

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 2020-21

Department of Information 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	MVJ20MIS31	Discrete Math & Probability Theory	Mathematics	2	2	0	3	50	50	100	3
2	PCC	MVJ20IS32	Data Structure	ISE Dept	3	2	0	3	50	50	100	4
3	PCC	MVJ20IS33	Analog & Digital Electronics	ISE/ECE Dept	3	1	0	3	50	50	100	3
4	PCC	MVJ20IS34	Data Communication	ISE Dept	3	1	0	3	50	50	100	3
5	PCC	MVJ20IS35	Computer Organization & Architecture	ISE Dept	3	1	0	3	50	50	100	3
6	PCC	MVJ20IS36	Software Engineering	ISE Dept	3	1	0	3	50	50	100	3
7	PCC	MVJ20ISL37	Data Structure Lab	ISE Dept	0	1	2	3	50	50	100	2
8	PCC	MVJ20ISL38	Analog & Digital Electronics Lab	ISE/ECE Dept	0	1	2	3	50	50	100	2
9	HSMC	MVJ20SK/BK39	Samskruthika Kannada/Balake Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ20CPH39	CPH					3	50	50		
10	HSMC	MVJ20UHV310	UHV-I	ISE Dept	1	0	0	3	50	50	100	1
11	NCMC	MVJ20MISDIP301	Additional Mathematics-1	Mathematics				3	50	50	100	-
12	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					19	10	4	30	500	500	1000	25

Note: BSC: Basic Science, PCC: Professional Core Course , HSMC: Humanity and Social Science
MVJ20MXXDIP301- 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		
											L	
1	BSC	MVJ20MIS41	Numerical Methods, Operations Research & Statistics	Mathematics	3	1	0	3	50	50	100	3
2	PCC	MVJ20IS42	Design & Analysis of Algorithm	ISE Dept	3	2	0	3	50	50	100	4
3	PCC	MVJ20IS43	Microcontroller & Embedded Systems	ISE Dept	3	1	0	3	50	50	100	3
4	PCC	MVJ20IS44	Object Oriented Programming Concepts	ISE Dept	3	1	0	3	50	50	100	3
5	PCC	MVJ20IS45	Operating System	ISE Dept	3	1	0	3	50	50	100	3
6	PCC	MVJ20IS46	Theory of Computation	ISE Dept	4	0	0	3	50	50	100	3
7	PCC	MVJ20ISL47	Design & Analysis of Algorithm Lab	ISE Dept	0	1	2	3	50	50	100	2
8	PCC	MVJ20ISL48	Microcontroller & Embedded Systems Lab	ISE/ECE Dept	0	1	2	3	50	50	100	2
9	HSMC	MVJ20SK/BK49	Samskruthika Kannada/Balake Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ20CPH49	CPH					3	50	50		
10	NCMC	MVJ20MISDIP401	Additional Mathematics-2	Mathematics				3	50	50	100	-
11	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					20	8	4	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	ISE Dept	4	0	0	3	50	50	100	3
2	PCC	MVJ20IS52	Computer Network	ISE Dept	3	2	0	3	50	50	100	4
3	PCC	MVJ20IS53	Python Programming	ISE Dept	3	2	0	3	50	50	100	4
4	PCC	MVJ20IS54	Database Management System	ISE Dept	3	1	0	3	50	50	100	3
5	PE	MVJ20IS55X	Professional Elective-I	ISE Dept	3	0	1	3	50	50	100	3
6	PCC	MVJ20ISL56	Computer Network Lab	ISE Dept	0	1	2	3	50	50	100	2
7	PCC	MVJ20ISL57	Operating System & Shell Programming Lab	ISE Dept	0	1	2	3	50	50	100	2
8	PCC	MVJ20ISL58	Database Management System Lab	ISE Dept	0	1	2	3	50	50	100	2
9	HSMC	MVJ20ENV59	Environmental Studies	Humanities	1	0	0	3	50	50	100	1
10	HSMC	MVJ20UHV510	UHV-II	Humanities	2	0	0	3	50	50	100	2
11	NCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					19	8	7	30	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
MVJ20IS551	Advanced Java & J2EE
MVJ20IS552	System Software
MVJ20IS553	System Modeling & Simulation
MVJ20IS554	Information Coding Techniques

