



**SHRI VILEPARLE KELAVANI MANDAL'S
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**
(Autonomous College Affiliated to the University of Mumbai)



Scheme for Second Year of B. Tech. Program in Mechanical Engineering: Semester III (Autonomous)
(Academic Year 2023-2024)

Sr. No.	Course Code	Courses	Teaching Scheme (hrs.)				Continuous Assessment (A) (marks)			Semester End Assessment (B) (Marks)					(A+B)	Total Credits	
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th / Cb	O	P	O & P	Total SEA(B)			
1	DJS22MEC301	Engineering Mathematics III	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MET301	Engineering Mathematics III Tutorial	--	--	1	1	--	25	25	--	--	--	--	25	25	1	
2	DJS22MEC302	Engineering Thermodynamics	3	--	--	3	35	--	35	65	--	--	--	65	100	3	3
3	DJS22MEC303	Mechanics of Materials	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL303	Mechanics of Materials Laboratory	--	2	--	1	--	25	25	--	25	--	--	25	50	1	
4	DJS22MEC304	Manufacturing Processes	2	--	--	2	35	--	35	65	--	--	--	65	100	2	2
5	DJS22MEL305	Computer Aided Machine Drawing Laboratory	--	4	--	2	--	50	50	--	--	--	50	50	100	2	2
6	DJS22MEL306	Manufacturing Processes Laboratory	--	4	--	2	--	50	50	--	--	50	--	50	100	2	2
7	DJS22IHC1	Universal Human Values	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22IHT1	Universal Human Values Tutorial	--	--	1	1	--	25	25	--	--	--	--	25	25	1	
8	DJS22MEL307	Python for Mechanical Engineering Laboratory	--	2	--	1	--	25	25	--	--	25	--	25	50	1	1
9	DJS22A2	Innovative Product Development I	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Total			13	14	2	21	175	200	375	325	25	75	50	475	850	21	



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Scheme for Second Year of B. Tech. Program in Mechanical Engineering: Semester IV (Autonomous)
(Academic Year 2023-2024)

Sr. No.	Course Code	Courses	Teaching Scheme (hrs.)				Continuous Assessment (A) (marks)			Semester End Assessment (B) (Marks)					(A+B)	Total Credits	
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th / Cb	O	P	O & P	Total SEA(B)			
1	DJS22MEC401	Engineering Mathematics IV	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MET401	Engineering Mathematics IV Tutorial	--	--	1	1	--	25	25	--	--	--	--	--	25	1	
2	DJS22MEC402	Fluid Mechanics	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL402	Fluid Mechanics Laboratory	--	2	--	1	--	25	25	--	25	--	--	25	50	1	
3	DJS22MEC403	Kinematics of Machinery	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL403	Kinematics of Machinery Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
4	DJS22MEC404	Engineering Materials	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22MEL404	Material Testing Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
5	DJS22MEC405	Advanced Manufacturing Processes	2	--	--	2	35	--	35	65	--	--	--	65	100	2	2
6	DJS22MEC406	Mechanical Measurements and Metrology	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL406	Mechanical Measurements and Metrology Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
7	DJS22MEL407	Advance Manufacturing Processes Laboratory	--	4	--	2	--	50	50	--	--	50	--	50	100	2	2
8	DJS22A3	Constitution of India	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9	DJS22A4	Innovative Product Development II	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Total			17	14	1	23	210	175	385	390	25	50	0	465	850	23	



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Proposed Scheme for Third Year of B. Tech. Program in Mechanical Engineering: Semester V (Autonomous)
(Academic Year 2024-2025)

Sr. No.	Course Code	Courses	Teaching Scheme (hrs.)				Continuous Assessment (A) (marks)			Semester End Assessment (B) (Marks)					(A+B)	Total Credits	
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th / Cb	O	P	O & P	Total SEA (B)			
1	DJS22MEC501	Automotive Prime Movers	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL501	Automotive Prime Movers Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
2	DJS22MEC502	Computational Heat Transfer	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL502	Computational Heat Transfer Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
3	DJS22MEC503	Dynamics of Machinery	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL503	Dynamics of Machinery Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
4	DJS22MEC504	Industrial Electronics and Controls	4	--	--	4	35	--	35	65	--	--	--	65	100	4	5
	DJS22MEL504	Industrial Electronics and Controls Laboratory	--	2	--	1	--	25	25	--	--	--	25	25	50	1	
5	DJS22MEC505	CAD/CAM	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22MEL505	CAD/CAM Laboratory	--	2	--	1	--	25	25	--	--	--	25	25	50	1	
6 @	DJS22MEEC501X	Department Elective - I	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22MEEL501X	Department Elective - I Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
7	DJS22A5	Environmental Studies	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8	DJS22MEL506	Innovative Product Development III	--	2	--	1	--	25	25	--	--	--	25	25	50	1	1
Total			18	14	0	24	210	175	385	390	0	0	75	465	850	24	

@Any 1 Department Elective from given list.



