

III 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	PCC	MVJ22EE31	Engineering Mathematics for EEE	EEE	2	2	0		03	50	50	100	3
2	IPCC	MVJ22EE32	Electric Circuit Analysis	EEE	3	0	2		03	50	50	100	4
3	IPCC	MVJ22EE33	Analog Electronic Circuits	EEE	3	0	2		03	50	50	100	4
4	PCC	MVJ22EE34	Transformers and Generators	EEE	3	0	0		03	50	50	100	3
5	PCCL	MVJ22EEL35	Transformers and Generators Lab	EEE	0	0	2		03	50	50	100	1
6	ESC	MVJ22EE36	Digital Logic Circuits	EEE	3	0	0		03	50	50	100	3
7	UHV	MVJ22UHV37	Social Connect and Responsibility	Any Department	0	0	2		01	100	---	100	1
8	AEC/SEC	MVJ22A3YY1	AEC Vertical Level 1	EEE	1	0	2		02	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-1	Additional Mathematics - 1	MA	1	2	0		03	50	50	100	0
<b>Total</b>					<b>16</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>24</b>	<b>600</b>	<b>400</b>	<b>1000</b>	<b>21</b>

**Note:** BSC: Basic Science Course, IPCC: Integrated Program Core Course, PCC: Program Core Course, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

**Additional Mathematics-I:** The course is a non-credit mandatory course (NCMC) prescribed for III semester lateral entry diploma holders admitted to BE programs. The successful completion of the program is mandatory for the award of the degree.

IV 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	PCC	MVJ22EE41	Electric Motors	EEE	3	0	0		03	50	50	100	3
2	PCC	MVJ22EE42	Transmission and Distribution	EEE	3	0	0		03	50	50	100	3
3	IPCC	MVJ22EE43	Microcontrollers	EEE	3	0	2		03	50	50	100	4
4	PCCL	MVJ22EEL44	Electric Motors Lab		0	0	2		03	50	50	100	1
5	ESC	MVJ22EE45	Op-Amp and LIC	EEE	3	0	0		03	50	50	100	3
6	AEC/SEC	MVJ22A4YY2	AEC Vertical Level 2	EEE	1	0	2		02	50	50	100	2
7	BSC	MVJ22BI47	Biology For Engineers	CHE	3	0	0		03	50	50	100	2
8	UHV	MVJ22UHV48	Universal human values course	EEE	1	0	0		01	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-2	Additional Mathematics - 2	MA	1	2			03	50	50	100	0
<b>Total</b>					<b>18</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>24</b>	<b>550</b>	<b>450</b>	<b>1000</b>	<b>19</b>

**Note:** BSC: Basic Science Course, IPCC: Integrated Program Core Course, PCC: Program Core Course, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, INT: Internship, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

**Additional Mathematics-I:** The course is a non-credit mandatory course (NMC) prescribed for III semester lateral entry diploma holders admitted to BE programs. The successful completion of the program is mandatory for the award of the degree.

**Summer Internship-I:** Viva voice will be conducted for the 03 weeks inter/intra institutional summer internship activities carried out during the intervening period of II and III semesters. The internship will be considered as a head of passing and will be considered for the award of degree. Those, who do not take up / complete the internship will be declared fail and will have to complete during subsequent examination after satisfying the internship requirements.

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	
	Type	Code			L	T	P	S					
1	HSMS	MVJ22EE51	Engineering Management and Entrepreneurship	EEE	3	0	0		03	50	50	100	3
2	IPCC	MVJ22EE52	Signals & DSP	EEE	3	0	2		03	50	50	100	4
3	PCC	MVJ22EE53	Power Electronics	EEE	3	0	2		03	50	50	100	4
4	PCCL	MVJ22EEL54	Power Electronics Lab	EEE	0	0	2		03	50	50	100	1
5	PEC	MVJ22EE55X	Professional Elective Course (Industry suggested course)	EEE	3	0	0		03	50	50	100	3
6	PROJ	MVJ22EEP56	Mini Project	EEE	0	0	4		03	100		100	2
7	AEC	MVJ22RMI57	Research Methodology and IPR	EEE	2	2	0		02	50	50	100	3
8	MC	MVJ22ENV58	Environmental Studies	Civil	2	0	0		02	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>2</b>	<b>12</b>	<b>0</b>	<b>22</b>	<b>550</b>	<b>350</b>	<b>900</b>	<b>22</b>

**Note:** IPCC: Integrated Program Core Course, PCC: Program Core Course, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, UHV: Universal Human Values, PEC: Professional Elective Course, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Course Name
MVJ22EE551	Non-Conventional Energy Systems
MVJ22EE552	Introduction to Semiconductor Devices
MVJ22EE553	Introduction to Embedded System Design
MVJ22EE554	Fundamentals of Electric Vehicles
MVJ22EE555	Sensor Technologies

