

MVJ College of Engineering, Whitefield, Bangalore 560067  
 An Autonomous Institution, Affiliated to VTU, Belagavi  
**Scheme of Teaching and Examination**  
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)  
 Effective from the Academic Year 2021-22  
 Department of Civil Engineering  
 Semester III

Sl. No	Course		Course Title	BoS	Teaching hrs./week				Examination			Credits	
	Type	Code			Lecture L	Tutorial T	Practical P	Self-Study S	Duration Hrs.	CIE Marks	SEE Marks		Total Marks
1	BSC	MVJ21MA31C	Fourier Series, Transforms, Numerical and Optimization Techniques	Mathematics	3	2	-	-	3	50	50	100	4
2	PCC	MVJ21CV32	Building Materials and Construction Technology	Civil Engineering	4	-	-	-	3	50	50	100	4
3	PCC	MVJ21CV33	Geology and Geoinformatics	Civil Engineering	2	2	-	-	3	50	50	100	3
4	IPCC	MVJ21CV34	Solid Mechanics & Laboratory	Civil Engineering	3	-	2	-	3	100	100	200	4
5	IPCC	MVJ21CV35	Geodetic Information & Practices	Civil Engineering	3	-	2	Y	3	100	100	200	4
6	HSMC	MVJ21KAN36	Kannada	Humanities	1	-	-	-	2	50	50	100	1
7	AEC	MVJ21CVA37	Building Layout Planning	Civil Engineering	1	-	2	-	2	50	50	100	2
8	BSC	MVJ21MATDIP-I	Additional Mathematics-I	Mathematics	1	2	-	-	3	50	50	100	-
Total					17/18	4/6	6	-	-	450/500	450/500	900/1000	22

Kannada will be taught by the following departments- AE, AS, CH, CS, CV, AI & ML

Constitution of India and Professional Ethics will be taught by the following departments-CG,DS,EE,EE,IS,ME

Summer Internship I Viva Voce will be conducted for the 03 weeks inter/intra institutional summer internship activities carried out during the intervening period of II and III semester. The internship will be considered as a head of passing and will be considered for the award of the degree. Those who do not take up / complete the internship will be declared fail and will have to complete during the subsequent examination after satisfying the internship requirements.

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 Semester IV

Sl. No	Course		Course Title	BoS	Teaching hrs./week				Examination			Credits		
	Type	Code			Lecture	Tutorial	Practical	Self-Study	Duration Hrs.	CIE Marks	SEE Marks		Total Marks	
1	BSC	MVJ21MA41C	Complex Analysis, Probability and Sampling Theory	Mathematics	2	2	-	-	3	50	50	100	3	
2	PCC	MVJ21CV42	Analysis of Determinate Structures	Civil Engineering	3	-	-	-	3	50	50	100	3	
3	PCC	MVJ21CV43	Transportation Engineering	Civil Engineering	3	-	-	-	3	50	50	100	3	
4	IPCC	MVJ21CV44	Fluid Mechanics and Hydraulics Machinery Laboratory	Civil Engineering	3	-	2	-	3	100	100	200	4	
5	IPCC	MVJ21CV45	Concrete Technology and Material Testing Laboratory	Civil Engineering	3	-	2	Y	3	100	100	200	4	
6	HSMC	MVJ21CPH46	Constitution of India and Professional Ethics and Cyber Law	Humanities	1	-	-	-	2	50	50	100	1	
7	AEC	MVJ21CVA47	Python for Civil Engineers	Civil Engineering	1	-	2	-	2	50	50	100	2	
8	INT	MVJ21INT48	Summer Internship I	Intra College	-	-	-	-					2	
9	BSC	MVJ21MATDIP-II	Additional Mathematics-II	Mathematics	1	2	-	-	3	50	50	100	-	
Total						16/17	2/4	6	-	-	450/500	450/500	900/1000	22

Kannada will be taught by the following departments- CG, DS, EE, EE, IS, ME

Constitution of India and Professional Ethics will be taught by the following departments- AE, AS, CH, CS, CV, AI & ML

Summer Internship II Viva Voce will be conducted for the 04 weeks industrial/ Govt./NGO/MSME/rural internship/Innovation/ Entrepreneurship summer internship activities carried out during the intervening period of IV and V semester. The internship will be considered as a head of passing and will be considered for the award of the degree. Those who do not take up / complete the internship will be declared fail and will have to complete during the subsequent examination after satisfying the internship requirements.

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Sl. No	Course		Course Title	BoS	Teaching hrs./week				Examination			Credits	
	Type	Code			Lecture L	Tutorial T	Practical P	Self-Study S	Duration Hrs.	CIE Marks	SEE Marks		Total Marks
1	HSMC	MVJ21CV51	Entrepreneurship and Construction Management	Civil Engineering	3	-	-	-	3	50	50	100	3
2	PCC	MVJ21CV52	Analysis of Indeterminate Structures	Civil Engineering	3	-	-	-	3	50	50	100	3
3	IPCC	MVJ21CV53	Design and Detailing of RC Structures	Civil Engineering	3	-	2	-	3	100	100	200	4
4	IPCC	MVJ21CV54	Water Supply and Waste Water Engineering	Civil Engineering	3	-	2	Y	3	100	100	200	4
5	PEC	MVJ21CV55X	Professional Elective-I	Civil Engineering	3	-	-	-	3	50	50	100	3
6	HSMC	MVJ21ENV56	Environmental Studies	Civil Engineering	1	-	-	-	2	50	50	100	1
7	AEC	MVJ21IPR57	Research Methodology & IPR	Civil Engineering	1	2	-	-	2	50	50	100	2
8	UHV	MVJ21UHV58	Universal Human Values	Humanities	2	-	-	-	3	50	50	100	2
Total					19	2	4	-	-	500	500	1000	22

