



MVJ College of Engineering, Bengaluru  
(An Autonomous Institute)

Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Recognised by UGC with 2(f) & 12 (B),  
Accredited by NBA & NAAC

Scheme of Teaching and Examination 2022-23

Outcome Based Education (OBE) and Choice Based Credit System (CBCS) Effective from the academic year 2022-23

III SEMESTER

Sl. No.	Course		Course Title	Teaching Department	Teaching Hours/Week				Examination				Credits
					Theory/ lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	L	T			P	S							
1	BSC	MVJ22CH31	Probability and Statistics	MA	3	0	0		3	50	50	100	3
2	IPCC	MVJ22CH32	Momentum Transfer	CH	3	0	2	Y	3	50	50	100	4
3	IPCC	MVJ22CH33	Mechanical Unit Operations	CH	3	0	2		3	50	50	100	4
4	PCC	MVJ22CH34	Chemical Process Calculations	CH	2	2	0		3	50	50	100	3
5	PCCL	MVJ22CHL35	Computer Aided Drawing Lab	CH	0	0	2		3	50	50	100	1
6	ESC	MVJ22CH36x	ESC/ETC/PLC	CH	3	0	0		3	50	50	100	3
7	SCR	MVJ22SCR37	Social Connect and Responsibility	CH	0	0	2		1	50	50	100	1
8	AEC/SEC	MVJ22A3YY1	AEC Vertical Level-1	Respective Vertical	1	0	2		2	50	50	100	2
9	MC	MVJ22NS39	National Service Scheme (NSS).	NSS coordinator	0	0	2	-	-	100	-	100	0
		MVJ22PE39	Physical Education (PE) (Sports and Athletics).	PE Director									
		MVJ22YO39	Yoga	Yoga Teacher									
10	BSC	MVJ22MATDIP-I	Additional Mathematics-I	MA	1	2	0	-	3	100	-	100	0
<b>Total</b>					<b>15/16</b>	<b>2/4</b>	<b>12/12</b>	<b>-</b>	<b>21/24</b>	<b>550/650</b>	<b>350/350</b>	<b>900/1000</b>	<b>21</b>

**Note:** BSC: Basic Science Course, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PCCL: Professional Core Course laboratory, ESC: Engineering Science Course, ETC: Emerging Technology Course, PLC: Programming Language Course, SCR: Social Connect Responsibility, AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, MC: Mandatory Course (Non-credit), L: Lecture, T: Tutorial, P: Practical, S: Self Study, SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

**Engineering Science Course (ESC/ETC/PLC)**

MVJ22CH361	Material Science & Technology	MVJ22CH362	Carbon Sequestration Technology
MVJ22CH363	Mat Lab for Chemical Engineers	MVJ22CH364	Data Science for Engineers
<b>Ability Enhancement Course–III – MVJ22AXYYL (X is Semester, YY is vertical Number, L is level of the vertical)</b>			
MVJ22A3011	Idea Box – Innovation	MVJ22A3071	IoT – Connecting the world
MVJ22A3021	Tomorrow’s Engineers – Engineering Solution to Societal Problems	MVJ22A3081	FSIPD –Ideas to Product
MVJ22A3031	Tinkering Lab – Experiment and Conceptualize	MVJ22A3091	Software Development - Code your ideas
MVJ22A3041	UAV – Develop Drones	MVJ22A3101	LabVIEW – Graphical Programming
MVJ22A3051	Astronomy – Explore the space	MVJ22A3111	CNC Programming – Advanced Manufacturing
MVJ22A3061	Robotics and Industrial Automation Lab – Design Robots	MVJ22A3121	NCC