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Course Code	Department Elective - I
DJS22MEEC5011	Advanced Materials & Processes
DJS22MEEL5011	Advanced Materials & Processes Laboratory
DJS22MEEC5012	Automobile Engineering
DJS22MEEL5012	Automobile Engineering Laboratory
DJS22MEEC5013	Reliability Engineering
DJS22MEEL5013	Reliability Engineering Laboratory
DJS22MEEC5014	Gas Dynamics & Jet Propulsion
DJS22MEEL5014	Gas Dynamics & Jet Propulsion Laboratory
DJS22MEEC5015	Advanced Control Systems
DJS22MEEL5015	Advanced Control Systems Laboratory
DJS22MEEC5016	Data Analytics
DJS22MEEL5016	Data Analytics Laboratory
DJS22MEEC5017	Incubation, Entrepreneurship and Start-up
DJS22MEEL5017	Incubation, Entrepreneurship and Start-up Laboratory
DJS22MEEC5018	Design Validation through Prototyping
DJS22MEEL5018	Design Validation through Prototyping Laboratory



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Proposed Scheme for Third Year of B. Tech. Program in Mechanical Engineering: Semester VI (Autonomous)
(Academic Year 2024-2025)

Sr. No.	Course Code	Courses	Teaching Scheme (hrs.)				Continuous Assessment (A) (marks)			Semester End Assessment (B) (Marks)					(A+B)	Total Credits	
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th / Cb	O	P	O & P	Total SEA (B)			
1	DJS22MEC601	Design of Machine Elements-I	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL601	Design of Machine Elements-I Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
2	DJS22MEC602	Mechatronics	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL602	Mechatronics Laboratory	--	2	--	1	--	25	25	--	25	--	--	25	50	1	
3	DJS22MEC603	Finite Element Analysis	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL603	Finite Element Analysis Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
4	DJS22MEC604	Refrigeration & Air- conditioning	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL604	Refrigeration & Air- conditioning Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
5 @	DJS22MEEC601X	Department Elective - II	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22MEEL601X	Department Elective - II Laboratory	--	2	--	1	--	25	25	--	--	--	--	25	25	1	
6	DJS22MEL605	Business Communication and Ethics	--	4	--	2	--	50	50	--	--	--	--	50	50	2	2
7	DJS22MEL607	Database Management Systems Laboratory	--	2	--	1	--	25	25	--	--	--	25	25	50	1	1
8	DJS22MEL608	Innovative Product Development IV	--	2	--	1	--	25	25	--	--	--	25	25	50	1	1
Total			14	18	0	23	175	225	400	325	25	0	50	400	800	23	

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Course Code	Department Elective - II
DJS22MEEC6011	Production Tooling
DJS22MEEL6011	Production Tooling Laboratory
DJS22MEEC6012	Vehicle Performance & Testing
DJS22MEEL6012	Vehicle Performance & Testing Laboratory
DJS22MEEC6013	Mechanical Vibrations
DJS22MEEL6013	Mechanical Vibrations Laboratory
DJS22MEEC6014	Computational Fluid Dynamics
DJS22MEEL6014	Computational Fluid Dynamics Laboratory
DJS22MEEC6015	Industrial Robotics
DJS22MEEL6015	Industrial Robotics Laboratory
DJS22MEEC6016	Machine Learning
DJS22MEEL6016	Machine Learning Laboratory
DJS22MEEC6017	Fundamentals of Business Development
DJS22MEEL6017	Fundamentals of Business Development Laboratory
DJS22MEEC6018	Creative Engineering Design
DJS22MEEL6018	Creative Engineering Design Laboratory



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Proposed Scheme for Final Year of B. Tech. Program in Mechanical Engineering: Semester VII (Autonomous)
(Academic Year 2025-2026)

Sr. No.	Course Code	Courses	Teaching Scheme (hrs.)				Continuous Assessment (A) (marks)			Semester End Assessment (B) (Marks)					(A+B)	Total Credits	
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th / Cb	O	P	O & P	Total SEA (B)			
1	DJS22MEC701	Design of Machine Elements- II	3	--	--	3	35	--	35	65	--	--	--	65	100	3	4
	DJS22MEL701	Design of Machine Elements- II Laboratory	--	2	--	1	--	25	25	--	25	--		25	50	1	
2	DJS22MEC702	Production Planning and Control	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22MEL702	Production Planning and Control Laboratory	--	2	--	1	--	25	25	--	--	--	25	25	50	1	
3@	DJS22MEEC701X	Department Elective - III	2	--	--	2	35	--	35	65	--	--	--	65	100	2	3
	DJS22MEEL701X	Department Elective - III Laboratory	--	2	--	1	--	25	25	--	25	--	--	25	50	1	
4 @	DJS22MEEC702X	Department Elective - IV	3	--	--	3	35	--	35	65	--	--	--	65	100	3	3
5#	DJS22ILO701X	Institute Level Elective - I	3	--	--	3	35	--	35	65	--	--	--	65	100	3	3
6	DJS22MEP704	Project I	-	4	--	2	--	50	50	--	--	--	--	--	50	2	2
		Total	13	10	0	18	175	125	300	325	50	0	0	375	675		18

@Any 1 Department Level Elective from given list.

