

MVJ College of Engineering, Whitefield, Bangalore 560067

An Autonomous Institution, Affiliated to VTU, Belagavi

B.E. in Electronics Engineering (ACT)

Scheme of Teaching and Examination

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

Effective from the academic year 2023-24

III SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PCC	MVJ22EA31	Maths for AV Communication	TD-Mathematics	3	0	0		03	50	50	100	3
2	IPCC	MVJ22EA32	Analysis and Design of Digital Circuits	TD:EC	3	0	2		03	50	50	100	4
3	IPCC	MVJ22EA33	Analog Electronic Circuits	TD:EC	3	0	2		03	50	50	100	4
4	PCC	MVJ22EA34	Network Analysis	TD:EC	3	0	0	Y	03	50	50	100	3
5	PCCL	MVJ22EAL35	Analog and Digital Electronics Laboratory	TD:EC	0	0	2		03	50	50	100	1
6	ESC	MVJ22EA36x	ESC/ETC/PLC	TD:EC	3	0	0		03	50	50	100	3
7	UHV	MVJ22ACK37	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/SEC	MVJ22AC358x	Ability Enhancement Course/Skill Enhancement Course – III (Level 1)		1	0	2		01	50	50	100	2
									02				
9	MC	MVJ22BNSK359	National Service Scheme (NSS)	NSS coordinator	0	0	2			100	---	100	0
		MVJ22BPEK359	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		MVJ22BYOK359	Yoga	Yoga Teacher									
Total									550	350	900	21	

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **UHV:** Universal Human Value Course, **MC:** Mandatory Course (Non-credit), **AEC:** Ability Enhancement Course, **SEC:** Skill Enhancement Course, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. K: This letter in the course code indicates common to all the stream of engineering. ESC: Engineering Science Course, ETC: Emerging Technology

Course, PLC: Programming Language Course.

Engineering Science Course (ESC/ETC/PLC)

MVJ22EA361	Digital System Design using Verilog	MVJ22EA363	Computer Organization and Architecture
MVJ22EA362	Operating System	MVJ22EA364	Applied Numerical methods

Ability Enhancement Course – III

MVJ22AC3011	Idea Box-Innovation	MVJ22AC3071	IOT-Connecting the World
MVJ22AC3021	Tomorrow's Engineers-Engineering Solution to Societal Problems	MVJ22AC3081	FSIPD-Ideas to Product
MVJ22AC3031	Tinkering Lab-Experiment and Conceptualize	MVJ22AC3091	Software Development-Code Your Ideas
MVJ22AC3041	UAV-Develop Drones	MVJ22AC3101	Lab View-Graphical Programming
MVJ22AC3051	Astronomy-Explore the Space	MVJ22AC3111	CNC-Programming-Advanced Manufacturing
MVJ22AC3061	Robotics and Industrial automation Lab	MVJ22AC3121	NCC

Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practicals of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-22 may please be referred.

National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.

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IV SEMESTER													
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical Drawing	Self -Study	Duration inhours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PCC	MVJ22EA41	Engineering Electromagnetics	TD:EC	3	0	0	Y	03	50	50	100	3
2	IPCC	MVJ22EA42	Principles of Communication Systems	TD:EC	3	0	2		03	50	50	100	4
3	PCC	MVJ22EA43	Modern Control systems	TD:EC	3	0	0		03	50	50	100	3
4	PCCL	MVJ22EAL44	Communication laboratory	TD:EC	0	0	2		03	50	50	100	1
5	ESC	MVJ22EA45x	ESC/ETC/PLC	TD:EC	3	0	0		03	50	50	100	3
6	AEC / SEC	MVJ22AC456x	Ability Enhancement Course/Skill Enhancement Course- IV(Level 2)	TD : Concerned department						50	50	100	2
					1	0	2		02				
4	BSC	MVJ22BOK47	Biology For Engineers	TD / PSB: BT, CHE,	2	0	0		03	50	50	100	2
7	UHV	MVJ22UHK48	Universal human values course	Any Department	1	0	0		01	50	50	100	1
9	MC	MVJ22NSK459	National Service Scheme (NSS)	NSS coordinator	0	0	2		100	---	100	0	
		MVJ22PEK459	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		MVJ22YOK459	Yoga	Yoga Teacher									
Total									500	400	900	19	
<p>PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical S= SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation. K : This letter in the course code indicates common to all the stream of engineering.</p>													

