

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) Aeronautical Engineering

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) Aeronautical Engineering

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	MVJ19ME15	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	6	24	400	400	800	20

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

II SEMESTER B.E. (CHEMISTRY GROUP) Aeronautical Engineering

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	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) Aeronautical Engineering

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	MVJ19ME25	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	6	24	400	400	800	20

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

III SEMESTER B.E. Aeronautical Engineering

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	MVJ19MAE31/ MAS31	Transforms & Statistical Methods	Mathematics	3	2	-	3	50	50	100	3
2	PCC	MVJ19AE32/ AS32	Aerothermodynamics	AE	3	2	-	3	50	50	100	4
3	PCC	MVJ19AE33	Elements of Aeronautics	AE	3	-	-	3	50	50	100	3
4	PCC	MVJ19AE34/ AS34	Mechanics of Materials	AE	2	2	-	3	50	50	100	3
5	PCC	MVJ19AE35/ AS35	Mechanics of Fluids	AE	3	-	-	3	50	50	100	3
6	PCC	MVJ19AE36/AS36	Aerospace Materials	AE	2	2	-	3	50	50	100	3
7	PCC	MVJ19AEL37A/ AEL37B	Measurement and Metrology Lab/ Material Testing Lab	AE	-	-	3	3	50	50	100	2
8	PCC	MVJ19AEL38	Machine Shop	AE	-	-	3	3	50	50	100	2
9	HSM C	MVJ19KAN39	Kannada	Humanities	1	-	-	3	50	50	100	1
		MVJ19CPH39	CPH		1	-	-	3	50	50		
10	BSC	MVJ19MAEDIP301 /MASDIP301	Diploma Mathematics-I	Mathematics	2	1	-	3	50	50	100	-
Total					20	9	6	30	500	500	1000	24
Note: BSC: Basic Science, PCC: Professional Core Course , HSMC: Humanity and Social Science, MVJ19MATDIP301- Mandatory non-credit course												

IV SEMESTER B.E. Aeronautical Engineering

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	MVJ19MAE41/ MAS41	Complex Variables & Numerical Methods	Mathematics	3	2	-	3	50	50	100	3
2	PCC	MVJ19AE42/ AS42	Incompressible Aerodynamics	AE	2	2	-	3	50	50	100	4
3	PCC	MVJ19AE43	Fundamentals of Aircraft Structures	AE	3	2	-	3	50	50	100	3
4	PCC	MVJ19AE44	Aircraft Propulsion	AE	3	-	-	3	50	50	100	3
5	PCC	MVJ19AE45/ AS45	Turbomachines	AE	3	-	-	3	50	50	100	3
6	PCC	MVJ19AE46/ AS46	Mechanism and Machine Theory	AE	3	-	-	3	50	50	100	3
7	PCC	MVJ19AEL47A/ AEL47B	Material Testing Lab/ Measurement and Metrology Lab	AE	-	-	3	3	50	50	100	2
8	PCC	MVJ19AEL48	Computer Aided Aircraft Drawing	AE	-	-	3	3	50	50	100	2
9	HSMC	MVJ19KAN49	Kannada	Humanities	1	-	-	3	50	50	100	1
		MVJ19CPH49	CPH		1	-	-	3	50	50		
10	BSC	MVJ19MAEDIP401 /MASDIP401	Diploma Mathematics-II	Mathematics	2	1	-	3	50	50	100	-
Total					21	7	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. Aeronautical Engineering

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	AE	3	-	-	3	50	50	100	3
2	PCC	MVJ19AE52	Aircraft Systems and Instrumentation	AE	3	-	-	3	50	50	100	4
3	PCC	MVJ19AE53	Finite Element Methods	AE	3	2	-	3	50	50	100	4
4	PCC	MVJ19AE54/ AS54	Theory of Vibration	AE	3	1	-	3	50	50	100	3
5	PE	MVJ19AE55X	Professional Elective-I	AE	3	-	-	3	50	50	100	3
6	PCC	MVJ19AEL56	Aerodynamic Lab	AE	-	-	3	3	50	50	100	2
7	PCC	MVJ19AEL57	Energy Conversion Lab	AE	-	-	3	3	50	50	100	2
8	PCC	MVJ19AEL58	Fluid Mechanics Lab	AE	-	-	3	3	50	50	100	2
9	HSMC	MVJ19ENV59	Environmental Studies	Humanities	1	-	-	3	50	50	100	1
Total					16	3	9	27	450	450	900	24