**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.) 2022-23 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.

**IV SEMESTER**

Sl. No.	Course		Course Title	Teaching Department	Teaching Hours/Week				Examination				Credits
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	L	T			P	S							
1	PCC	MVJ22CH41	Chemical Engineering Thermodynamics	CH	3	0	0		3	50	50	100	3
2	PCC	MVJ22CH42	Unit Process in Organic Synthesis	CH	3	0	0		3	50	50	100	3
3	IPCC	MVJ22CH43	Process Heat Transfer	CH	2	2	2	y	3	50	50	100	4
4	PCCL	MVJ22CHL44	Unit Process in Organic Synthesis Lab	CH	0	0	2		3	50	50	100	1
5	ESC	MVJ22CH45x	ESC/ETC/PLC	CH	3	0	0		3	50	50	100	3
6	AEC/SEC	MVJ22A4YY2	AEC Vertical Level-2	Respective Verticals	1	0	2		2	50	50	100	2
7	BSC	MVJ22BI47	Biology for Engineers	CH	2	0	0		2	50	50	100	2
8	UHV	MVJ22UHV48	Universal Human Values	CH	1	0	0		1	50	50	100	1
9	MC	MVJ22NS49	National Service Scheme (NSS).	NSS coordinator	0	0	2	-	-	100	-	100	0
		MVJ22PE49	Physical Education (PE) (Sports and Athletics).	PE Director									
		MVJ22YO49	Yoga.	Yoga Teacher									
10	BSC	MVJ22MATDIP-II	Additional Mathematics-II	MA	1	2	0	-	3	100	-	100	0
<b>Total</b>					<b>16/17</b>	<b>0/2</b>	<b>8/8</b>	<b>-</b>	<b>21/24</b>	<b>450/550</b>	<b>450/450</b>	<b>900/1000</b>	<b>19</b>

**Note:** PCC: Professional Core Course, IPCC: Integrated Professional Core Course, PCCL: Professional Core Course laboratory, ESC: Engineering Science Course, ETC: Emerging Technology Course, PLC: Programming Language Course, AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, BSC: Basic Science Course, UHV: Universal Human Value Course, MC: Mandatory Course (Non-credit), L: Lecture, T: Tutorial, P: Practical, S: Self Study, SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Engineering Science Course (ESC/ETC/PLC)			
MVJ22CH451	Industrial Biotechnology	MVJ22CH452	Bio Fuels
MVJ22CH453	Computational Fluid Dynamics	MVJ22CH454	Introduction to R Language
Ability Enhancement Course/Skill Enhancement Course –IV - MVJ22AXYYL (X is Semester, YY is vertical Number, L is level of the vertical)			
MVJ22A4012	Idea Box - Innovation	MVJ22A4072	IoT – Connecting the world
MVJ22A4022	Tomorrow's Engineers – Engineering Solution to Societal Problems	MVJ22A4082	FSIPD –Ideas to Product
MVJ22A4032	Tinkering Lab – Experiment and Conceptualize	MVJ22A4092	Software Development - Code your ideas
MVJ22A4042	UAV – Develop Drones	MVJ22A4102	LabVIEW – Graphical Programming
MVJ22A4052	Astronomy – Explore the space	MVJ22A4112	CNC Programming – Advanced Manufacturing
MVJ22A4062	Robotics and Industrial Automation Lab – Design Robots	MVJ22A4122	NCC
<p><b>Professional Core Course (IPCC):</b> 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.) 2022-23</p> <p><b>National Service Scheme/ Physical Education/ Yoga:</b> 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>			

**V SEMESTER**

Sl. No.	Course		Course Title	Teaching Department	Teaching Hours/Week				Examination				Credits
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	L	T			P	S							
1	HSMS	MVJ22CH51	Industrial Process Management	CH	3	0	0		3	50	50	100	3
2	IPCC	MVJ22CH52	Chemical Reaction Engineering	CH	3	2	0	Y	4	50	50	100	4
3	PCC	MVJ22CH53	Mass Transfer-I	CH	3	2	0		4	50	50	100	4
4	PCCL	MVJ22CHL54	Pollution Control and Instrumental analysis Lab	CH	0	0	2		3	50	50	100	1
5	PEC	MVJ22CH55x	Professional Elective-I	CH	3	0	0		3	50	50	100	3
6	PROJ	MVJ22CHP56	Mini Project	CH	0	0	4		2	100	--	100	2
7	AEC	MVJ22RMI57	Essence of Research Methodology & IPR	CH	2	2	0		3	50	50	100	3
8	MC	MVJ22ENV58	Environmental studies	CV	2	0	0		2	50	50	100	2
9	MC	MVJ22NS59	National Service Scheme (NSS).	NSS coordinator	0	0	2	-	-	100	-	100	0
		MVJ22PE59	Physical Education (PE) (Sports and Athletics).	PE Director									
		MVJ22YO59	Yoga	Yoga Teacher									
<b>Total</b>					<b>16</b>	<b>6</b>	<b>8</b>	<b>-</b>	<b>24</b>	<b>550</b>	<b>350</b>	<b>900</b>	<b>22</b>