**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	
	Type	Code			L	T	P	S					
1	IPCC	MVJ22EE61	Power System Analysis I	EEE	3	0	2		03	50	50	100	4
2	PCC	MVJ22EE62	Control Systems	EEE	4	0	0		03	50	50	100	3
3	PEC	MVJ22EE63X	Professional Elective Course	EEE	3	0	0		03	50	50	100	3
4	OEC	MVJ22EE64X	Open Elective Course	EEE	3	0	0		03	50	50	100	3
5	PROJ	MVJ22EEP65	Project Phase I	EEE	0	0	4		03	50	50	100	2
6	PCCL	MVJ22EEL66	Control system lab	EEE	0	0	2		03	50	50	100	1
7	AEC/SDC	MVJ22A6YY3	AEC Vertical Level 3	EEE	1	0	2		01	50	50	100	2
9	MC	MVJ22EE681	National Service Scheme (NSS).	NSS coordinator	0	0	2			100		100	0
		MVJ22EE681	Physical Education (PE) (Sports and Athletics).	Physical Education Director									
		MVJ22EE683	Yoga.	Yoga Teacher									
<b>Total</b>					<b>14</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>19</b>	<b>500</b>	<b>300</b>	<b>800</b>	<b>18</b>

**Note:** IPCC: Integrated Program Core Course, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation, OEC: Open Elective Course, PRJ: Project, INT: Internship.

**Summer Internship-II:** Viva voice 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 semesters. The internship will be considered as a head of passing and will be considered for the award of degree. Those, who do not take up / complete the internship will be declared fail and will have to complete during subsequent examination after satisfying the internship requirements.

Course Code	Professional Elective-I	Course Code	Open Elective-I
MVJ22EE631	Solar PV Technologies	MVJ22EE641	Renewable Energy Sources
MVJ22EE632	PWM Techniques for Power Electronics Converters	MVJ22EE642	Smart Sensors and Systems
MVJ22EE633	Design of analog and mixed mode VLSI circuits	MVJ22EE643	Aircraft Power System
MVJ22EE634	Battery Management Systems	MVJ22EE644	Industrial Servo Control Systems
MVJ22EE635	Industrial Instrumentation	MVJ22EE645	Disaster Management

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	
	Type	Code			L	T	P	S					
1	IPCC	MVJ22EE71	Switchgear and Protection	EEE	3	0	2		03	50	50	100	4
2	PCC	MVJ22EE72	Industrial Drives and Applications	EEE	4	0	0		03	50	50	100	4
3	IPCC	MVJ22EE73	Power System Analysis II	EEE	3	0	2		03	50	50	100	4
4	PEC	MVJ22EE74X	Professional Elective Course	EEE	3	0	0		03	50	50	100	3
5	OEC	MVJ22EE75X	Open Elective Course	EEE	3	0	0		03	50	50	100	3
6	PROJ	MVJ22EEP76	Major Project Phase II	EEE	0	0	12		03	100	100	200	6
<b>Total</b>					<b>16</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>18</b>	<b>350</b>	<b>350</b>	<b>700</b>	<b>24</b>

**Note:** IPCC: Integrated Program Core Course, AEC: Ability Enhancement Course, PEC: Professional Elective Course, OEC: Open Elective Course, PRJ: Project, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Professional Elective	Course Code	Open Elective
MVJ22EE741	DC Microgrid and Control System	MVJ22EE751	Fundamentals of Electric Vehicles
MVJ22EE742	High Power Multilevel Converters	MVJ22EE752	PLC and SCADA
MVJ22EE743	CMOS Digital VLSI Design	MVJ22EE753	Smart System Automation
MVJ22EE744	Energy Storage and Management System	MVJ22EE754	Energy Conservation and Audit
MVJ22EE745	Industrial Automation and Control	MVJ22EE755	Utilization of Electric Power

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
1	PEC	MVJ22EE81X	Professional Elective (Online Courses)	EEE	3	0	0		03	50	50	100	3
2	OEC	MVJ22EE82X	Open Elective (Online Courses)	EEE	0	2	0		01	50	50	100	3
3	INT	MVJ22EEI83	Internship (Industry/Research) (14-20 weeks)		0	0	12		03	100	100	200	10
<b>Total</b>					<b>3</b>	<b>2</b>	<b>12</b>	<b>0</b>	<b>7</b>	<b>200</b>	<b>200</b>	<b>400</b>	<b>16</b>

**Note:** PRJ: Project, INT: Internship, SEM: Seminar, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Professional Elective (Online Courses)	Course Code	Open Elective
MVJ22EE811	Smart Grid: Basics to Advanced Technologies	MVJ22EE821	Industry Suggested Course/MOOCs
MVJ22EE812	Digital Control in SMPC and FPGA Based Prototyping	MVJ22EE822	Industry Suggested Course/MOOCs
MVJ22EE813	VLSI Design Flow: RTL to GDS	MVJ22EE823	NPTEL/MOOCs
MVJ22EE814	Autonomous Electric Vehicles	MVJ22EE824	NPTEL/MOOCs
MVJ22EE815	Energy Management Systems and SCADA	MVJ22EE825	NPTEL/MOOCs