

Scheme of Teaching and Examination

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

Effective from the academic year 2021-22

Department of Computer Science and Engineering (Data Science)

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	MVJ21MA31X	Discrete Mathematical Structures and Probability	Mathematics	2	2	-	-	3	50	50	100	4
2	PCC	MVJ21CD32	Object Oriented Programming	CD	4	-	-	-	3	50	50	100	4
3	PCC	MVJ21CD33	Operating Systems	CD	2	2	-	-	3	50	50	100	3
4	IPCC	MVJ21CD34	Data Structures and Applications Lab	CD	3	-	2	-	3	100	100	200	4
5	IPCC	MVJ21CD35	Analog and Digital Electronics and Lab	CD	3	-	2	Y	3	100	100	200	4
6	HSMC	MVJ21CD36	Kannada/ Constitution of India and Professional Ethics and Cyber law	Humanities	1				2	50	50	100	1
7	AEC	MVJ21CDA37	Software Design Engineering	CD	1		2		2	50	50	100	2
8	BSC	MVJ21MATDIP-I	Additional Mathematics-1	Mathematics	1	2			3	50	50	100	-
Total					16/17	4/6	6			450/500	450/500	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 L	Tutorial T	Practical P	Self-Study S	Duration Hrs.	CIE Marks	SEE Marks	Total Marks	
1	BSC	MVJ21MCS41	Numerical Methods Operational research and Statistics	Mathe matics	2	2	-	-	3	50	50	100	3
2	PCC	MVJ21CD42	Information Retrieval	CD	3		-	-	3	50	50	100	3
3	PCC	MVJ21CD43	Computer Organization and Architecture	CD	3		-	-	3	50	50	100	3
4	IPCC	MVJ21CD44	Python Programming and Lab	CD	3		2	-	3	100	100	200	4
5	IPCC	MVJ21CD45	Design Analysis of Algorithms and Lab	CD	3		2	Y	3	100	100	200	4
6	HSMC	MVJ21CD46	Kannada/ Constitution of India and Professional Ethics and Cyber law	Huma nities	1	-			2	50	50	100	1
7	AEC	MVJ21CDA47	Linux Programming		1	-	2		2	50	50	100	2
8	INT	MVJ21INT48	Summer Internship I		-	-	-			100	-	100	2
9	BSC	MVJ21MATDI P-II	Additional Mathematics-1	Mathe matics	1	2	-	-	3	50	50	100	-
Total						16/17	2/4	6		450/500	450/500	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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Semester V

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	HSM C	MVJ21SPM51	Software Engineering and Project Management	CD	3	-	-	-	3	50	50	100	3
2	PCC	MVJ21CD52	Data Communication and Computer Networks	CD	3	-	-	-	3	50	50	100	3
3	IPCC	MVJ21CD53	Database Management Systems and Lab	CD	3	-	2	-	3	100	100	200	4
4	IPCC	MVJ21CD54	R Programming and Lab	CD	3	-	2	Y	3	100	100	200	4
5	PEC	MVJ21CD55 X	PEC 1	CD	3	-	-	-	3	50	50	100	3
6	HSM C	MVJ21XX56 X	Environmental Studies	CV	1	-	-	-	2	50	50	100	1
7	AEC	MVJ21CDA57	Research Methodology &IPR/Life Science AEC5	CD	1	2	-		2	50	50	100	2
8	UHV	MVJ21UHVI58	Universal Human Values	Humanities	2	-			3	50	50	100	2
Total					19	2	4			500	500	1000	22

Professional Elective-1	
Course Code	Course Name
MVJ21IS551	Advanced JAVA and J2EE
MVJ21IS552	Cloud computing
MVJ21IS553	Agile Technology
MVJ21IS554	Web technology

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Semester VI

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	MVJ21CD61	Data Warehousing and Mining	CD	2	2	-	-	3	50	50	100	3
2	IPCC	MVJ21CD63	AI and Machine Learning and lab	CD	3	-	2	-	3	100	100	200	4
3	IPCC	MVJ21CD64	Data Analytics and lab	CD	3	-	2	Y	3	100	100	200	4
4	OEC	MVJ21CD62X	OEC I	CD	3	-	-	-	3	50	50	100	3
5	OEC	MVJ21CD65	MOOC Courser (OEC 2)	CD	3	-	-	-	3	50	50	100	3
6	AEC	MVJ21AEC66	Angular JS	CD	2	-	-	-	2	50	50	100	1
7	PRJ	MVJ21PRJ67	Mini project	CD	-	-	4	-	3	50	50	100	2
8	INT	MVJ21INT68I	Summer Internship II	CD	-	-	-	-	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.

Open Elective-1	
Course Code	Course Name
MVJ21CD621	Introduction to DS
MVJ21CD622	Introduction to Cyber security
MVJ21CD623	Java Programming
MVJ21CD624	DBMS

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Semester VII

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	IPCC	MVJ21CD71	Big Data and Hadoop and Lab	CD	3	-	2	-	3	100	100	200	4
2	PEC	MVJ21CD72 X	Professional Elective II	CD	3	-	-	-	3	50	50	100	3
3	PEC	MVJ21CD73 X	Professional Elective III	CD	3	-	-	-	3	50	50	100	3
4	OEC	MVJ21CD74 X	OEC 3	CD	3	-	-	-	3	50	50	100	3
5	PRJ	MVJ21PR76	Project Phase I	CD	-	-	4		3	50	50	100	2
6	AEC	MVJ21XX77	AEC (online minimum of 4 weeks duration)		1	-	-	-	2	50	50	100	1
Total					13	-	6			350	350	700	16

Professional Elective-II		Professional Elective-III		Open Elective-III	
Course Code	Course Name	Course Code	Course Name	Course Code	Course Name
MVJ21CD721	Block Chain Technology	MVJ21CD731	Internet Of Things	MVJ21CD741	Cloud Computing
MVJ21CD722	Deep Learning	MVJ21CD732	Natural Language Processing	MVJ21CD742	Introduction to AI
MVJ21CD723	Augmented Reality	MVJ21CD733	Data Security and Privacy	MVJ21CD743	Python Programming
-	-	-	-	MVJ21CD744	Introduction to Bigdata

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Semester VIII

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	PRJ	MVJ21CDP81	Project Phase II	CD	-	-	-	-	3	50	50	100	10
2	INT	MVJ21INT82	Research / Industrial Internship	CD	-	-	-	-	3	50	50	100	05
3	Seminar	MVJ21CDS83	Seminar	CD	-	-	-	-	3	50	50	100	01
Total					-	-		-		150	150	300	16

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Scheme of study - 2021 Scheme- Semester VIII

Distribution of Credits

Course Type/Semester	Semester I	Semester II	Semester III	Semester IV	Semester V	Semester VI	Semester VII	Semester VIII	Total
HSMC	2	2	1	1	3+1	3	-	-	13
BSC	7	7	4	3	-	-	-	-	21
ESC	10	10	-	-	-	-	-	-	20
PCC	-	-	7	6	3	-	-	-	16
IPCC	-	-	8	8	8	8	4	-	36
PEC	-	-	-	-	-3		6	-	9
OEC	-	-	-	-		6	3		9
INT	-	-	-	2	-	2	-	5	9
Project	-	-	-	-	-	2	2	10	14
AEC	1	1	2	2	2	1	1	-	10
UHV	-	-	-	-	2	-	-	-	2
Seminar	-	-	-	-	-	-	-	1	1
Total	20	20	22	22	22	22	16	16	160