**Note:** IPCC: Integrated Professional Core Course, 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: Self Study, SDA: Skill Development Activity, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation. PROJ: Project /Mini Project. PEC: Professional Elective Course

Course Code	Professional Elective-I
MVJ22CH551	Chemical Process Industries
MVJ22CH552	Piping Engineering
MVJ22CH553	Petroleum Refining & Petrochemicals
MVJ22CH554	Principles of Downstream Techniques in Bio process

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**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 semesters 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.

**Mini-project work:** Mini Project is a laboratory-oriented/hand 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.

**CIE procedure for Mini-project:**

**(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.

**(ii) Interdisciplinary:** Continuous Internal Evaluation shall be group-wise at the college level with the participation of the all 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.

**No SEE component for Mini-Project.**

**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.

**VI SEMESTER**

Sl. No.	Course		Course Title	Teaching Department	Teaching Hours/Week				Examination			Credits	
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks		Total Marks
	L	T			P	S							
1	IPCC	MVJ22CH61	Chemical Process Equipment Design & Drawing	CH	3	0	2	Y	3	50	50	100	4
2	PCC	MVJ22CH62	Mass Transfer-II	CH	3	0	2		3	50	50	100	3
3	PEC	MVJ22CHL63	Mass Transfer Operations Lab	CH	4	0	0		3	50	50	100	1
4	OEC	MVJ22CH64x	Professional Elective-II	CH	3	0	0		3	50	50	100	3
5	PROJ	MVJ22CH65x	Open Elective-I	CH	3	0	0		3	50	50	100	3
6	PCCL	MVJ22CHP66	Project Phase-1	CH	0	0	4		3	50	50	100	2
7	AEC/SDC	MVJ22A6YY3	AEC Vertical Level-3	Respective Vertical	1	0	2		2	50	50	100	1
8	HSMC	MVJ22IKK68	Indian Knowledge System	CH	1	0	0		2	50	50	100	1
9	MC	MVJ22NS69	National Service Scheme (NSS).	NSS coordinator	0	0	2	-	-	100	-	100	0
		MVJ22PE69	Physical Education (PE) (Sports and Athletics).	Physical Education Director									
		MVJ22YO69	Yoga	Yoga Teacher									
<b>Total</b>					<b>18</b>	<b>0</b>	<b>12</b>	<b>-</b>	<b>22</b>	<b>500</b>	<b>400</b>	<b>900</b>	<b>18</b>

**Note:** IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PEC: Professional Elective Course, OEC: Open Elective Course, PROJ: Project /Mini Project, PCCL: Professional Core Course laboratory, AEC: Ability Enhancement Course, MC: Mandatory Course (Non-credit), L: Lecture, T: Tutorial, P: Practical S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Professional Elective-II	Course Code	Open Elective-I
MVJ22CH641	Nano Science & Nano Technology	MVJ22CH651	Industrial Pollution and Control
MVJ22CH642	Pharmaceutical Technology	MVJ22CH652	Nano Science & Nano Technology
MVJ22CH643	Food Technology	MVJ22CH653	Green Technology
MVJ22CH644	Heterogeneous Reaction Systems	MVJ22CH654	Solid Waste Management

