

An Autonomous Institution, Affiliated to VTU, Belagavi
MVJ College of Engineering, Whitefield, Bangalore
 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, 1 UHV)

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	3	2	0	3	50	50	100	4
3	PCC	MVJ20CS33	Object Oriented Programming	CSE	3	0	0	3	50	50	100	3
4	PCC	MVJ20CS34	Operating Systems	CSE	3	0	0	3	50	50	100	3
5	PCC	MVJ20CS35	Computer Organization and Architecture	CSE	3	0	0	3	50	50	100	3
6	PCC	MVJ20CS36	Analog and Digital Electronics	CSE	3	0	0	3	50	50	100	3
7	PCC	MVJ20CSL37	Data Structures and Applications Laboratory	CSE	0	2	2	3	50	50	100	2
8	PCC	MVJ20CSL38	Analog and Digital Electronics Laboratory	CSE/ECE	0	2	2	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	MVJ20MATDIP31	Additional Mathematics-1	Mathematics				3	50	50	100	-
11	HSMC	MVJ20UHV302	Universal Human Values I	Humanities	1	0	0					1
	NCMC	AICTE Activity 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					20	0	8	30	500	500	1000	25

Note: BSC: Science, Professional Course, HSMC: Humanity and Social Science MVJ19MXXDIP31- non-credit course, mandatory

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 / Draw	Duration in Hours	CIF Marks	SEF Marks	Total marks				
					L	T	P								
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	3	2	0				3	50	50	100	4
3	PCC	MVJ20CS43	Software Engineering	CSE	3	0	0				3	50	50	100	3
4	PCC	MVJ20CS44	Python Programming	CSE	3	0	0				3	50	50	100	3
5	PCC	MVJ20CS45	Micro Controller and Embedded Systems	CSE	3	0	0				3	50	50	100	3
6	PCC	MVJ20CS46	Artificial Intelligence	CSE	3	0	0				3	50	50	100	3
7	PCC	MVJ20CSL47	Analysis and Design of Algorithms Lab using Python	CSE	0	2	2				3	50	50	100	2
8	PCC	MVJ20CSL48	Micro Controller and Embedded Systems Lab	CSE/ECE	0	2	2				3	50	50	100	2
9	HSM C	MVJ20SK/BK49	Kannada	Humanities	1	0	0				3	50	50	100	1
		MVJ20CPH49	CPH					3	50	50					
10	NCMC	MVJ20MATDIP41	Additional Mathematics-2	Mathematics							3	50	50	100	-
	NCMC	AICTE Activity for 80-90 hours(20 points)		-	-	-	-	-	-	-	-	-	-	-	-
			Total	Total	22	2	8				30	500	500	1000	24

Note: BSC: Basic Science, PCC: Professional Core Course, HSMC: Humanity and Social Science
 MVJ20MXXDIP401-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	3	0	0	3	50	50	100	3
2	PCC	MVJ20CS52	Data base Management Systems	CSE	3	2	0	3	50	50	100	4
3	PCC	MVJ20CS53	Data Communications & Computer Networks	CSE	3	2	0	3	50	50	100	4
4	PCC	MVJ20CS54	Web Programming	CSE	3	0	0	3	50	50	100	3
5	PE	MVJ20CS55X	Professional Elective – I	CSE	3	0	0	3	50	50	100	3
6	PCC	MVJ20CSL56	Database management Systems Laboratory	CSE	0	0	4	3	50	50	100	2
7	PCC	MVJ20CSL57	Communication Network Laboratory	CSE	0	2	2	3	50	50	100	2
8	PCC	MVJ20CSL58	Web Programming Laboratory	CSE	0	2	2	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	Linux Internals

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
	Type	Code			Theory	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks		
1	PCC	MVJ20CS61	Compiler Design	CSE	3	2	0	3	50	50	100	4	
2	PCC	MVJ20CS62	Cryptography and Network Security	CSE	3	2	0	3	50	50	100	4	
3	PE	MVJ20CS63 X	Professional Elective-II	CSE	3	0	0	3	50	50	100	3	
4	PE	MVJ20CS64 X	Professional Elective-III	CSE	3	0	0	3	50	50	100	3	
5	OE	MVJ20CS65 X	Open Elective-I	CSE	3	0	0	3	50	50	100	3	
6	PCC	MVJ20CSL6 6	Compiler Design Laboratory	CSE	0	2	2	3	50	50	100	2	
7	PCC	MVJ20CSL67	Cryptography and Network Security Laboratory	CSE	0	2	2	3	50	50	100	2	
8	Proj	MVJ20CSP6 8	Mini-Project/product development	CSE	-	-	-	2	50	50	100	2	
9	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-	
Total								24	400	400	800	23	

Note:PCC:ProfessionalCoreCourse,PE:ProfessionalElective,OE:OpenElective,Proj:ProjectWork,NCMC:Non-creditmandatorycourse

Course Code	Professional Elective-II	Course Code	Professional Elective-III	Course Code	Open Elective-I
MVJ20CS63 1	Mobile Application development	MVJ20CS641	Information Retrieval Techniques	MVJ20CS651	Object Oriented Analysis and Design
MVJ20CS63 2	Cloud Computing	MVJ20CS642	Data Analytics	MVJ20CS652	Web Technologies
MVJ20CS63 3	Agile Technologies	MVJ20CS643	Game Theory	MVJ20CS653	Networks and Systems Security

MVJ20CS63
4

Social Network Analysis

MVJ20CS644

User Interface Design

MVJ20CS654

Mobile Computing

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

S No	Course		Teaching Department	Teaching hours/week				Examination				Credits
	Type	Code		Course Title	Theory	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
1	PCC	MVJ20CS71	CSE	Internet of Things	3	2	0	3	50	50	100	4
2	PCC	MVJ20CS72	CSE	Machine Learning	3	2	0	3	50	50	100	4
3	PE	MVJ20CS73X	CSE	Professional Elective-IV	3	0	0	3	50	50	100	3
4	PE	MVJ20CS74X	CSE	Professional Elective-V	3	0	0	3	50	50	100	3
5	OE	MVJ20CS75X	CSE	Open Elective-II	3	0	0	3	50	50	100	3
6	PCC	MVJ20CSL76	CSE	Internet of Things Lab	0	2	2	3	50	50	100	2
7	PCC	MVJ20CSL77	CSE	Machine Learning Lab	0	2	2	3	50	50	100	2
8	Proj	MVJ20CSP78	CSE	Project Phase-1	-	-	-	-	50	-	50	2
9	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
				Total	17	6	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							
MVJ20CS73	Green Computing	MVJ20CS741	Deep Learning	MVJ20CS751	Python Programming							
MVJ20CS73	Ethical Hacking	MVJ20CS742	Natural Language Processing	MVJ20CS752	Cyber Forensics and IPR							
MVJ20CS73	Digital Forensics	MVJ20CS743	Human Computer Interaction	MVJ20CS753	Mobile Application development							
MVJ20CS73	Soft Computing	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
	Type	Code			Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
					L	T	P					
1	Proj	MVJ20CSP81	ProjectPhase-2	CSE	-	-	-	3	50	50	100	8
2	Int	MVJ20CSI82	Internship	CSE	-	-	-	3	50	50	100	3
3	Sem	MVJ20CSS83	Seminar	CSE	-	-	-	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, Internship, Seminar, Course(Can be carried out during the program period but 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 .30Hours) 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