Ability Enhancement Course / Skill Enhancement Course – IV			
Ability Enhancement Course – IV– MVJ22AC XYXL (X is Semester, YY is vertical Number, L is level of the vertical)			
MVJ22AC4012	Idea Box-Innovation	MVJ22AC4072	IOT-Connecting the World
MVJ22AC4022	Tomorrow’s Engineers-Engineering Solution to Societal Problems	MVJ22AC4082	FSIPD-Ideas to Product
MVJ22AC4032	Tinkering Lab-Experiment and Conceptualize	MVJ22AC4092	Software Development-Code Your Ideas
MVJ22AC4042	UAV-Develop Drones	MVJ22AC4102	Lab View-Graphical Programming
MVJ22AC4052	Astronomy-Explore the Space	MVJ22AC4112	CNC-Programming-Advanced Manufacturing
MVJ22AC4062	Robotics and Industrial automation Lab	MVJ22AC4122	NCC
Engineering Science Course (ESC/ETC/PLC)			
MVJ22EA 451	Digital Communication	MVJ22EA 453	ARM Microcontroller
MVJ22EA 452	Data Structures using C++	MVJ22EA 454	Engineering Statistics and Linear Algebra
<p>Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practical of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-22</p> <p>National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses is mandatory for the award of degree.</p>			

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Effective from the academic year 2023-24

V SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
					Theory Lecture	Tutorial	Practical Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	HSMS	MVJ22EA 51	Technical Management	TD:EC	3	0	0		03	50	50	100	3
2	IPCC	MVJ22EA 52	Microwave Engineering	TD:EC	3	0	2		03	50	50	100	4
3	PCC	MVJ22EA 53	Signal Processing	TD:EC	3	0	0	Y	03	50	50	100	4
4	PCCL	MVJ22EA L54	Optical Communication Laboratory	TD:EC	0	0	2		03	50	50	100	1
5	PEC	MVJ22EA 55x	Professional Elective Course	TD:EC	3	0	0		03	50	50	100	3
6	PROJ	MVJ22EA P56	Mini Project	TD:EC	0	0	4		03	100		100	2
7	AEC	MVJ22RMK57	Research Methodology and IPR	TD:EC	3	0	0		02	50	50	100	3
8	MC	MVJ22ESK58	Environmental Studies	TD:EC	2	0	0		02	50	50	100	2
9	MC	MVJ22NSK59	National Service Scheme (NSS)	NSS coordinator	0	0	2			100		100	0
		MVJ22EK59	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		MVJ22YOK59	Yoga	Yoga Teacher									
Total									550	350	900	22	

Professional Elective Course

MVJ22EA 551	Satellite Communication	MVJ22EA 553	Information Theory and Coding
MVJ22EA 552	Cryptography	MVJ22EA 554	Optical Communication
MVJ22EA555	Innovation & Entrepreneurship		

PC: Professional Core Course, **PCCL**: Professional Core Course laboratory, **UHV**: Universal Human Value Course, **MC**: Mandatory Course (Non-credit), **AEC**: Ability Enhancement Course, **SEC**: Skill Enhancement Course, **L**: Lecture, **T**: Tutorial, **P**: Practical **S**= **SDA**: Skill Development Activity, **CIE**: Continuous Internal Evaluation, **SEE**:Semester End Evaluation. **K** : The letter in the course code indicates common to al the stream of engineering. **PROJ**: Project /Mini Project. **PEC**: Professional Elective

