



MVJ College of Engineering, Bengaluru
(An Autonomous Institute)

Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Recognised by UGC with 2(f) & 12 (B),
Accredited by NBA & NAAC

Scheme of Teaching and Examination 2021-22

Outcome Based Education (OBE) and Choice Based Credit System (CBCS) Effective from the academic year 2021-22

III SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Examination				Credits
	Type	Code			Theory/lecture	Tutorials	Practical/Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	BSC	MVJ21MA31A	Transforms and Statistical Methods	MA	3	2	0	-	3	50	50	100	4
2	PCC	MVJ21ME32	Engineering Thermodynamics	ME	3	2	0	-	3	50	50	100	4
3	PCC	MVJ21ME33	Mechanics of Materials	ME	3	0	0	-	3	50	50	100	3
4	IPCC	MVJ21ME34	Materials Engineering	ME	3	0	2	-	3	100	100	200	4
5	IPCC	MVJ21ME35	Manufacturing Technology	ME	3	0	2	Y	3	100	100	200	4
6	HSMC	MVJ21CPH36	Constitution of India and Professional Ethics and Cyber law	Any Department	1	0	0	-	2	50	50	100	1
7	AEC	MVJ21MEA37	Spread Sheet for Engineers	ME	1	0	2	-	2	50	50	100	2
8	BSC	MVJ21MATDIP-I	Additional Mathematics	MA	1	2	0	-	3	50	50	100	-
Total					17/18	4/6	6/6	-	19/22	450/500	450/500	900/1000	22

Note: BSC: Basic Science Course, PCC: Professional Core Course, IPCC: Integrated Professional Core Course, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, L: Lecture, T: Tutorial, P: Practical, S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Additional Mathematics-I: The course is a non-credit mandatory course (NCMC) prescribed for III semester lateral entry diploma holders admitted to BE programs. The successful completion of the program is mandatory for the award of the degree.

IV SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Examination				Credits
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	Type	Code			L	T	P	S					
1	BSC	MVJ21MA41A	Complex Variables and Numerical Methods	MA	2	2	0	-	3	50	50	100	3
2	PCC	MVJ21ME42	Theory of Machines	ME	3	0	0	-	3	50	50	100	3
3	PCC	MVJ21ME43	Advanced Manufacturing Technology	ME	3	0	0	-	3	50	50	100	3
4	IPCC	MVJ21ME44	Metrology and Measurements	ME	3	0	2	-	3	100	100	200	4
5	IPCC	MVJ21ME45	Machine Drawing and Operations	ME	3	0	2	Y	3	100	100	200	4
6	HSMC	MVJ21SK/BK46	Kannada	KAN	1	0	0	-	2	50	50	100	1
7	AEC	MVJ21MEA47	Geometric Dimensioning and Tolerancing (GD&T)	ME	1	0	2	-	2	50	50	100	2
8	INT	MVJ21INT48	Summer Internship I	Should be completed during the intervening period of II and III semesters. Intra-College Internship					-	-	-	2	
9	BSC	MVJ21MATDIP-II	Additional Mathematics – II	MA	1	2	0	-	3	50	50	100	-
Total					16/17	2/4	6/6		19/22	450/550	450/550	900/1000	22

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Additional Mathematics-I: The course is a non-credit mandatory course (NMC) prescribed for III semester lateral entry diploma holders admitted to BE programs. The successful completion of the program is mandatory for the award of the degree.

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

V SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Examination				Credits
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	Type	Code			L	T	P	S					
1	HSMC	MVJ21ME51	Technical Management and Entrepreneurship	ME	3	0	0	-	3	50	50	100	3
2	PCC	MVJ21ME52	Mechanical Vibrations	ME	3	0	0	-	3	50	50	100	3
3	IPCC	MVJ21ME53	Fluid Mechanics & Machinery	ME	2	2	2	-	3	100	100	200	4
4	IPCC	MVJ21ME54	Design of Machine Elements	ME	2	2	2	Y	3	100	100	200	4
5	PEC	MVJ21ME55X	Professional Elective Course - I	ME	3	0	0	-	3	50	50	100	3
6	HSMC	MVJ21ENV56	Environmental Studies	CV	1	0	0	-	2	50	50	100	1
7	AEC	MVJ21RMI57	Research Methodology & IPR	AE	1	2	0	-	2	50	50	100	2
8	UHV	MVJ21UHV58	Universal Human Values	CV	2	0	0	-	2	50	50	100	2
Total					17	6	4	-	21	500	500	1000	22

Note: HSMC: Humanity and Social Science & Management Course, PCC: Professional Core Course, IPCC: Integrated Professional Core Course, PEC: Professional Elective Course, AEC: Ability Enhancement Course, UHV: Universal Human Values, L: Lecture, T: Tutorial, P: Practical, S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Professional Elective Course – I
MVJ21ME551	Computer Integrated Manufacturing
MVJ21ME552	Industrial Internet of Things
MVJ21ME553	Supply Chain Management
MVJ21ME554	Smart Materials and Structures

