

MVJ College of Engineering, Whitefield, Bangalore
An Autonomous Institution, Affiliated to VTU, Belagavi
 Scheme of Teaching and Examination 2019-20
 Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
B.E.: Electronics & Communication Engineering

III SEMESTER B.E.

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	
	Type	Code			L	T	P					
1	BSC	MVJ19MEC31	Transforms, Fourier series and Numerical Methods	Mathematics	2	2	0	3	50	50	100	3
2	PCC	MVJ19EC32	Network Analysis	ECE	3	2	0	3	50	50	100	4
3	PCC	MVJ19EC33	Analog Electronics	ECE	3	0	0	3	50	50	100	3
4	PCC	MVJ19EC34	Digital System Design & Verilog	ECE	3	0	0	3	50	50	100	3
5	PCC	MVJ19EC35	Electromagnetics & Transmission Lines	ECE	2	2	0	3	50	50	100	3
6	PCC	MVJ19EC36	Computer Organization & Architecture	ECE	3	0	0	3	50	50	100	3
7	PCC	MVJ19ECL37	Analog Electronics Lab	ECE	0	2	2	3	50	50	100	2
8	PCC	MVJ19ECL38	Digital system Design & Verilog Lab	ECE	0	2	2	3	50	50	100	2
9	HSMC	MVJ19SK/BK39	Samskruthika Kannada/ Balake Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ19CPH39	CPH		1	0	0					
10	BSC	MVJ19MECDIP301	Additional Mathematics-1	Mathematics	2	1	0	3	50	50	100	-
Total					19	11	4	30	500	500	1000	24

Note: BSC: Basic Science, PCC: Professional Core Course, HSMC: Humanity and Social Science
 MVJ19MXXDIP301- Mandatory non-credit course

IV SEMESTER B.E.

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	MVJ19MEC41	Probability Theory, Complex variables and Optimization	Mathematics	2	2	0	3	50	50	100	3
2	PCC	MVJ19EC42	Signals and Systems	ECE	3	2	0	3	50	50	100	4
3	PCC	MVJ19EC43	Control System	ECE	2	2	0	3	50	50	100	3
4	PCC	MVJ19EC44	Linear Integrated Circuits	ECE	3	0	0	3	50	50	100	3
5	PCC	MVJ19EC45	Electronics Instrumentation	ECE	3	0	0	3	50	50	100	3
6	PCC	MVJ19EC46	Python foundation for Electronics Engineering	ECE	3	0	0	3	50	50	100	3
7	PCC	MVJ19ECL47	Linear Integrated Circuits Lab	ECE	0	2	2	3	50	50	100	2
8	PCC	MVJ19ECL48	Python Programming Lab	ECE	0	2	2	3	50	50	100	2
9	HSMC	MVJ19SK/BK49	Samskruthika Kannada/ Balake Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ19CPH49	CPH		1	0	0					
10	BSC	MVJ19MECDIP401	Additional Mathematics-11	Mathematics	2	1	0	3	50	50	100	-
Total					19	11	4	30	500	500	1000	24

Note: BSC: Basic Science, PCC: Professional Core Course , HSMC: Humanity and Social Science
MVJ19MXXDIP401- Mandatory non-credit course

V SEMESTER B.E.

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	MVJ19TEM51	Technical Management , Entrepreneurship&IPR	ECE	3	0	0	3	50	50	100	3
2	PCC	MVJ19EC52	ARM Microcontroller & Embedded System	ECE	3	2	0	3	50	50	100	4
3	PCC	MVJ19EC53	Digital Signal Processing	ECE	3	2	0	3	50	50	100	4
4	PCC	MVJ19EC54	Communication Systems	ECE	3	0	0	3	50	50	100	3
5	PE	MVJ19EC55X	Professional Elective-1	ECE	3	0	0	3	50	50	100	3
6	PCC	MVJ19ECL56	Embedded Controller Lab	ECE	0	2	2	3	50	50	100	2
7	PCC	MVJ19ECL57	Digital Signal Processing Lab	ECE	0	2	2	3	50	50	100	2
8	PCC	MVJ19ECL58	Communication Systems Lab	ECE	0	2	2	3	50	50	100	2
9	HSMC	MVJ19ENV59	Environmental Studies	Humanities	1	0	0	1	50	50	100	1
Total					16	10	6	25	450	450	1000	24

Note: PCC: Professional Core Course , PE: Professional Elective, HSMC: Humanity and Social Science

S.No	Professional Elective - 1	Course Title
1	MVJ19EC551	Information Theory & Coding
2	MVJ19EC552	Operating system
3	MVJ19EC553	OOPS using C++
4	MVJ19EC554	MEMS & sensor Design

VI SEMESTER B.E.

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	MVJ19EC61	VLSI System Design	ECE	3	2	0	3	50	50	100	4
2	PCC	MVJ19EC62	Computer Communication and Networks	ECE	3	2	0	3	50	50	100	4
3	PE	MVJ19EC63X	Professional Elective-2	ECE	3	0	0	3	50	50	100	3
4	PE	MVJ19EC64X	Professional Elective-3	ECE	3	0	0	3	50	50	100	3
5	OE	MVJ19EC65X	Open Elective-1	ECE	3	0	0	3	50	50	100	3
6	PCC	MVJ19ECL66	VLSI System Design Lab	ECE	0	2	2	3	50	50	100	2
7	PCC	MVJ19ECL67	Computer communication and Networks Lab	ECE	0	2	2	3	50	50	100	2
8	Proj	MVJ19ECP68	Mini-Project	ECE	0	0	6	3	50	50	100	3
Total					15	8	10	24	400	400	800	24

Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work

S.No	Professional Elective - 2	Course Title
1	MVJ19EC631	Real Time Operating Systems
2	MVJ19EC632	Digital Image Processing
3	MVJ19EC633	Optical Communication
4	MVJ19EC634	Data structure using C++
S.No	Professional Elective - 3	Course Title
1	MVJ19EC641	System on chip Architecture
2	MVJ19EC642	Fuzzy logic Systems and Neural Networks
3	MVJ19EC643	Machine Learning Design &Application
4	MVJ19EC644	Satellite and Radar Communication

VII SEMESTER B.E.

