

MVJ College of Engineering, Whitefield, Bangalore

An Autonomous Institution, Affiliated to VTU, Belagavi

Scheme of Teaching and Examination 2020-21

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

Effective from the academic year 2021-22

Department of Computer Science & Engineering

III SEMESTER B.E. (6 Theory, 2 Labs, 1 Kannada/CPH, 1 MATDIP, 1 AICTE Activity)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	L	T			P							
1	BSC	MVJ20MCS31	Discrete Mathematical Structures And Probability	Mathematics	3	0	0	3	50	50	100	3
2	PCC	MVJ20CS32	Data Structures and Applications	CSE Dept	4	0	0	3	50	50	100	4
3	PCC	MVJ20CS33	Object Oriented Programming	CSE Dept	3	0	0	3	50	50	100	3
4	PCC	MVJ20CS34	Operating Systems	CSE Dept	3	0	0	3	50	50	100	3
5	PCC	MVJ20CS35	Computer Organization and Architecture	CSE Dept	3	0	0	3	50	50	100	3
6	PCC	MVJ20CS36	Python Programming	CSE Dept	3	0	0	3	50	50	100	3
7	PCC	MVJ20CSL37	Data Structures and Applications Laboratory	CSE Dept	0	0	4	3	50	50	100	2
8	PCC	MVJ20CSL38	Python Programming Laboratory	CSE/ECE Dept	0	0	4	3	50	50	100	2
9	HSMC	MVJ20SK/BK39	Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ20CPH39	CPH					3	50	50		
10	NCMC	MVJ20MATDIP301	Additional Mathematics-1	Mathematics				3	50	50	100	-
	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					20	0	8	30	500	500	1000	24

Note: BSC: Basic Science, PCC: Professional Core Course, HSMC: Humanity and Social Science
MVJ19MXXDIP301- Mandatory non-credit course, NCMC: Non-credit mandatory course

IV SEMESTER B.E. (6 Theory, 2 Labs, 1 Kannada/CPH, 1 MATDIP, 1 AICTE Activity)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
	Type	Code			Theory Lect	Tutorial	Practical/Dra	Duration in Hours	CIE Marks	SEE Marks	Total marks	
1	BSC	MVJ20MCS41	Operations Research, Numerical and Statistical Methods	Mathematics	3	0	0	3	50	50	100	3
2	PCC	MVJ20CS42	Analysis and Design of Algorithms	CSE Dept	4	0	0	3	50	50	100	4
3	PCC	MVJ20CS43	Software Engineering	CSE Dept	3	0	0	3	50	50	100	3
4	PCC	MVJ20CS44	Linux Internals	CSE Dept	3	0	0	3	50	50	100	3
5	PCC	MVJ20CS45	Micro Controller and Embedded Systems	CSE Dept	3	0	0	3	50	50	100	3
6	PCC	MVJ20CS46	Artificial Intelligence	CSE Dept	3	0	0	3	50	50	100	3
7	PCC	MVJ20CSL47	Analysis and Design of Algorithms Lab	CSE Dept	0	0	4	3	50	50	100	2
8	PCC	MVJ20CSL48	Micro Controller and Embedded Systems Lab	CSE/ECE Dept	0	0	4	3	50	50	100	2
9	HSMC	MVJ20SK/BK49	Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ20CPH49	CPH					3	50	50		
10	NCMC	MVJ20MATDIP401	Additional Mathematics-2	Mathematics				3	50	50	100	-
	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					22	2	8	30	500	500	1000	24

Note: BSC: Basic Science, PCC: Professional Core Course , HSMC: Humanity and Social Science
 MVJ19MXXDIP401- Mandatory non-credit course, NCMC: Non-credit mandatory course

V SEMESTER B.E. (5 Theory, 3 Labs, 1 Environmental study, 1 UHV,1 AICTE Activity)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	L	T			P							
1	HSMC	MVJ20TIM51	Technical Management & Entrepreneurship	CSE Dept	3	0	0	3	50	50	100	3
2	PCC	MVJ20CS52	Data base Management Systems	CSE Dept	3	2	0	3	50	50	100	4
3	PCC	MVJ20CS53	Data Communications & Computer Networks	CSE Dept	3	0	2	3	50	50	100	4
4	PCC	MVJ20CS54	Web Programming	CSE Dept	3	0	0	3	50	50	100	3
5	PE	MVJ20CS55X	Professional Elective – I	CSE Dept	3	0	0	3	50	50	100	3
6	PCC	MVJ20CSL56	Database management Systems Laboratory	CSE Dept	0	0	4	3	50	50	100	2
7	PCC	MVJ20CSL57	Communication Network Laboratory	CSE Dept	0	0	4	3	50	50	100	2
8	PCC	MVJ20CSL58	Web Programming Laboratory	CSE Dept	0	0	4	3	50	50	100	2
9	HSMC	MVJ20ENV504	Environmental Studies	Humanities	1	0	0	3	50	50	100	1
10	HSMC	MVJ20UHV510	Universal Human Values II	Humanities	2	0	0					2
	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					20	2	14	27	450	450	1000	26

Note: PCC: Professional Core Course , PE: Professional Elective, HSMC: Humanity and Social Science, NCMC: Non-credit mandatory course

Course Code	Professional Elective-I
MVJ19CS551	Theory of Computation
MVJ19CS552	Software Testing
MVJ19CS553	Law for Engineers
MVJ19CS554	Parallel and Distributed Systems