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	MVJ20IS61	Artificial Intelligence	ISE Dept	3	2	0	3	50	50	100	4
2	PCC	MVJ20IS62	IoT	ISE Dept	3	2	0	3	50	50	100	4
3	PE	MVJ20IS63X	Professional Elective-II	ISE Dept	4	0	0	3	50	50	100	3
4	PE	MVJ20IS64X	Professional Elective-III	ISE Dept	4	0	0	3	50	50	100	3
5	OE	MVJ20IS65X	Open Elective-I	ISE Dept	3	1	0	3	50	50	100	3
6	PCC	MVJ20ISL66	Artificial Intelligence Lab	ISE Dept	0	1	2	3	50	50	100	2
7	PCC	MVJ20ISL67	IoT Lab	ISE Dept	0	1	2	3	50	50	100	2
8	Proj	MVJ20ISP68	Mini-Project/product development	ISE Dept	-	-	-	3	50	50	100	3
9	NCCMC	AICTE Activity for 80-90 hours (20 points)		-	-	-	-	-	-	-	-	-
Total					17	7	4	24	400	400	800	24
Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work, NCCMC: Non-credit mandatory course												

Course Code	Professional Elective-II	Course Code	Professional Elective-III	Course Code	Open Elective-I
MVJ20IS631	Data Mining & Data Warehouse	MVJ20IS641	Unix System Programming	MVJ20IS651	Wireless Sensor & Adhoc Network
MVJ20IS632	Web Technology	MVJ20IS642	Virtual Reality	MVJ20IS652	TCP/IP Protocol Suit
MVJ20IS633	Information Storage Management	MVJ20IS643	Cryptography and Information Security	MVJ20IS653	Programming Language Principles
MVJ20IS634	Law for Engineers	MVJ20IS644	Green Computing	MVJ20IS654	Free & Open Source Software

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	MVJ20IS71	Machine Learning	ISE Dept	4	1	0	3	50	50	100	4
2	PCC	MVJ20IS72	Bigdata & Hadoop	ISE Dept	4	1	0	3	50	50	100	4
3	PE	MVJ20IS73X	Professional Elective-IV	ISE Dept	3	1	0	3	50	50	100	3
4	PE	MVJ20IS74X	Professional Elective-V	ISE Dept	3	1	0	3	50	50	100	3
5	OE	MVJ20IS75X	Open Elective-II	ISE Dept	4	0	0	3	50	50	100	3
6	PCC	MVJ20ISL76	Machine Learning Lab	ISE Dept	0	1	2	3	50	50	100	2
7	PCC	MVJ20ISL77	Bigdata & Hadoop Lab	ISE Dept	0	1	2	3	50	50	100	2
8	Proj	MVJ20ISP78	Project Phase-I	ISE Dept	-	-	-	-	50	-	50	2
9	NCMC	AICTE Activity for 80-90 hours (20 points)			-	-	-	-	-	-	-	-
Total					18	6	4	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
MVJ20IS731	Data Science using R	MVJ20IS741	Unified Object Oriented Modeling & Design	MVJ20IS751	Cloud Computing
MVJ20IS732	Deep Learning	MVJ20IS742	Information Retrieval & Visualization	MVJ20IS752	Mobile Computing
MVJ20IS733	Blockchain Technology	MVJ20IS743	Software Testing	MVJ20IS753	Pattern Recognition
MVJ20IS734	Natural Language Processing	MVJ20IS744	Cyber Security, Law & Ethics	MVJ20IS754	Ethical Hacking

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	MVJ20ISP81	Project Phase-II	ISE Dept	-	-	-	3	50	50	100	10
2	Int	MVJ20ISI82	Internship	ISE Dept	-	-	-	3	50	50	100	3
3	Sem	MVJ20ISS83	Seminar	ISE Dept	-	-	-	3	50	50	100	1
4	CRT	MVJ20ISC84	Certification course	Industry/Institute	-	-	-	-	-	-	-	2
5	NCMC	AICTE Activity for 80-90 hours (20 points)			-	-	-	-	-	-	-	-
Total								9	250	250	500	16

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