

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)

Effective from the academic year 2019-20

I SEMESTER B.E. (CHEMISTRY GROUP)

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	MVJ19MAT11	Calculus and Linear Algebra	Mathematics	3	2	0	3	50	50	100	4
2	BSC	MVJ19CHE12	Engineering Chemistry	Chemistry	3	2	0	3	50	50	100	4
3	ESC	MVJ19CS13	C Programming for Problem Solving	Computer Science & Engineering	2	2	0	3	50	50	100	3
4	ESC	MVJ19EC14	Basic Electronics	Electronics & Communication Engineering	2	2	0	3	50	50	100	3
5	ESC	MVJ19ME15	Elements of Mechanical Engineering	Mechanical Engineering	2	2	0	3	50	50	100	3
6	BSC	MVJ19CHEL16	Engineering Chemistry Lab	Chemistry	0	0	2	3	50	50	100	1
7	ESC	MVJ19CSL17	C Programming Lab	Computer Science & Engineering	0	0	2	3	50	50	100	1
8	HSMC	MVJ19EGH18	Technical English-I	Humanities	0	2	0	3	50	50	100	1
Total					12	12	4	24	400	400	800	20

Note: BSC: Basic Science, ESC: Engineering Science, HSMC: Humanity and Social Science

I SEMESTER B.E. (PHYSICS GROUP)

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	MVJ19MAT11	Calculus and Linear Algebra	Mathematics	3	2	0	3	50	50	100	4
2	BSC	MVJ19PHY12	Engineering Physics	Physics	3	2	0	3	50	50	100	4
3	ESC	MVJ19EE13	Basic Electrical Engineering	Electrical & Electronics Engineering	2	2	0	3	50	50	100	3
4	ESC	MVJ19CV14	Elements of Civil Engineering & Mechanics	Civil Engineering	2	2	0	3	50	50	100	3
5	ESC	MVJ19EGR15	Engineering Graphics	Mechanical Engineering	2	0	2	3	50	50	100	3
6	BSC	MVJ19PHYL16	Engineering Physics Lab	Physics	0	0	2	3	50	50	100	1
7	ESC	MVJ19EEL17	Basic Electrical Engineering Lab	Electrical & Electronics Engineering	0	0	2	3	50	50	100	1
8	HSMC	MVJ19EGH18	Technical English-I	Humanities	0	2	0	3	50	50	100	1
Total					12	10	4	24	400	400	800	20

Note: BSC: Basic Science, ESC: Engineering Science, HSMC: Humanity and Social Science

II SEMESTER B.E. (CHEMISTRY GROUP)

S No	Course		Course Title	Teaching Department	Teaching hours/week			Examination				Credits
	Type	Code			Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total marks	
					L	T	P					
1	BSC	MVJ19MAT21	Calculus and Linear Algebra	Mathematics	3	2	0	3	50	50	100	4
2	BSC	MVJ19CHE22	Engineering Chemistry	Chemistry	3	2	0	3	50	50	100	4
3	ESC	MVJ19CS23	C Programming for Problem Solving	Computer Science & Engineering	2	2	0	3	50	50	100	3
4	ESC	MVJ19EC24	Basic Electronics	Electronics & Communication Engineering	2	2	0	3	50	50	100	3
5	ESC	MVJ19ME25	Elements of Mechanical Engineering	Mechanical Engineering	2	2	0	3	50	50	100	3
6	BSC	MVJ19CHEL26	Engineering Chemistry Lab	Chemistry	0	0	2	3	50	50	100	1
7	ESC	MVJ19CSL27	C Programming Lab	Computer Science & Engineering	0	0	2	3	50	50	100	1
8	HSMC	MVJ19EGH28	Technical English-II	Humanities	0	2	0	3	50	50	100	1
Total					12	12	4	24	400	400	800	20
Note: BSC: Basic Science, ESC: Engineering Science, HSMC: Humanity and Social Science												

II SEMESTER B.E. (PHYSICS GROUP)

