

# MVJ College of Engineering, Whitefield, Bangalore

*An Autonomous Institution, Affiliated to VTU, Belagavi*

Scheme of Teaching and Examination 2022

Effective from the academic year 2022-23

## Department of Aeronautical Engineering-PG Program

### I SEMESTER M.Tech AE

S. No	Course		Course Title	Teaching Department	Teaching hours/week				Examination				Credits
					Theory	Practical / Seminar	Tutorial / Skill Development Activity	Self-Study Component	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	L	T			P	S							
1	BSC	MVJ22MAE11	Applied Mathematics	Mathematics	3	0	0	0	3	50	50	100	3
2	IPCC	MVJ22MAE12	Aerospace Propulsion (+ Propulsion Lab)	AE	3	2	0	0	3	50	50	100	4
3	PCC	MVJ22MAE13	Aerodynamics	AE	3	0	2	0	3	50	50	100	4
4	PCC	MVJ22MAE14	Introduction to Aerospace Vehicles and Systems	AE	2	0	2	0	3	50	50	100	3
5	PCC	MVJ22MAE15	Finite Element Methods	AE	2	0	2	0	3	50	50	100	3
6	MCC	MVJ22IPR16	Research Methodology and IPR	AE	3	0	0	0	3	50	50	100	3
7	PCCL	MVJ22MAEL17	Aerodynamic Lab	AE	1	2	0	0	3	50	50	100	2
8	AUD/AEC	MVJ22MAE18	(online)	AE	Classes and evaluation procedures are as per the policy of the online course providers							PP	
<b>Total</b>					<b>17</b>	<b>4</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>350</b>	<b>350</b>	<b>700</b>	<b>22</b>

Note: BSC-Basic Science Courses, PCC: Professional core. IPCC-Integrated Professional Core Courses, MCC- Mandatory Credit Course, AUD/AEC –Audit Course / Ability Enhancement Course(A pass in AUD/AEC is mandatory for the award of the degree), PCCL-Professional Core Course lab, L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities(Hours are for Interaction between faculty and students). PP/NP-Passed / Not Passed (Only for non-Credit Course)

**II SEMESTER M.Tech AE**

S. No	Course		Course Title	Teaching Department	Teaching hours/week				Examination				Credits
					Theory	Practical / Seminar	Tutorial / Skill Development Activity	Self-Study Component	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	Type	Code			L	T	P	S					
1	PCC	MVJ22MAE21	Flight Mechanics	AE	2	0	2	0	3	50	50	100	3
2	IPCC	MVJ22MAE22	Airframe Structures and Structural Design (+Modelling and Analysis Lab)	AE	3	2	0	0	3	50	50	100	4
3	PEC	MVJ22MAE23X	Professional elective -1	AE	2	0	2	0	3	50	50	100	3
4	PEC	MVJ22MAE24X	Professional elective -2	AE	2	0	2	0	3	50	50	100	3
5	MPC	MVJ22MAE25	Mini Project with seminar	AE	0	4	2	0	-	100	-	100	3
6	PCCL	MVJ22MAEL26	Structures Lab	AE	1	2	0	0	3	50	50	100	2
7	AUD/AEC	MVJ22MAE22	(Online)	AE	Classes and evaluation procedures are as per the policy of the online course providers								PP
<b>Total</b>					<b>10</b>	<b>8</b>	<b>8</b>	<b>-</b>	<b>-</b>	<b>350</b>	<b>250</b>	<b>600</b>	<b>18</b>

Note: PCC: Professional core courses, PEC: Professional Elective Courses, IPCC-Integrated Professional Core Courses. MPS-Mini Project With Seminar; AUD/AEC; Audit Courses / Ability Enhancement Courses (Mandatory), PCCL-Professional Core Course lab, L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities (Hours are for Interaction between faculty and students) PP/NP-Passed / Not Passed (Only for non-Credit Course).