Course
<p>Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practicals of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-22EA</p> <p>National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.</p>
<p>Mini-project work: Mini Project is a laboratory-oriented/hands on course that will provide a platform to students to enhance their practical knowledge and skills by the development of small systems/applications etc. Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or a multidisciplinary Mini- project can be assigned to an individual student or to a group having not more than 4 students.</p> <p>CIE procedure for Mini-project:</p> <p>(i) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two faculty members of the Department, one of them being the Guide. The CIE marks awarded for the Mini-project work shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio of 50:25:25. The marks awarded for the project report shall be the same for all the batches mates.</p> <p>(ii) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all the guides of the project. The CIE marks awarded for the Mini-project, shall be based on the evaluation of the project report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.</p> <p>No SEE component for Mini-Project.</p>
<p>Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering a professional elective is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.</p>

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 Effective from the academic year 2023-24

VI SEMESTER

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credit	
					Theory Lecture	Tutorial	Practical Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	IPCC	MVJ22EA 61	Antenna and Wave Propagation	TD:EC	3	0	2		03	50	50	100	4
2	PCC	MVJ 22EA 62	5G & Beyond	TD:EC	3	0	0	Y	03	50	50	100	3
3	PEC	MVJ22EA 63x	Professional Elective Course	TD:EC	3	0	0		03	50	50	100	3
4	OEC	MVJ22EA 64x	Open Elective Course	TD:EC	3	0	0		03	50	50	100	3
5	PROJ	MVJ22EA 65	Project Phase I	TD:EC	0	0	4		03	100	--	100	2
6	PCCL	MVJ22EA L66	5G & Beyond Laboratory	TD:EC	0	0	2		03	50	50	100	1
7	AEC/SDC	MVJ22EE67x	Ability Enhancement Course/Skill Development Course V	TD:EC					01	50	50	100	2
1					0	2							
8	MC	MVJ22NSK68	National Service Scheme (NSS)	NSS coordinator	0	0	2		100	---	100	0	
		MVJ22PEK68	Physical Education (PE) (Sports and Athletics)	Physical Education Director									
		MVJ22YOK68	Yoga	Yoga Teacher									
Total									500	300	800	18	
Professional Elective Course													
MVJ22EA 631	RADAR System Engineering			MVJ22EA 633	SENSOR & VIRTUAL INSTRUMENTATION								
MVJ22EA 632	Networks and Cyber Security			MVJ22EA 634	Artificial Neural Network								
Open Elective Course													
MVJ22EA641	Sensor technology			MVJ22EA643	Digital Image Processing								
MVJ22EA642	Introduction to matlab & Simulink			MVJ22EA644	Principles of Communication								

Ability Enhancement Course / Skill Enhancement Course			
Ability Enhancement Course – MVJ22AC XYYL (X is Semester, YY is vertical Number, L is level of the vertical)			
MVJ22AC6013	Idea Box-Innovation	MVJ22AC6073	IOT-Connecting the World
MVJ22AC6023	Tomorrow's Engineers-Engineering Solution to Societal Problems	MVJ22AC6083	FSIPD-Ideas to Product
MVJ22AC6033	Tinkering Lab-Experiment and Conceptualize	MVJ22AC6093	Software Development-Code Your Ideas
MVJ22AC6043	UAV-Develop Drones	MVJ22AC6103	Lab View-Graphical Programming
MVJ22AC6053	Astronomy-Explore the Space	MVJ22AC6113	CNC-Programming-Advanced Manufacturing
MVJ22AC6063	Robotics and Industrial automation Lab	MVJ22AC6123	NCC
<p>PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical S= SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation. K : The letter in the course code indicates common to all the stream of engineering. PROJ: Project /Mini Project. PEC: Professional Elective Course. PROJ: Project Phase -I, OEC: Open Elective Course</p>			
<p>Professional Core Course (IPCC): Refers to Professional Core Course Theory Integrated with practicals of the same course. Credit for IPCC can be 04 and its Teaching– Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (B.E./B.Tech.) 2022-22</p>			
<p>National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.</p>			
<p>Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.</p>			
<p>Open Elective Courses: Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students' strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.</p>			

Project Phase-I : Students have to discuss with the mentor /guide and with their helphe/she has to complete the literature survey and prepare the report and finally define the problem statement for the project work.