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	MVJ19MAT21	Calculus and Linear Algebra	Mathematics	3	2	0	3	50	50	100	4
2	BSC	MVJ19PHE22	Engineering Physics	Physics	3	2	0	3	50	50	100	4
3	ESC	MVJ19EE23	Basic Electrical Engineering	Electrical & Electronics Engineering	2	2	0	3	50	50	100	3
4	ESC	MVJ19CV24	Elements of Civil Engineering & Mechanics	Civil Engineering	2	2	0	3	50	50	100	3
5	ESC	MVJ19EGR25	Engineering Graphics	Mechanical Engineering	2	0	2	3	50	50	100	3
6	BSC	MVJ19PHEL26	Engineering Physics Lab	Physics	0	0	2	3	50	50	100	1
7	ESC	MVJ19EEL27	Basic Electrical Engineering Lab	Electrical & Electronics Engineering	0	0	2	3	50	50	100	1
8	HSMC	MVJ19EGH28	Technical English-II	Humanities	0	2	0	3	50	50	100	1
Total					12	10	4	24	400	400	800	20

Note: BSC: Basic Science, ESC: Engineering Science, HSMC: Humanity and Social Science

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	
	L	T			P							
1	BSC	MVJ19MAT31	Transform calculus and Fourier series	Mathematics	2	2	0	3	50	50	100	3
2	PCC	MVJ19ME32	Mechanics of Materials	ME	3	2	0	3	50	50	100	4
3	PCC	MVJ19ME33	Thermodynamics	ME	2	2	0	3	50	50	100	3
4	PCC	MVJ19ME34	Materials Engineering	ME	3	0	0	3	50	50	100	3
5	PCC	MVJ19ME35	Manufacturing Process	ME	3	0	0	3	50	50	100	3
6	PCC	MVJ19ME36	Machine Drawing	ME	2	0	2	3	50	50	100	3
7	PCC	MVJ19MEL37	Mechanics and Materials Testing-Lab	ME	0	1	3	3	50	50	100	2
8	PCC	MVJ19MEL38	Foundry, Forging and welding-Lab	ME	0	1	3	3	50	50	100	2
9	HSMC	MVJ19KAN39	Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ19CPH39	CPH		1	0	0					
10	BSC	MVJ19MATDIP301	Additional Mathematics-1	Mathematics	1	0	0	3	50	50	100	-
Total					17	8	8	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	MVJ19MAT41	Numerical Methods	Mathematics	2	2	0	3	50	50	100	3
2	PCC	MVJ19ME42	Applied Thermodynamics	ME	3	2	0	3	50	50	100	4
3	PCC	MVJ19ME43	Manufacturing Technology	ME	3	0	0	3	50	50	100	3
4	PCC	MVJ19ME44	Kinematics of Machines	ME	2	2	0	3	50	50	100	3
5	PCC	MVJ19ME45	Fluid Mechanics	ME	2	2	0	3	50	50	100	3
6	PCC	MVJ19ME46	Instrumentation and metrology	ME	3	0	0	3	50	50	100	3
7	PCC	MVJ19MEL47	Machine shop-Lab	ME	0	1	3	3	50	50	100	2
8	PCC	MVJ19MEL48	Instrumentation and measurement-Lab	ME	0	1	3	3	50	50	100	2
9	HSMC	MVJ19KAN49	Kannada	Humanities	1	0	0	3	50	50	100	1
		MVJ19CPH49	CPH		1	0	0					
10	BSC	MVJ19MATDIP 401	Additional Mathematics-2	Mathematics	1	0	0	3	50	50	100	-
Total					17	10	6	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	Humanities	3	0	0	3	50	50	100	3
2	PCC	MVJ19ME52	Design of Machine Elements-I	ME	2	2	0	3	50	50	100	4
3	PCC	MVJ19ME53	Turbo Machinery	ME	2	2	0	3	50	50	100	4
4	PCC	MVJ19ME54	Dynamics of Machines	ME	2	2	0	3	50	50	100	3
5	PE	MVJ19ME55X	Professional Elective - 1	ME	3	0	0	3	50	50	100	3
6	PCC	MVJ19XMEL56	Fluid Mechanics and Fluid Machinery-Lab	ME	0	1	3	3	50	50	100	2
7	PCC	MVJ19MEL57	Energy conversion-Lab	ME	0	1	3	3	50	50	100	2
8	PCC	MVJ19MEL58	MATLAB and LabVIEW-Lab	ME	0	1	3	3	50	50	100	2
9	HSMC	MVJ19ENV59	Environmental Studies	Humanities	1	0	0	3	50	50	100	1
Total					13	9	9	27	450	450	1000	24