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	MVJ19EC71	Microwave & Antenna	ECE	3	2	0	3	50	50	100	4
2	PCC	MVJ19EC72	Industrial IOT& Wireless Sensor Networks	ECE	3	2	0	3	50	50	100	4
3	PE	MVJ19EC73X	Professional Elective-4	ECE	3	0	0	3	50	50	100	3
4	PE	MVJ19EC74X	Professional Elective-5	ECE	3	0	0	3	50	50	100	3
5	OE	MVJ19EC75X	Open Elective-2	ECE	3	0	0	3	50	50	100	3
6	PCC	MVJ19ECL76	Microwave &Antenna Lab	ECE	0	2	2	3	50	50	100	2
7	PCC	MVJ19ECL77	IOT Lab	ECE	0	2	2	3	50	50	100	2
8	Proj	MVJ19ECP78	Project Phase-1	ECE	0	0	4	-	50	-	50	2
Total					15	8	8	21	400	350	750	23

Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work

S.No	Professional Elective - 4	Course Title
1	MVJ19EC731	Virtual& Augmented Reality
2	MVJ19EC732	Wireless and cellular Communication
3	MVJ19EC733	Robotics &Automation
4	MVJ19EC734	Electronics in Medicine
S.No	Professional Elective - 5	Course Title
1	MVJ19EC741	IC Reliability and failure Analysis
2	MVJ19EC742	RF& Microwave Circuits
3	MVJ19EC743	Artificial Intelligence &Data science
4	MVJ19EC744	Cryptography& Cybersecurity

VIII SEMESTER B.E.

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	MVJ19ECP83	Project Phase-2	ECE	-	-	-	3	50	50	100	10
2	Int	MVJ19ECI84	Internship	ECE	-	-	-	3	50	50	100	3
3	Sem	MVJ19ECS85	Seminar	ECE	0	0	2	3	50	50	100	1
4	CRT	MVJ19ECC86	Certification	Industry/Institute	-	-	-	-	-	-	-	2
Total					6	0	2	15	250	250	500	16
Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, 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)												

List of Open Electives Offered by Department of ECE:

S.No	Open Elective-1	Course Title
1	MVJ19EC651	Digital Image Processing
2	MVJ19EC652	Principles of Communication
3	MVJ19EC653	Sensor Technology
4	MVJ19EC654	Robotics and Automation
S.No	Open Elective-2	Course Title
1	MVJ19EC751	Real-time operating system
2	MVJ19EC752	Industrial IOT
3	MVJ19EC753	Machine Learning Design &Application
4	MVJ19EC754	Introduction to MATLAB & Simulink

List of Open Electives:

S.no	Offering Department	Course Title
1	EEE	Renewable Energy Sources
2	EEE	Electrical Energy Conservation and Auditing
3	EEE	Utilization of Electrical Power
4	EEE	Special Electrical Machines
5	EEE	Disaster Management
6	EEE	Reliability of Engineering Systems
7	EEE	Industrial Instrumentation
8	EEE	Fuzzy Application to Engineering Problems
9	EEE	Space craft Power Technologies
10	CHEMICAL	Waste Water Treatment
11	CHEMICAL	Composite materials
12	CHEMICAL	Green Technology
13	CHEMICAL	Introduction to Biotechnology
14	CHEMICAL	Air Pollution and Control
15	CHEMICAL	Advanced Materials& Nano Technology
16	CHEMICAL	Solid Waste Management
17	CHEMICAL	Industrial Safety
18	CHEMICAL	Research Methodology and Report Writing

S.no	Offering Department	Course Title
19	ISE	(.) Dot Net Framework Concepts
20	ISE	TCP/IP Protocol Suit
21	ISE	Programming Language Principles
22	ISE	Free & Open Source Software
23	ISE	Cloud Computing
24	ISE	Wireless Network & Mobile Computing
25	ISE	Natural Language Processing
26	ISE	Ethical Hacking
27	ISE	Wireless Sensor & Adhoc Network
28	ISE	Social Network Analysis
29	ISE	Speech Processing
30	ISE	Pattern Recognition
31	CSE	Management and Entrepreneurship for IT Industry
32	CSE	Python Application Programming
33	CSE	Total Quality and Corporate Management
34	CSE	Cyber Forensics and IPR
35	CSE	Pattern Recognition
36	CSE	System Modelling and Simulation
37	CSE	IT Infrastructure Management
38	CSE	Image and Video Processing
39	CSE	Embedded Computing Systems

S.no	Offering Department	Course Title
40	CSE	Sensor Networks
41	CSE	Nano Robotics
42	CSE	Computational Intelligence
43	AERONAUTICAL	History of Flight and Technology
44	AERONAUTICAL	Space Mechanics
45	AERONAUTICAL	Aircraft Transport Systems
46	AERONAUTICAL	Unmanned Aerial Vehicles-Basic & Applications
47	AERONAUTICAL	High Performance Computing
48	AERONAUTICAL	Maintenance, Overhaul and Repair of Aircraft Systems
49	AERONAUTICAL	Rockets and Missiles
50	AERONAUTICAL	Artificial Intelligence and Robotics
51	AERONAUTICAL	Multidisciplinary Design Optimization
52	MECHANICAL	Automotive electronics
53	MECHANICAL	Smart materials and Mems
54	MECHANICAL	Mechanical Vibrations