VI SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Examination			Credits	
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks		Total Marks
	Type	Code			L	T	P	S					
1	HSMC	MVJ21ME61	Operations Research	ME	3	0	0	-	3	50	50	100	3
2	IPCC	MVJ21ME62	Heat Transfer	ME	2	2	2	-	3	100	100	200	4
3	IPCC	MVJ21ME63	Energy Conversion Technology	ME	2	2	2	Y	3	100	100	200	4
4	OEC	MVJ21ME64X	Open Elective Course - I	ME	3	0	0	-	3	50	50	100	3
5	OEC	MVJ21ME65X	MOOC Courses (Open Elective Course - II)	ME	A twelve-week course should be selected from online platforms like NPTEL/SWAYAM								3
6	AEC	MVJ21MEA66	Design Thinking, AI and ML for Mechanical Engineers	ME	0	0	2	-	2	50	50	100	1
7	PRJ	MVJ21MEMP67	Mini project	ME	0	0	4	-	3	50	50	100	2
8	INT	MVJ21INT68	Summer Internship II	ME	Completed during the intervening period of IV and V semesters					50	50	100	2
Total					10	4	10	-	18	450	450	900	22

Note: HSMC: Humanity and Social Science & Management Course, IPCC: Integrated Professional Core Course, OEC: Open Elective Course, AEC: Ability Enhancement Course, PRJ: Project, INT: Internship, L: Lecture, T: Tutorial, P: Practical, S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Summer Internship-II: Viva voice 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 semesters. The internship will be considered as a head of passing and will be considered for the award of degree. Those, who do not take up / complete the internship will be declared fail and will have to complete during subsequent examination after satisfying the internship requirements.

Course Code	Open Elective Course - I
MVJ21ME641	Automotive Engineering
MVJ21ME642	Operations Management
MVJ21ME643	Engineering Economics
MVJ21ME644	Non-Conventional Energy Sources

VII SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Examination				Credits
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	Type	Code			L	T	P	S					
1	IPCC	MVJ21ME71	Finite Element Methods	ME	3	0	2		3	100	100	200	4
2	PEC	MVJ21ME72X	Professional Elective II	ME	3	0	0		3	50	50	100	3
3	PEC	MVJ21ME73X	Professional Elective III	ME	3	0	0		3	50	50	100	3
4	OEC	MVJ21ME74X	Open Elective Course - III	ME	3	0	0		3	50	50	100	3
5	PRJ	MVJ21MEP75	Project Phase I	ME	0	0	4		3	50	50	100	2
6	AEC	MVJ21ME76	Ability Enhancement Course – IV	ME	A four-week course should be selected from online platforms							1	
Total					12	0	6		15	300	300	600	16
Note: IPCC: Integrated Professional Core Course, PEC: Professional Elective Course, OEC: Open Elective Course, PRJ: Project, AEC: Ability Enhancement Course, L: Lecture, T: Tutorial, P: Practical, S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.													

Course Code	Professional Elective Course -II	Course Code	Professional Elective Course - III	Course Code	Open Elective Course-III
MVJ21ME721	Non-Destructive Testing	MVJ21ME731	Design of Experiments	MVJ21ME741	Composite Materials
MVJ21ME722	Mechatronic System Design	MVJ21ME732	Noise, Vibration, and Harshness	MVJ21ME742	Product Design and Ergonomics
MVJ21ME723	Electric and Hybrid Vehicles Technology	MVJ21ME733	Theory of Plasticity	MVJ21ME743	Additive Manufacturing
MVJ21ME724	Computational Mechanics	MVJ21ME734	Solar Energy	MVJ21ME744	Nano Technology

VIII SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Examination				Credits
	Type	Code			Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PRJ	MVJ21MEP81	Project Phase-II	ME	-	-	20	-	3	50	50	100	10
2	INT	MVJ21INT82	Research /Industrial Internship	ME	Should be completed in 24 weeks, beginning after the sixth semester, and continuing through the seventh and eighth semesters.				3	50	50	100	5
3	SEM	MVJ21MES83	Seminar	ME	-	-	2	-	-	100	-	100	1
Total					-	-	22	-	6	200	100	300	16

Note: PRJ: Project, INT: Internship, SEM: Seminar, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Research/Industrial Internship: Viva voice will be conducted for the 24 weeks Research/Industrial/Rural Internship activities carried out during beginning after the sixth semester test and continuing through the seventh and eighth semesters. The internship will be considered as a head of passing and will be considered for the award of degree. Those, who do not take up / complete the internship will be declared fail and will have to complete during subsequent examination after satisfying the internship requirements.

HOD

Dean Academics