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VII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	IPCC	MVJ22EA 71	Computer Communication Networks	TD:EC	3	0	2		03	50	50	100	4
2	IPCC	MVJ22EA 72	Digital Image Processing	TD:EC	3	0	2		03	50	50	100	4
3	PCC	MVJ22EA 73	Wireless Cellular Communication	TD:EC	3	0	0	Y	03	50	50	100	4
4	PEC	MVJ22EA 74x	Professional Elective Course	TD:EC	3	0	0		03	50	50	100	3
5	OEC	MVJ22EA 75x	Open Elective Course	TD:EC	3	0	0		01	50	50	100	3
6	PROJ	MVJ22EA 76	Major Project Phase-II	TD:EC	0	0	12		03	100	100	200	6
										400	300	700	24

Professional Elective Course

MVJ22EA 741	Industrial IOT	MVJ22EA 743	SCRPTING LANGUAGE FOR COMMUNICATION
MVJ22EA 742	Virtual & Augment Reality	MVJ22EA 744	Nano Electronics

Open Elective Course

MVJ22EA 751	Mobile Communication	MVJ22EA 753	Embedded System Design
MVJ22EA 752	Satellite Communication	MVJ22EA 754	Microwave Engineering

PCC: Professional Core Course, **PCCL:** Professional Core Course laboratory, **PEC:** Professional Elective Course, **OEC:** Open Elective Course **PR:** Project Work, **L:** Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work

Note: VII and VIII semesters of IV years of the program

- (1) Institutions can swap the VII and VIII Semester Schemes of Teaching and Examinations to accommodate research internships/ industry internships after the VI semester.
- (2) Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether the VII or VIII semesters is completed during the beginning of the IV year or the later part of IV years of the program.

Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology

curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering. Each group will provide an option to select one course. The minimum number of students' strengths for offering professional electives is 10. However, this conditional shall not be applicable to cases where the admission to the program is less than 10.

Open Elective Courses:

Students belonging to a particular stream of Engineering and Technology are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students' strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.

PROJECT WORK (21XXP75): The objective of the Project work is

- (i) To encourage independent learning and the innovative attitude of the students.
- (ii) To develop interactive attitude, communication skills, organization, time management, and presentation skills.
- (iii) To impart flexibility and adaptability.
- (iv) To inspire team working.
- (v) To expand intellectual capacity, credibility, judgment and intuition.
- (vi) To adhere to punctuality, setting and meeting deadlines.
- (vii) To install responsibilities to oneself and others.
- (viii) To train students to present the topic of project work in a seminar without any fear, face the audience confidently, enhance communication skills, involve in group discussion to present and exchange ideas.

CIE procedure for Project Work:

(1) Single discipline: The CIE marks shall be awarded by a committee consisting of the Head of the concerned Department and two senior faculty members of the Department, one of whom shall be the Guide. The CIE marks awarded for the project work, shall be based on the evaluation of the project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

(2) Interdisciplinary: Continuous Internal Evaluation shall be group-wise at the college level with the participation of all guides of the college. Participation of external guide/s, if any, is desirable. The CIE marks awarded for the project work, shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25. The marks awarded for the project report shall be the same for all the batch mates.

SEE procedure for Project Work: SEE for project work will be conducted by the two examiners appointed by the University. The SEE marks awarded for the project work shall be based on the evaluation of project work Report, project presentation skill, and question and answer session in the ratio 50:25:25.