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

- Professional Elective - 1:**
1. MVJ19ME551: Internal Combustion Engine,
 2. MVJ19ME552: Advanced Manufacturing Technology,
 3. MVJ19ME553: Composite Materials,
 4. MVJ19ME554: Total Quality Management

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										
1	PCC	MVJ19ME61	Heat and Mass Transfer	ME	2	2	0	3	50	50	100	4
2	PCC	MVJ19ME62	Design of Machine Elements-II	ME	2	2	0	3	50	50	100	4
3	PE	MVJ19ME63X	Professional Elective -2	ME	3	0	0	3	50	50	100	3
4	PE	MVJ19ME64X	Professional Elective -3	ME	3	0	0	3	50	50	100	3
5	OE	MVJ19XX65X	Open Elective – 1	ME	3	0	0	3	50	50	100	3
6	PCC	MVJ19MEL66	CAMA-Lab	ME	0	1	3	3	50	50	100	2
7	PCC	MVJ19MEL67	Heat Transfer Lab-Lab	ME	0	1	3	3	50	50	100	2
8	Proj	MVJ19XXP68	Mini-Project	ME				3	50	50	100	3
Total					13	6	6	24	400	400	800	24

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

Professional Elective -2:

1. MVJ19ME631: Refrigeration and Air-Conditioning,
2. MVJ19ME632: Plastic Processing,
3. MVJ19ME633: Smart Materials and Structures,
4. MVJ19ME634: Finite Element Method

Professional Elective -3:

1. MVJ19ME641: Power Plant Engineering,
2. MVJ19ME642: Computer Integrated Manufacturing,
3. MVJ19ME643: Material Characterisation Techniques,
4. MVJ19ME644: Theory of Elasticity

Open Elective – 1:

1. MVJ19ME651: Automotive Electronics
2. MVJ19ME652: Operation Management
3. MVJ19ME653: Engineering Economics

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	MVJ19ME71	Mechanical Vibrations	ME	2	2	0	3	50	50	100	4
2	PCC	MVJ19ME72	Operation Research	ME	2	2	0	3	50	50	100	4
3	PE	MVJ19ME73X	Professional Elective -4	ME	3	0	0	3	50	50	100	3
4	PE	MVJ19ME74X	Professional Elective -5	ME	3	0	0	3	50	50	100	3
5	OE	MVJ19XX75X	Open Elective – 2	ME	3	0	0	3	50	50	100	3
6	PCC	MVJ19MEL76	Design -Lab	ME	0	1	3	3	50	50	100	2
7	PCC	MVJ19MEL77	CIM-Lab	ME	0	1	3	3	50	50	100	2
8	Proj	MVJ19MEP78	Project Phase-1	ME				-	50	-	50	2
Total					13	6	6	21	400	350	750	23

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

Professional Elective -4:

1. MVJ19ME731: Renewable Energy Sources
2. MVJ19ME732: CAD/CAM,
3. MVJ19ME733: Computational Mechanics,
4. MVJ19ME734: Theory of Plasticity

Professional Elective -5:

1. MVJ19ME741: Solar Energy
2. MVJ19ME742: Lean Manufacturing,
3. MVJ19ME743: Control Engineering,
4. MVJ19ME744: Tribology

Open Elective – 2:

1. MVJ19ME751: Energy Engineering,
2. MVJ19ME752: Smart Materials and Mems,
3. MVJ19ME753: Operation Research

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							
3	Proj	MVJ19MEP83	Project Phase-2	ME				3	50	50	100	10
4	Int	MVJ19MEI84	Internship	ME				3	50	50	100	3
5	Sem	MVJ19MES85	Seminar	ME				3	50	50	100	1
6	CRT	MVJ19MEC86	Certification	Industry/Institute								2
Total					6			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)												