

# M. Tech. (Mechanical Engineering)

(Specialization with- Machine Design, Renewable Energy, and Manufacturing Technology)

Admitted Batch 2024 onwards

## Semester I

SN	Course Code	Course Name	L- T- P (Hours)	Credits
1	ME501	Core – I (Applied mathematics and computational techniques)	3-0-0	3
2	ME502	Core –II (Properties and selection of engineering materials)	3-0-0	3
3		Elective –I	3-0-0	3
4		Elective – II	3-0-0	3
5	ME505	Research Methodology and IPR	2-0-0	2
6	ME601	Core Lab – I (Applied mathematics and computational techniques lab)	0-0-2	1
7		Elective Lab – I	0-0-2	1
8		Elective Lab – II	0-0-2	1
		<b>TOTAL</b>	20	17

## Semester II

SN	Course Code	Course Name	L –T- P (Hours)	Credits
1	ME503	Core – III (Experimental methods)	3-0-0	3
2	ME504	Core –IV (Optimisation and meta heuristic approach)	3-0-0	3
3		Elective –III (Based on Specialization)	3-0-0	3
4		Elective – IV (Based on Specialization)	3-0-0	3
5		Elective – V (Based on Specialization)	3-0-0	3
6	ME602	Core Lab – II (Experimental methods lab)	0-0-2	1
7		Elective Lab – III	0-0-2	1
8	ME603	Minor Project (based on Specialization)	0-0-6	3
9		Audit Course – I	2-0-0	Qualifying
		<b>TOTAL</b>	27	20

## M. Tech. (Mechanical Engineering)

### Semester III

SN	Course Code	Course Name	L- T -P (Hours)	Credits
1		Open Elective	3-0-0	3
2		Elective – V (Based on Specialization)	3-0-0	3
3	ME604	Seminar and Term Paper	0-0-4	2
4	ME605	Project Based Learning	0-0-8	4
5	ME606	Dissertation - I	0-0-8	4
6		Audit course –II	2-0-0	Qualifying
		<b>TOTAL</b>	28	16

### Semester IV

SN	Course Code	Course Name	L -T -P (Hours)	Credits
1	ME607	Dissertation - II/Industrial Project	0-0-30	15
		<b>Total</b>	30	15

**Total Credits = 68**

### List of Electives

- ME701 Analysis and Design of Machine Tools
- ME702 Metal Machining
- ME801 Metal Machining Lab
- ME703 Casting and Welding
- ME802 Casting and Welding Lab
- ME704 Mechanics of Metal Forming
- ME803 Mechanics of Metal Forming Lab
- ME705 Unconventional Manufacturing Processes
- ME706 Additive Manufacturing Process
- ME804 Additive Manufacturing Process Lab
- ME707 Computer Integrated Manufacturing
- ME805 Computer Integrated Manufacturing Lab
- ME708 Advanced Materials Technology
- ME709 Robotics and Automation
- ME710 Advanced Metrology and Computer Aided Inspection
- ME711 Industrial Inspection and Quality Control
- ME712 Reliability and Maintenance Engineering
- ME713 Operations and Supply Chain Management
- ME714 Advanced Solid Mechanics
- ME715 Advanced Dynamics

## **M. Tech. (Mechanical Engineering)**

ME806	Advanced Solid Mechanics Lab
ME807	Advanced Dynamics Lab
ME716	Fracture Mechanics
ME717	Engineering Failure Analysis and Prevention
ME718	Finite Element Method
ME808	Finite Element Method Lab
ME719	Mechanics of Composite Materials
ME720	Machine Design and Optimisation
ME721	Theory of Plates and Shells
ME722	Advanced Thermodynamics
ME723	Heat Transfer in Renewable Energy Systems
ME724	Viscous Flow Theory
ME725	Wind Energy Engineering
ME726	Hydro Energy and Fluid Mechanics
ME727	Solar Energy Engineering
ME728	Renewable Energy Storage and Conversion
ME729	Computational Fluid Dynamics for Renewable Energy
ME730	Applied Computational Thermo-fluid dynamics