

M.Tech. in MECHANICAL ENGINEERING
With specialization in Computational Engineering for Mechanical
Systems
2026 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C
1	ME5401	Scientific Computing using Python	3	0	0	3	6	12
2	ME5041	Data Science for Mechanical Engineers	3	1	0	0	6	10
3	ME5204	Finite Element Analysis	3	0	0	0	6	9
4		Professional Elective 1	3	0	0	0	6	9
5		Professional Elective 2	3	0	0	0	6	9
6	ME5485	Geometric Modelling & Scientific Computing Lab	0	0	0	0	3	3
7	GN5003	Personal and Professional Growth	1	0	0	0	2	0
	GN1001	Posh Training I	3	0	0	0	0	0
		Total Credits :						52

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C
1	ME54Xx	Finite Volume Method in CFD	3	0	0	0	6	9
2	ME54xx	Data structures and algorithms	3	0	0	0	6	9
3	ME54xx	Systems-based modeling and design	3	0	0	0	6	9
4		Professional Elective 3	3	0	0	0	6	9
5		Professional Elective 4	3	0	0	0	6	9
7	ME548x	Mechanical Systems Simulation Lab	0	0	0	3	0	3
	ME5020	Professional Communication Skills	1	1	0	0	1	3
		Total Credits :						55

SUMMER

S.No	Course No	Course Name	L	T	E	P	O	C
1	ME6496	Project Phase I	0	0	0	0	20	20
		Total Credits						20

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C
1	ID5130	Parallel scientific computing	3	0	0	0	6	9
2	ME6497	Project Phase II	0	0	0	0	26	26
		Total Credits :						35

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C
1	ME6498	Project Phase III	0	0	0	0	40	40
		Total Credits :						40

Semester	I	II	Summer	III	IV	Total
Credits	52	55	20	35	40	202

List of Electives

Semester 1

S No	Course No	Course Name	L	T	E	P	O	C
1	ME7223	Optimization methods for mechanical design	3	0	0	0	6	9
2	ME5203	Advanced Mechanics of Solids	3	0	0	0	6	9
3	ME5205	Theory of Vibrations	3	0	0	0	6	9
4	ME5103	Incompressible fluid flow	3	0	0	0	6	9
5	ME5101	Advanced heat transfer	3	0	0	0	6	9
6	ME5307	Modelling and Simulation in Manufacturing	3	0	0	0	6	9

Semester 2

S No	Course No	Course Name	L	T	E	P	O	C
1	ME7230	Applied finite element analysis	3	0	0	0	6	9
2	ME7023	Foundation of computational materials modeling	3	0	0	0	6	9
3	ME6242	Advanced Methods in Vibration**	3	0	0	0	6	9
4	AS5401	Data-driven modeling of complex aerospace systems and fluid flows	3	0	0	0	6	9
5	ME6355	Topology optimization	3	0	0	0	6	9

Semester Agnostic

S No	Course No	Course Name	L	T	E	P	O	C
1	MA6270	Numerical solutions of partial differential equations	3	0	0	0	6	9
2	ME5303	CAD in manufacturing	3	0	0	0	6	9
3	ME6355	Topology optimization	3	0	0	0	6	9
4	MA5540	Probability and Statistics	3	0	0	0	6	9
5	MA5710	Mathematical modeling in industry	3	0	0	0	6	9
6	MA5895	Numerical optimization	3	0	0	0	6	9