



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 2021-22

Outcome Based Education (OBE) and Choice Based Credit System (CBCS) Effective from the academic year 2021-22

Department of Aeronautical Engineering

III SEMESTER

Sl. No.	Course		Course Title	BOS	Teaching Hours/Week				Duration in Hours	Examination			Credits
					Theory/ lecture	Tutorials	Practical/ Drawing	Self-Study Components		CIE Marks	SEE Marks	Total Marks	
	Type	Code			L	T	P	S					
1	BSC	MVJ21MAT31A	Transforms and Statistical Methods	MA	3	2	0	-	3	50	50	100	4
2	PCC	MVJ21AE32	Thermodynamics	AE	3	2	0	-	3	50	50	100	4
3	PCC	MVJ21AE33	Elements of Aeronautics	AE	3	0	0	-	3	50	50	100	3
4	IPCC	MVJ21AE34	Mechanics of Materials	AE	3	0	2	-	3	100	100	200	4
5	IPCC	MVJ21AE35	Mechanics of Fluids	AE	3	0	2	Y	3	100	100	200	4
6	HSMC	MVJ21XX36	Kannada/ Constitution of India and Professional Ethics and Cyber law	Any Department	1	0	0	-	2	50	50	100	1
7	AEC	MVJ21AEA37	Aerospace Materials	AE	1	0	2	-	2	50	50	100	2
8	BSC	MVJ21MATDIP-1	Additional Mathematics-I	MA	1	2	0	-	3	50	50	100	-
<b>Total</b>					<b>17/17</b>	<b>4/6</b>	<b>6</b>		<b>19/22</b>	<b>450/550</b>	<b>450/550</b>	<b>900/1000</b>	<b>22</b>
<b>Note: BSC:</b> Basic Science Course, <b>PCC:</b> Professional Core Course, <b>IPCC:</b> Integrated Professional Core Course, <b>HSMC:</b> Humanity and Social Science & Management Course, <b>AEC:</b> Ability Enhancement Course, <b>L:</b> Lecture, <b>T:</b> Tutorial, <b>P:</b> Practical, <b>S:</b> Self Study, <b>CIE:</b> Continuous Internal Evaluation, <b>SEE:</b> 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.

**IV SEMESTER**

Sl. No.	Course		Course Title	BOS	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	MVJ21MAT41A	Complex Variables and Numerical Methods	MA	2	2	-	-	3	50	50	100	3
2	PCC	MVJ21AE42	Incompressible Aerodynamics	AE	3	-	-	-	3	50	50	100	3
3	PCC	MVJ21AE43	Finite Element Methods	AE	2	2	-	-	3	50	50	100	3
4	IPCC	MVJ21AE44	Mechanism and Machine Theory	AE	3		2	-	3	100	100	200	4
5	IPCC	MVJ21AE45	Fundamentals of Aircraft Structures	AE	3		2	Y	3	100	100	200	4
6	HSMC	MVJ21XX46	Kannada/ Constitution of India and Professional Ethics and Cyber law	HMSC	1	-			2	50	50	100	1
7	AEC	MVJ21AEA47	Turbomachines	AE	1	-	-		2	50	50	100	2
8	INT	MVJ21INT48	Summer Internship I	AE	-	-	-						2
9	BSC	MVJ21MATDIP-II	Additional Mathematics-II	MA	1	2	-	-	3	50	50	100	-
<b>Total</b>					<b>16/17</b>	<b>4/4</b>	<b>4</b>			<b>450/500</b>	<b>450/500</b>	<b>1000</b>	<b>22</b>

**Note:** BSC: Basic Science Course, PCC: Professional Core Course, IPCC: Integrated Professional Core Course, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, INT: Internship, L: Lecture, T: Tutorial, P: Practical, S: Self Study, 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	BOS	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	HSMC	MVJ21AE51	Aviation Management	AE	3	-	-	-	3	50	50	100	3
2	PCC	MVJ21AE52	Aircraft Performance	AE	3	-	-	-	3	50	50	100	3
3	IPCC	MVJ21AE53	Compressible Aerodynamics	AE	3	-	2	-	3	100	100	200	4
4	IPCC	MVJ21AE54	Aircraft Propulsion	AE	3	-	2	Y	3	100	100	200	4
5	PEC	MVJ21AE55X	Professional Elective – I	AE	3	-	-	-	3	50	50	100	3
6	HSMC	MVJ21XX56	Environmental Studies	CV	1	-	-	-	2	50	50	100	1
7	AEC	MVJ21RMI57	Research Methodology & IPR	AE	1	2	-		2	50	50	100	2
8	UHV	MVJ21UHV58	Universal Human Values	CV	2	-			2	50	50	100	2
<b>Total</b>					<b>19</b>	<b>2</b>	<b>4</b>			<b>500</b>	<b>500</b>	<b>1000</b>	<b>22</b>

**Note: HSMC:** Humanity and Social Science & Management Course, **PCC:** Professional Core Course, **IPCC:** Integrated Professional Core Course, **PEC:** Professional Elective Course, **AEC:** Ability Enhancement Course, **UHV:** Universal Human Values, **L:** Lecture, **T:** Tutorial, **P:** Practical, **S:** Self Study, **CIE:** Continuous Internal Evaluation, **SEE:** Semester End Evaluation.