<b>Ability Enhancement Course/Skill Enhancement Course-V - MVJ22AXYYL (X is Semester, YY is vertical Number, L is level of the vertical)</b>			
MVJ22A6013	Idea Box - Innovation	MVJ22A6073	IoT – Connecting the world
MVJ22A6023	Tomorrow's Engineers – Engineering Solution to Societal Problems	MVJ22A6083	FSIPD – Ideas to Product
MVJ22A6033	Tinkering Lab – Experiment and Conceptualize	MVJ22A6093	Software Development - Code your ideas
MVJ22A6043	UAV – Develop Drones	MVJ22A6103	LabVIEW – Graphical Programming
MVJ22A6053	Astronomy – Explore the space	MVJ22A6113	CNC Programming – Advanced Manufacturing
MVJ22A6063	Robotics and Industrial Automation Lab – Design Robots	MVJ22A6123	NCC
<p><b>Professional Core Course (IPCC):</b> 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.) 2022-23</p> <p><b>National Service Scheme/Physical Education/Yoga:</b> 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><b>Professional Elective Courses (PEC):</b> 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>			
<p><b>Open Elective Courses:</b></p> <p>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>			
<p><b>Project Phase-I:</b> Students have to discuss with the mentor/guide and with their help he/she has to complete the literature survey and prepare the report and finally define the problem statement for the project work.</p>			



## VII SEMESTER

Sl. No.	Course		Course Title	Teaching Department	Teaching Hours/Week				Examination				Credits
					Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
	L	T			P	S							
1	IPCC	MVJ22CH71	Chemical Process Modelling & Simulation	CH	3	0	2	-	03	50	50	100	4
2	IPCC	MVJ22CH72	Process control & Industrial IoT	CH	3	0	2	Y	03	50	50	100	4
3	PCC	MVJ22CH73	Applied mathematics in Chemical Engineering	CH	4	0	0	-	03	50	50	100	4
4	PEC	MVJ22CH74x	Professional Elective-III	CH	3	0	0	-	03	50	50	100	3
5	OEC	MVJ22CH75x	Open Elective-II	CH	3	0	0	-	03	50	50	100	3
6	PROJ	MVJ22CHP76	Project Phase-II	CH	0	0	12	-	03	100	100	200	6
<b>Total</b>					<b>16</b>	<b>0</b>	<b>16</b>	<b>-</b>	<b>18</b>	<b>350</b>	<b>350</b>	<b>700</b>	<b>24</b>

**Note:** IPCC: Integrated Professional Core Course, PCC: Professional Core Course, PEC: Professional Elective Course, OEC: Open Elective Course, PROJ: Project /Mini Project, L: Lecture, T: Tutorial, P: Practical S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Professional Elective-III	Course Code	Open Elective-II
MVJ22CH741	Transport Phenomena	MVJ22CH751	Energy Technology
MVJ22CH742	Process Intensification	MVJ22CH752	Food Technology
MVJ22CH743	Bio Sensors & Bioelectronics	MVJ22CH753	Material Science & Technology
MVJ22CH744	Process & Industrial Safety	MVJ22CH754	Process & Industrial Safety

**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.

**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.

**PROJECTWORK (MVJ22CVP76):**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 one self 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 ingroup 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.

**VIII SEMESTER**

Sl. No.	Course		Course Title	Teaching Department	Teaching Hours/Week				Examination				Credits
	Type	Code			Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	PEC	MVJ22CH81x	Professional Elective-IV (Online Courses, NPTEL/SWAYAM)	CH	-	-	-	-	-	-	-	-	3
2	OEC	MVJ22CH82x	Open Elective-III (Online Courses, NPTEL/SWAYAM)	CH	-	-	-	-	-	-	-	-	3
3	INT	MVJ22CHI83	Internship (Industry/Research) (14-20 weeks)		0	0	12	-	03	100	100	200	10
<b>Total</b>					<b>0</b>	<b>0</b>	<b>12</b>	<b>-</b>	<b>03</b>	<b>100</b>	<b>100</b>	<b>200</b>	<b>16</b>

**Note:** PEC: Professional Elective Course, OEC: Open Elective Course, INT: Internship, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation

Course Code	Professional Elective-IV	Course Code	Open Elective-III
MVJ22EE811	NPTEL/SWAYAM	MVJ22EE821	NPTEL/SWAYAM
MVJ22EE812	NPTEL/SWAYAM	MVJ22EE822	NPTEL/SWAYAM
MVJ22EE813	NPTEL/SWAYAM	MVJ22EE823	NPTEL/SWAYAM
MVJ22EE814	NPTEL/SWAYAM	MVJ22EE824	NPTEL/SWAYAM

**Elucidation:**

At the beginning of IV years of the program i.e., after VI semester, VII semester class work 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 under taken 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 by the respective board of studies well before starting of semester.