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VIII SEMESTER (Swappable VII and VIII SEMESTER)

Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical Drawing	Self -Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	PEC	MVJ22EA 81x	Professional Elective (Online Courses)	TD:EC	3	0	0		03	50	50	100	3
2	OEC	MVJ22EA 82x	Open Elective (Online Courses)	TD:EC	3	0	0		03	50	50	100	3
3	INT	MVJ22EA 83	Internship (Industry/Research) (14 - 20 weeks)	TD:EC	0	0	12		03	100	100	200	10
										200	200	400	16
Professional Elective Course (Online courses)													
MVJ 22EA 811				MVJ 22EA 812									
MVJ 22EA 813				MVJ 22EA 814									
Open Elective Courses (Online Courses)													
MVJ 22EA 821				MVJ 22EA 822									
MVJ 22EA 823				MVJ 22EA 824									

L: Lecture, **T:** Tutorial, **P:** Practical **S= SDA:** Skill Development Activity, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation. **TD-** Teaching Department, **PSB:** Paper Setting department, **OEC:** Open Elective Course, **PEC:** Professional Elective Course. **PROJ:** Project work, **INT:** Industry Internship / Research Internship / Rural Internship

Note: VII and VIII semesters of IV years of the program

Swapping Facility

- Institutions can swap VII and VIII Semester Scheme of Teaching and Examinations to accommodate **research internships/ industry internships/Rural Internship** after the VI semester.
- Credits earned for the courses of VII and VIII Semester Scheme of Teaching and Examinations shall be counted against the corresponding semesters whether VII or VIII semester is completed during the beginning of IV year or later part of IV year of the program.

Elucidation:

At the beginning of IV years of the program i.e., after VI semester, VII semester classwork and VIII semester **Research Internship /Industrial Internship / Rural Internship** shall be permitted to be operated simultaneously by the University so that students have ample opportunity for an internship. In other words, a good percentage of the class shall attend VII semester classwork and a similar percentage of others shall attend to Research Internship or Industrial Internship or Rural Internship.

Research/Industrial /Rural Internship shall be carried out at an Industry, NGO, MSME, Innovation center, Incubation center, Start-up, center of Excellence (CoE), Study Centre established in the parent institute and /or at reputed research organizations/institutes.

The mandatory Research internship /Industry internship / Rural Internship is for 14 to 20 weeks. The internship shall be considered as a head of passing and shall be considered for the award of a degree. Those, who do not take up/complete the internship shall be declared to fail and shall have to complete it during the subsequent University examination after satisfying the internship requirements.

Research internship: A research internship is intended to offer the flavor of current research going on in the research field. It helps students get familiarized with the field and imparts the skill required for carrying out research.

Industry internship: Is an extended period of work experience undertaken by students to supplement their degree for professional development. It also helps them learn to overcome unexpected obstacles and successfully navigate organizations, perspectives, and cultures. Dealing with contingencies helps students recognize, appreciate, and adapt to organizational realities by tempering their knowledge with practical constraints.

Rural Internship: Rural development internship is an initiative of Unnat Bharat Abhiyan Cell, RGIT in association with AICTE to involve students of all departments studying in different academic years for exploring various opportunities in techno-social fields, to connect and work with Rural India for their upliftment.

The faculty coordinator or mentor has to monitor the student's internship progress and interact with them to guide for the successful completion of the internship.

The students are permitted to carry out the internship anywhere in India or abroad. University shall not bear any expenses incurred in respect of the internship.

With the consent of the internal guide and Principal of the Institution, students shall be allowed to carry out the internship at their hometown (**within or outside the state or abroad**), provided favorable facilities are available for the internship and the student remains regularly in contact with the internal guide. **University shall not bear any cost involved in carrying out the internship by students.** However, students can receive any financial assistance extended by the organization.

Professional Elective /Open Elective Course: These are ONLINE courses suggested by the respective Board of Studies. Details of these courses shall be made available for students on the VTU web portal.