VI SEMESTER B.E. (5 Theory, 2 Labs, 1 Mini Project, 1 AICTE Activity)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	L	T			P							
1	PCC	MVJ20CS61	Compiler Design	CSE Dept	3	2	0	3	50	50	100	4
2	PCC	MVJ20CS62	Cryptography and Network Security	CSE Dept	3	2	0	3	50	50	100	4
3	PE	MVJ20CS63X	Professional Elective-II	CSE Dept	3	0	0	3	50	50	100	3
4	PE	MVJ20CS64X	Professional Elective-III	CSE Dept	3	0	0	3	50	50	100	3
5	OE	MVJ20CS65X	Open Elective-I	CSE Dept	3	0	0	3	50	50	100	3
6	PCC	MVJ20CSL66	Compiler Design Laboratory	CSE Dept	0	0	4	3	50	50	100	2
7	PCC	MVJ20CSL67	Cryptography and Network Security Laboratory	CSE Dept	0	0	4	3	50	50	100	2
8	Proj	MVJ20CSP68	Mini-Project/product development	CSE Dept	-	-	-	3	50	50	100	3
9	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total								24	400	400	800	24

Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work, NCMC: Non-credit mandatory course

Course Code	Professional Elective-II	Course Code	Professional Elective-III	Course Code	Open Elective-I
MVJ20CS631	Mobile Application development	MVJ20CS641	Information Retrieval Techniques	MVJ20CS651	Object Oriented Analysis and Design
MVJ20CS632	Cloud Computing	MVJ20CS642	Data Analytics	MVJ20CS652	Web Technologies
MVJ20CS633	Agile Technologies	MVJ20CS643	Game Theory	MVJ20CS653	Networks and Systems Security
MVJ20CS634	Social Network Analysis /TVS Certification course	MVJ20CS644	User Interface Design	MVJ20CS654	Mobile Computing

VII SEMESTER B.E. (5 Theory, 2 Labs, Project Phase-I, 1 AICTE Activity)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	L	T			P							
1	PCC	MVJ20CS71	Internet of Things	CSE Dept	4	0	0	3	50	50	100	4
2	PCC	MVJ20CS72	Machine Learning	CSE Dept	4	0	0	3	50	50	100	4
3	PE	MVJ20CS73X	Professional Elective-IV	CSE Dept	3	0	0	3	50	50	100	3
4	PE	MVJ20CS74X	Professional Elective-V	CSE Dept	3	0	0	3	50	50	100	3
5	OE	MVJ20CS75X	Open Elective-II	CSE Dept	3	0	0	3	50	50	100	3
6	PCC	MVJ20CSL76	Internet of Things Lab	CSE Dept	0	0	4	3	50	50	100	2
7	PCC	MVJ20CSL77	Machine Learning Lab	CSE Dept	0	0	4	3	50	50	100	2
8	Proj	MVJ20CSP78	Project Phase-1	CSE Dept	-	-	-	-	50	-	50	2
9	NCMC	AICTE Activity for 80-90 hours (20 points)			-	-	-	-	-	-	-	-
Total					17	0	8	21	400	350	750	23
Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work , NCMC: Non-credit mandatory course												

Course Code	Professional Elective-IV	Course Code	Professional Elective-V	Course Code	Open Elective-II
MVJ20CS731	Green Computing	MVJ20CS741	Deep Learning	MVJ20CS751	Python Programming
MVJ20CS732	Ethical Hacking	MVJ20CS742	Natural Language Processing	MVJ20CS752	Cyber Forensics and IPR
MVJ20CS733	Digital Forensics	MVJ20CS743	Human Computer Interaction	MVJ20CS753	Mobile Application development
MVJ20CS734	Soft Computing <i>/ Data Analytics (TVS Certification course)</i>	MVJ20CS744	Block chain Technology	MVJ20CS754	Machine Learning & its Application

VIII SEMESTER B.E. (Project Phase-II, Internship, 1 Technical Seminar, 1 Certification course, 1 AICTE Activity)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	L	T			P							
1	Proj	MVJ20CSP81	Project Phase-2	CSE Dept	-	-	-	3	50	50	100	8
2	Int	MVJ20CSI82	Internship	CSE Dept	-	-	-	3	50	50	100	3
3	Sem	MVJ20CSS83	Seminar	CSE Dept	-	-	-	3	50	50	100	1
4	CRT	MVJ20CSC84	*Certification course	Industry/Institute	-	-	-	-	-	-	-	2
5	NCMC	AICTE Activity for 80-90 hours (20 points)			-	-	-	-	-	-	-	-
Total								9	150	150	300	14

Note: Proj: Project Work, Int.: Internship, Sem : Seminar, CRT: Certification Course (Can be carried out during the program period but same will reflect in the final semester grade card) NCMC: Non-credit mandatory course

* Students can opt maximum 2 certification courses covering minimum total of 30 Hours (for scoring 2 Credits in VIII sem). Students can opt either 1 course covering 30 Hours or maximum 2 courses covering 15 Hours by each course. Students can start certification course from V sem itself instead of waiting till VIII sem. Once they complete VIII sem, based on number of Hours of certification (Min. 30 Hours) Credit will be awarded.

List of proposed Coursera Certification Courses	Course duration (Hours)	Link for the Course
Agile Software Development	12.8	https://www.coursera.org/learn/agile-software-development
Text Mining and Analytics	15.4	https://www.coursera.org/learn/text-mining
Web Application Development with JavaScript and MongoDB	18.4	https://www.coursera.org/learn/web-application-development

Using Python to Interact with the Operating System	29.6	https://www.coursera.org/learn/python-operating-system
Python for Data Science and AI	11.4	https://www.coursera.org/learn/python-for-applied-data-science-ai
R Programming	19.5	https://www.coursera.org/learn/r-programming
Multiplatform Mobile App Development with React Native	22.3	https://www.coursera.org/learn/react-native
Data Structures and Design Patterns for Game Developers	15.1	https://www.coursera.org/learn/data-structures-design-patterns
DevOps Culture and Mindset	15.2	https://www.coursera.org/learn/devops-culture-and-mindset