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

Professional Elective-1	
MVJ19AE551	Experimental Aerodynamics
MVJ19AE552/AS552	Composite Structures
MVJ19AE553	Heat and Mass Transfer

VI SEMESTER B.E. Aeronautical Engineering

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	MVJ19AE61	Compressible Aerodynamics	AE	3	2	-	3	50	50	100	4
2	PCC	MVJ19AE62	Aircraft Structural Analysis	AE	3	-	-	3	50	50	100	4
3	PE	MVJ19AE63X	Professional Elective-II	AE	3	-	-	3	50	50	100	3
4	PE	MVJ19AE64X	Professional Elective-III	AE	3	-	-	3	50	50	100	3
5	OE	MVJ19AE65X	Open Elective-I	AE	3	-	-	3	50	50	100	3
6	PCC	MVJ19AEL66	Aircraft Propulsion Lab	AE	0	0	3	3	50	50	100	2
7	PCC	MVJ19AEL67	Aircraft Structures Lab	AE	0	0	3	3	50	50	100	2
8	Proj	MVJ19AEP68	Mini-Project	AE				3	50	50	100	3
Total					15	2	6	24	400	400	800	24
Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work												

Professional Elective-II		Professional Elective-III	
MVJ19AE631	Helicopter Aerodynamics	MVJ19AE641	Maintenance Repair and Overhaul
MVJ19AE632/AS632	Experimental Stress Analysis	MVJ19AE642	Artificial Intelligence & Robotics
MVJ19AE633/AS633	Fuels and Combustion	MVJ19AE643	Gas Turbine Technology

Open Elective-I	
MVJ19AE651	History of Aircraft Flight and Technology
MVJ19AE652	Aircraft Transport Systems
MVJ19AE653	Aircraft Systems & Instrumentation

VII SEMESTER B.E. Aeronautical Engineering

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	MVJ19AE71	Aircraft Stability & Control	AE	3	2	-	3	50	50	100	4
2	PCC	MVJ19AE72	Aircraft Performance	AE	3	-	-	3	50	50	100	4
3	PE	MVJ19AE73X	Professional Elective-IV	AE	3	-	-	3	50	50	100	3
4	PE	MVJ19AE74X	Professional Elective-V	AE	3	-	-	3	50	50	100	3
5	OE	MVJ19AE75X	Open Elective-II	AE	3	-	-	3	50	50	100	3
6	PCC	MVJ19AEL76	Flight Simulation Lab	AE	-	-	3	3	50	50	100	2
7	PCC	MVJ19AEL77	Modeling and Analysis Lab	AE	-	-	3	3	50	50	100	2
8	Proj	MVJ19AEP78	Project Phase-1	AE				-	50	-	50	2
Total					15	2	6	21	400	350	750	23
Note: PCC: Professional Core Course , PE: Professional Elective, OE: Open Elective, Proj: Project Work												

Professional Elective-IV		Professional Elective-V	
MVJ19AE731	Computational Fluid Dynamics	MVJ19AE741/AS741	Avionics
MVJ19AE732	Fatigue and Fracture Mechanics	MVJ19AE742	Flight Vehicle Design
MVJ19AE733/AS733	Control Engineering	MVJ19AE743	Guidance Navigation & Control

Open Elective-II	
MVJ19AE751	Aircraft Communication & Navigation Aids
MVJ19AE752	Aircraft Armament Stores & Escape Aid Systems
MVJ19AE753	Composite Materials

VIII Semester B.E. Aeronautical Engineering

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	MVJ19AEP83	Project Phase-2				3	50	50	100	10	
2.	Int	MVJ19AEI84	Internship				3	50	50	100	3	
3.	Sem	MVJ19AES85	Seminar				3	50	50	100	1	
4.	CRT	MVJ19AEC86	Certification	Industry/Institute							2	
Total					6	-	-	15	150	150	300	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)												