4
2	PCC	MVJCSE202	Advanced Design of Steel Structures	Civil Engineering	03	00	00	03	50	50	100	3
3	PCC	MVJCSE203	Design Concepts of Substructures	Civil Engineering	03	00	00	03	50	50	100	3
4	PCC	MVJCSE204	Special Concrete	Civil Engineering	03	00	00	03	50	50	100	3
5	PEC	MVJCSE205x	Professional Elective 1	Civil Engineering	03	00	00	03	50	50	100	3
6	PEC	MVJCSE206x	Professional Elective 2	Civil Engineering	03	00	00	03	50	50	100	3
7	PCCL	MVJCSEL207	Structural Engineering Lab-II	Civil Engineering	00	03	00	03	50	50	100	2
8	SEC	MVJCSE208	Online MOOC Course		Online courses							1
									350	350	700	22

Note: PCC: Professional core courses, PEC Professional Elective Courses, IPCC-Integrated Professional Core Courses. MPS-Mini Project With Seminar. AUD/AEC: Audit Courses / Ability Enhancement Courses (Mandatory), PCCL-Professional Core Course lab. L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities (Hours are for Interaction between faculty and students) PP/NP- Passed / Not Passed (Only for non-Credit Course).

Professional Elective-1		Professional Elective-2	
Course Code	Course Title	Course Code	Course Title
MVJCSE2051	Advanced Design of Pre-Stressed Concrete Structures	MVJCSE2061	Design of High Rise Structures
MVJCSE 2052	Stability of Structures	MVJCSE2062	Reliability Analysis of Structures
MVJCSE2053	Non Destructive Testing for Civil Engineers	MVJCSE2063	Design of Precast & Composite Structures
MVJCSE2054	Structural Health Monitoring	MVJCSE2064	Design of Concrete Bridges

### Semester – III

Note:**PEC:**Professional Elective Courses, **L-Lecture,P-Practical,T/SDA-Tutorial/Skill Development Activities** (Hours are for Interaction between faculty and students).  
**INT:**Internship: Research Internship / Industry Internship Leading to theproject work /start-up,**PROJ:ProjectPhase-I:** Problem statement out of undergone Internship (Industry /Research) report submission.

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**Semester – III**

<b>III SEMESTER(B)</b>											
Sl.No	Course	CourseCode	CourseTitle	TeachingHours/Week			Examination				Credits
				Theory	Practical/Mini-Project/Internship	Tutorial/Skill Development Activities	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	P	SDA					
1	PEC	MVJCSE3011x	Professional Elective V (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
2	PEC	MVJCSE3012x	Professional Elective VI (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
3	PEC	MVJCSE3013x	Professional Elective VI (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
4	INT	MVJINT3084	Industry Internship	One semester Duration			03	100	100	200	11
<b>TOTAL</b>				<b>09</b>	<b>00</b>	<b>00</b>	<b>12</b>	<b>400</b>	<b>100</b>	<b>500</b>	<b>20</b>

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**Semester – III**

**For the students who are willing to take a research-leading paper publication in Q1/Q2/Q3 Journals and to a PhD Registration**

III SEMESTER (C)											
Sl.No	Course	CourseCode	CourseTitle	TeachingHours/Week				Examination			
				Theory	Practical/Mini Project/Internship	Tutorial/Skill Development Activities	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
				L	P	SDA					
1	PEC	MVJCSE3011x	Professional Elective V (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
2	PEC	MVJCSE3012x	Professional Elective VI (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
3	PEC	MVJCSE3013x	Professional Elective VI (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
4	PEC	MVJCSE3014x	Professional Elective VI (Online Courses) 12 weeks duration	03	00	00	03	100	-	100	3
5	PROJ	MVJPROJ3085	Project Phase-I	One semester Duration			03	100	---	100	6
<b>TOTAL</b>				<b>12</b>	<b>00</b>	<b>00</b>	<b>15</b>	<b>500</b>	<b>---</b>	<b>500</b>	<b>18</b>

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**Semester – IV**

IVSEMESTER(A)										
Sl.No	Course	CourseCode	CourseTitle	TeachingHours/Week		Examination				Credits
				Theory	Practical /Fieldwork	Durationin hours	CIEMarks	SEE MarksViva voce	Total Marks	
				L	P					
1	INT	MVJINT4081	ResearchInternship/IndustryInternshipLeadingto Project Work/Start-up	TwoSemesterDuration		03	100	100	200	12
2	PROJ	MVJMPRJ4082	Project			03	100	100	200	16
TOTAL						06	200	200	400	28

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**Semester – IV**

IVSEMESTER(B)										
Sl.No	Course	CourseCode	CourseTitle	TeachingHours/Week		Examination				Credits
				Theory	Practical /Field woks	Durationi n hours	CIEMarks	SEE MarksVi vavoce	TotalMarks	
				L	P					
1	PROJ	MVJPROJ4081	Project work	--	08	03	100	100	200	20
TOTAL				--	08	03	100	100	200	20



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**Semester – IV**

IV SEMESTER(C)										
Sl.No	Course	CourseCode	CourseTitle	TeachingHours/Week		Examination				Credits
				Theory	Practical /Fieldwork	Duration in hours	CIEMarks	SEE MarksVivoce	TotalMarks	
				L	P					
1	PROJ	MPRJ4081	Project work	--	08	03	100	100	200	22
TOTAL				--	08	03	100	100	200	22