Course Code	Professional Elective – I
MVJ21AE551	Aircraft Systems and Instrumentation
MVJ21AE552	Theory of Vibration
MVJ21AE553	Gas Turbine Technology
MVJ21AE554	Optimisation Techniques and Probability Theory

## VI SEMESTER

Sl. No.	Course		Course Title	BOS	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	HSMC	MVJ21AE61	Computational Fluid Dynamics	AE	2	2	-	-	3	50	50	100	3
2	IPCC	MVJ21AE62	Aircraft Structural Analysis	AE	3	-	2	y	3	100	100	200	4
3	IPCC	MVJ21AE63	Aircraft Stability and Control	AE	3	-	2	y	3	100	100	200	4
4	OEC	MVJ21AE64X	Open Elective-I	AE	3	-	-	-	3	50	50	100	3
5	OEC	MVJ21AE65	MOOC Courses (Open Elective-II)	AE	A twelve-week course should be selected from online platforms like NPTEL/SWAYAM							3	
6	AEC	MVJ21AEA66	Aircraft Maintenance Repair and Overhaul	AE	2	-	-	-	2	50	50	100	1
7	PRJ	MVJ21AEMP67	Mini project	AE	-	-	4	-	3	50	50	100	2
8	INT	MVJ21INT68I	Summer Internship II	AE	Completed during the intervening period of IV and V semesters					50	100	2	
<b>Total</b>					<b>13</b>	<b>2</b>	<b>8</b>		<b>17</b>	<b>400</b>	<b>500</b>	<b>1000</b>	<b>22</b>

**Note:** HSMC: Humanity and Social Science & Management Course, IPCC: Integrated Professional Core Course, OEC: Open Elective Course, AEC: Ability Enhancement Course, PRJ: Project, INT: Internship, L: Lecture, T: Tutorial, P: Practical, S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

**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	Open Elective-I
MVJ21AE641	General Introduction to Aeronautics
MVJ21AE642	Introduction to Helicopters
MVJ21AE643	Introduction to Composite Structures
MVJ21AE644	Unmanned Aerial Vehicles

**VII SEMESTER**

Sl. No.	Course		Course Title	BOS	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	MVJ21AE71	Aircraft Design	AE	3	-	2	Y	3	100	100	200	4
2	PEC	MVJ21AE72X	Professional Elective-II	AE	3	-	-	-	3	50	50	100	3
3	PEC	MVJ21AE73X	Professional Elective-III	AE	3	-	-	-	3	50	50	100	3
4	OEC	MVJ21AE74X	Open Elective-III	AE	3	-	-	-	3	50	50	100	3
5	PRJ	MVJ21AEP75	Project Phase I	AE	-	-	4		3	50	50	100	2
6	AEC	MVJ21AEA76	Ability Enhancement Course-4	AE	A four-week course should be selected from online platforms								1
<b>Total</b>					<b>12</b>	<b>0</b>	<b>6</b>		<b>15</b>	<b>300</b>	<b>300</b>	<b>600</b>	<b>16</b>

**Note:** IPCC: Integrated Professional Core Course, PEC: Professional Elective Course, OEC: Open Elective Course, PRJ: Project, AEC: Ability Enhancement Course, L: Lecture, T: Tutorial, P: Practical, S: Self Study, CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation.

Course Code	Professional Elective-II	Course Code	Professional Elective-III	Course Code	Open Elective-II
MVJ21AE721	Helicopter Aerodynamics	MVJ21AE731	Flight Testing	MVJ21AE741	Aircraft Propulsion
MVJ21AE722	Composite Structures	MVJ21AE732	Fatigue and Fracture Mechanics	MVJ21AE742	Aircraft Transport System
MVJ21AE723	Rocket and Missiles	MVJ21AE733	Artificial Intelligence and Robotics	MVJ21AE743	Rocket and Missiles
MVJ21AE724	Experimental Stress Analysis	MVJ21AE734	Unmanned Aerial Vehicles	MVJ21AE744	Aircraft Systems and Instrumentation

**VIII SEMESTER**

Sl. No.	Course		Course Title	BOS	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	PRJ	MVJ21AEP81	Project Phase II	AE	-	-	-	-	3	50	50	100	10
2	INT	MVJ21INT82	Research / Industrial Internship	AE	Should be completed in 24 weeks, beginning after the sixth semester, and continuing through the seventh and eighth semesters.				3	50	50	100	05
3	Seminar	MVJ21AES83	Seminar	AE	-	-	-	-	-	100	-	100	01
<b>Total</b>						-	-		<b>6</b>	<b>200</b>	<b>100</b>	<b>300</b>	<b>16</b>

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

**Research/Industrial Internship:** Viva voice will be conducted for the 24 weeks Research/Industrial/Rural Internship activities carried out during beginning after the sixth semester test and continuing through the seventh and eighth 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.

HOD

Dean Academics