#Any 1 Institute Level Elective



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Course Code	Department Elective - III
DJS22MEEC7011	Artificial Intelligence for Mechanical Engineering
DJS22MEEL7011	Artificial Intelligence for Mechanical Engineering Laboratory
DJS22MEEC7012	Product Design & Development
DJS22MEEL7012	Product Design & Development Laboratory
DJS22MEEC7013	Design of Automotive Systems
DJS22MEEL7013	Design of Automotive Systems Laboratory
DJS22MEEC7014	Renewable Energy Systems
DJS22MEEL7014	Renewable Energy Systems Laboratory
DJS22MEEC7015	Bionics Engineering
DJS22MEEL7015	Bionics Engineering Laboratory
DJS22MEEC7016	Big Data Analytics
DJS22MEEL7016	Big Data Analytics laboratory
DJS22MEEC7017	Start-up Registration and Development
DJS22MEEL7017	Start-up Registration and Development laboratory
DJS22MEEC7018	Design Management
DJS22MEEL7018	Design Management laboratory

Course Code	Department Elective - IV
DJS22MEEC7021	Quality Engineering
DJS22MEEC7022	Automotive Materials and Manufacturing
DJS22MEEC7023	Process Equipment Design
DJS22MEEC7024	Flexible Manufacturing Systems
DJS22MEEC7025	Energy Audit and Management
DJS22MEEC7026	Start-up Sustainability
DJS22MEEC7027	Optimization Techniques



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Proposed Scheme for Final Year of B. Tech. Program in Mechanical Engineering: Semester VIII (Autonomous)
(Academic Year 2025-2026)

Sr. No.	Course Code	Courses	Teaching Scheme (hrs.)				Continuous Assessment (A) (marks)			Semester End Assessment (B) (Marks)					(A+B)	Total Credits	
			Th	P	T	Credits	Th	T/W	Total CA (A)	Th / Cb	O	P	O & P	Total SEA (B)			
1	DJS22MEC801	Industrial Engineering and Management	2	--	--	2	35	--	35	65	--	-	--	65	100	2	2
2 @	DJS22MEEC801X	Department Elective - IV	2	--	--	2	35	--	35	65	--	-	--	65	100	2	3
	DJS22MEEL801X	Department Elective - IV Laboratory	--	2	--	1	--	25	25	--	25	-	--	25	50	1	
3 @	DJS22MEEC802X	Department Elective - V	3	--	--	3	35	--	35	65	--	-	--	65	100	3	3
4#	DJS22ILO801X	Institute Level Elective - II	3	--	--	3	35	--	35	65	--	-	--	65	100	3	3
5	DJSMEP802	Project II	-	12	--	6	--	100	100	--	--	-	100	100	200	6	6
			10	14	0	17	140	125	265	260	25	0	100	385	650	17	

@Any 1 Department Level Elective from each set.

#Any 1 Institute Level Elective from given list.



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Course Code	Department Elective - IV
DJS22MEEC8011	Machine Learning for Manufacturing
DJS22MEEL8011	Machine Learning for Manufacturing Laboratory
DJS22MEEC8012	Design of Mechanical Systems
DJS22MEEL8012	Design of Mechanical Systems Laboratory
DJS22MEEC8013	Motorsports Engineering
DJS22MEEL8013	Motorsports Engineering Laboratory
DJS22MEEC8014	Piping Engineering
DJS22MEEL8014	Piping Engineering Laboratory
DJS22MEEC8015	Automation and IoT
DJS22MEEL8015	Automation and IoT Laboratory
DJS22MEEC8016	Business Analytics
DJS22MEEL8016	Business Analytics Laboratory
DJS22MEEC8017	Start-up Sustainability and Scalability
DJS22MEEL8017	Start-up Sustainability and Scalability Laboratory
DJS22MEEC8018	Design Entrepreneurship
DJS22MEEL8018	Design Entrepreneurship Laboratory

Course Code	Department Elective - V
DJS22MEEC8021	Sustainable manufacturing
DJS22MEEC8022	Manufacturing Management
DJS22MEEC8023	Advance Quantitative Techniques
DJS22MEEC8024	Engineering Economics & cost Accounting
DJS22MEEC8025	Design for Excellence
DJS22MEEC8026	Fracture Mechanics
DJS22MEEC8027	Power Plant Engineering
DJS22MEEC8028	Air Handling Unit
DJS22MEEC8029	Digital Twin / FMS