Professional Elective -1		Professional Elective -2	
MVJ22MAE231	Applied Computational Fluid Dynamics	MVJ22MAE241	Hypersonic Aerodynamics
MVJ22MAE232	Fatigue and Fracture Mechanics	MVJ22MAE242	Theory of Aero elasticity
MVJ22MAE233	Aero-engine Testing and Evaluation	MVJ22MAE243	Theory of Combustion
MVJ22MAE234	Avionics	MVJ22MAE244	Artificial Intelligence and Robotics
MVJ22 MAE235	Unmanned Aerial Vehicles	MVJ22MAE245	Helicopter Dynamics

**III SEMESTER M.Tech AE**

S. No	Course		Course Title	Teaching Department	Teaching hours/week				Examination				Credits
					Theory	Practical / Seminar	Tutorial / Skill Development Activity	Self-Study Component	Duration in Hours	CIE Marks	SEE Marks	Total marks	
	Type	Code			L	T	P	S					
1	PCC	MVJ22MAE31	Aircraft Flight Dynamics and Automatic Flight Control	AE	3	0	2	0	3	50	50	100	4
2	PEC	MVJ22MAE32X	Professional elective -3	AE	3	0	0	0	3	50	50	100	3
3	OEC	MVJ22MAE33X	Open elective Courses-1	AE	3	0	0	0	3	50	50	100	3
4	PROJ	MVJ22MAEP34	Project Work phase -1	AE	0	6	0	0	-	100	-	100	3
5	SP	MVJ22MAES35	Societal Project	AE	0	6	0	0	-	100	-	100	3
6	INT	MVJ22MAEI36	Internship	AE	(6 weeks Internship Completed during the intervening vacation of II and III semesters.)				3	50	50	100	6
<b>Total</b>					<b>9</b>	<b>12</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>400</b>	<b>200</b>	<b>600</b>	<b>22</b>

Note: PCC: Professional core courses, PEC: Professional Elective Courses, IPCC-Integrated Professional Core Courses. MPS-Mini Project with Seminar; AUD/AEC; Audit Courses / Ability Enhancement Courses (Mandatory), PCCL-Professional Core Course lab, L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities (Hours are for Interaction between faculty and students) PP/NP-Passed / Not Passed (Only for non-Credit Course)

Professional Elective -3		Open Elective Courses-1	
MVJ22MAE321	Flight Vehicle Design	MVJ22MAE331	Unmanned Aerial Vehicles
MVJ22MAE322	Composite Materials and Fabrication Techniques	MVJ22MAE332	Aircraft Transportation Systems
MVJ22MAE323	Rockets and Missiles	MVJ22MAE333	Aircraft Systems and Instrumentation
MVJ22MAE324	Flight Testing	MVJ22MAE334	Composite Materials and Fabrication Techniques
MVJ22MAE325	Space Mechanics	MVJ22MAE335	Avionics

**IV SEMESTER M.Tech AE**

S. No	Course		Course Title	Teaching Department	Teaching hours/week				Examination			Credits	
					Theory	Practical / Field work	Tutorial / Skill Development Activity	Self-Study Component	Duration in Hours	CIE Marks	SEE Marks		Total marks
	L	T			P	S							
1	PROJ	MVJ22MAEP41	Project work phase -2	AE	-	8	-	-	3	100	100	200	18
<b>Total</b>					-	<b>8</b>	-	-	-	<b>100</b>	<b>100</b>	<b>200</b>	<b>18</b>

**Note:**
**1. Project Work Phase-2:**

Students in consultation with the guide/co-guide (if any) in disciplinary project or guides/co-guides (if any) of all departments in case of multidisciplinary projects, shall continue to work of Project Work phase -1 to complete the Project work. Each student / batch of students shall prepare project document, and present a seminar.

CIE marks shall be awarded by a committee comprising of HoD as Chairman, all Guide/s and co-guide/s (if any) and a senior faculty of the concerned departments. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report, Project Presentation skill, and performance in the Question and Answer session in the ratio of 50:25:25.

SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.