Course Code	Professional Elective-I
MVJ21CV551	Pavement Materials
MVJ21CV552	Water Resources Management
MVJ21CV553	Repair and Rehabilitation of Structures
MVJ21CV554	Traffic Engineering

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Sl. No	Course		Course Title	BoS	Teaching hrs./week				Examination				Credits
	Type	Code			Lecture L	Tutorial T	Practical P	Self-Study S	Duration Hrs.	CIE Marks	SEE Marks	Total Marks	
1	HSMC	MVJ21CV61	Hydrology and Irrigation Engineering	Civil Engineering	2	2	-	-	3	50	50	100	3
2	IPCC	MVJ21CV62	Design and Detailing of Steel Structures	Civil Engineering	3	-	2	-	3	100	100	200	4
3	IPCC	MVJ21CV63	Soil Mechanics, Foundation Engineering & Laboratory	Civil Engineering	3	-	2	Y	3	100	100	200	4
4	OEC	MVJ21CV64X	Open Elective-I	Civil Engineering	3	-	-	-	3	50	50	100	3
5	OEC	MVJ21CV65X	MOOC Course (Open Elective-II)	Online	3	-	-	-	3	50	50	100	3
6	AEC	MVJ21CVA66	Advanced Software in Civil Engineering Application	Civil Engineering	2	-	-	-	2	50	50	100	1
7	PRJ	MVJ21CVMP67	Mini project	Civil Engineering	-	-	4	-	3	50	50	100	2
8	INT	MVJ21INT68	Summer Internship II	Industry	-	-	-	-	3	50	50	100	2
Total					16	2	8	-	-	500	500	1000	22

**Research /Industrial Internship-** shall be carried out during VI and VII-semester for 24 weeks duration. The **Research /Industrial Internship** shall be on Industrial/Govt./NGO/MSME/Rural Internship/Innovation/Entrepreneurship. **Research Internship** must be taken up at Centers of Excellence (CoE)/ Study Centers established in the institute/ at the reputed research organizations. The viva-voce examinations for **Research /Industrial Internship** shall be carried out during VIII semester. Under open elective , departments shall offer only one course. Student will have option to select one course from any of the departments.

Course Code	Open Elective-I
MVJ21CV641	Sustainability Concepts in Engineering
MVJ21CV642	Resource Allocation and Management
MVJ21CV643	Occupational health and safety management

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 Semester VII

Sl. No.	Course		Course Title	BoS	Teaching hrs./week				Examination			Credits	
	Type	Code			Lecture	Tutorial	Practical	Self-Study	Duration Hrs.	CIE Marks	SEE Marks		Total Marks
1	IPCC	MVJ21CV71	Estimation and Project Management	Civil Engineering	3	-	2	-	3	100	100	200	4
2	PEC	MVJ21CV72X	Professional Elective-II	Civil Engineering	3	-	-	-	3	50	50	100	3
3	PEC	MVJ21CV73X	Professional Elective-III	Civil Engineering	3	-	-	-	3	50	50	100	3
4	OEC	MVJ21CV74X	Open Elective-III	Civil Engineering	3	-	-	-	3	50	50	100	3
5	PRJ	MVJ21CVP75	Project Phase-I	Civil Engineering	-	-	4	-	3	50	50	100	2
6	AEC	MVJ21CVA76	Ability Enhancement Course (online – Minimum of 4 weeks duration)	Civil Engineering	1	-	-	-	2	50	50	100	1
Total					13	-	6	-	-	350	350	700	16

Course Code	Professional Elective-II	Course Code	Professional Elective-III	Course Code	Open Elective-III
MVJ21CV721	Design of Pre-stressed Concrete Elements	MVJ21CV731	Pavement Design	MVJ21CV741	Environmental Impact Assessment
MVJ21CV722	Design of Hydraulic Structures	MVJ21CV732	Advanced Foundation Engineering	MVJ21CV742	Remote Sensing and GIS
MVJ21CV723	Solid Waste Management	MVJ21CV733	Construction Methods, Planning and Management	MVJ21CV743	Industrial Pollution & Prevention
MVJ21CV724	Open Channel Hydraulics	MVJ21CV734	Ground Improvement Techniques		

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 Semester VIII

Sl. No.	Course		Course Title	BoS	Teaching hrs./week				Examination				Credits
	Type	Code			Lecture	Tutorial	Practical	Self-Study	Duration Hrs.	CIE Marks	SEE Marks	Total Marks	
1	PRJ	MVJ21CVP81	Project Phase-II	Civil Engineering	-	-	-	-	3	50	50	100	10
2	INT	MVJ21INT82	Research /Industrial Internship	Industry	-	-	-	-	3	50	50	100	5
3	Seminar	MVJ21CVS83	Seminar	Civil Engineering	-	-	-	-	3	50	50	100	1
Total					-	-	-	-	-	150	150	300	16

**List of Courses - MVJ21CV65X - MOOC Course (Open Elective-II) – 6<sup>th</sup> Semester (12 weeks)**

1. Advanced Concrete Technology (NPTEL)
2. Nanomaterials for Civil and Environmental Applications (edX)
3. Availability and Management of Groundwater Resources (SWAYAM)
4. Integrated Waste Management For A Smart City (NPTEL)

**List of Courses - MVJ21CVA76-Ability Enhancement Course (online – Minimum of 4 weeks duration) - 7<sup>th</sup> Semester**

1. BIM Fundamentals for Engineers (Coursera)
2. Plastics in Infrastructure and the Environment (edX)
3. GPS Surveying (NPTEL)
4. Electrical-Based Non-Destructive Testing and Sensing (edX)