

B.Tech. - Mechanical Engineering

4 year B. Tech. Degree Course Structure w.e.f. 2023-24 Batch

FIRST SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.	MA102	MATHS	Engineering Mathematics - 1	3	1	-	4	4
2.	PH101	PHY	Engineering Physics-1	3	1	-	4	4
3.	HS101	HSS	English	2	1	-	3	3
4.	CS101	CSE	Computer Programming	3	1	-	4	4
5.	PH201	PHY	Engineering Physics Lab-1	-	-	2	2	1
6.	CS201	CSE	Computer Programming Lab	-	-	4	4	2
7.	ME201	ME	Workshop Practices	-	-	3	3	1.5
8.		HSS	Value Added Course-1	2	-	-	2	-
			TOTAL				24	19.5

SECOND SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HS104	HSS	Life Skills and Effective Communication	1	1	-	2	2
2.	MA103	Maths	Engineering Mathematics-2	3	1	-	4	4
3.	CH101	Chemistry	Engineering Chemistry	3	1	-	4	4
4.	EC102	ECE	Electrical Circuit Analysis	3	1	-	4	4
5.	ME101	ME	Engineering Mechanics	3	1	-	4	4
6.	CH201	Chemistry	Engineering Chemistry Lab	-	-	2	2	1
7.	EC202	ECE	Electrical Circuit Analysis Lab	-	-	2	2	1
8.	ME202	ME	Engineering Mechanics Lab	-	-	2	2	1
9.	ME203	ME	Engineering Drawing and Design Lab			3	3	1.5
			TOTAL				27	22.5

*Students will undergo Summer Training during vacation after IInd Semester (Optional).

THIRD SEMESTER –B

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.	ME102	ME	Basic Thermodynamics	3	1	-	4	4
2.	ME103	ME	Strength of Materials	3	1	-	4	4
3.	ME104	ME	Manufacturing Technology-1	3	1	-	4	4
4.	ME105	ME	Theory of Machines	3	1	-	4	4
5.	HS102	HSS	Managerial Economics	2	1	-	3	3
6.	ME204	ME	Basic Thermodynamics Lab	-	-	2	2	1
7.	ME205	ME	Strength of Materials Lab	-	-	2	2	1
8.	ME206	ME	Manufacturing Technology Lab-1	-	-	2	2	1
9.	ME207	ME	Theory of Machines Lab	-	-	2	2	1
10.	ME001	ME	Introduction to Materials and Metallurgy	3	0	0	3	0 (Audit)
11.		CSE	Programming in Python	0	0	2	2	0 (Audit)
12.		HSS	Value Added Course-2	2	-	-	2	-
			TOTAL				34	23

FOURTH SEMESTER – B

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.		HSS	HSS Elective - 1	2	1	-	3	3
2.	MA105	Maths	Numerical Methods	3	1	-	4	4
3.	ME106	ME	Fluid Mechanics	3	1	-	4	4
4.	ME107	ME	Manufacturing Technology-2	3	1	-	4	4
5.	GE101	GE	Environmental Science	2	-	-	2	0
6.	ME208	ME	Fluid Mechanics Lab	-	-	2	2	1
7.	ME209	ME	Manufacturing Technology Lab-2	-	-	2	2	1
			TOTAL				21	19

***Students will undergo Summer Training during vacation after IVth Semester (compulsory).**

FIFTH SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.		HSS	HSS Elective-2	3		-	3	3
2.	ME108	ME	Applied Thermodynamics	3		-	3	3
3.	ME109	MEC	Computer Aided Design (CAD)/ Computer Aided Manufacturing (CAM)	3	1	-	4	4
4.	ME210	ME	Applied Thermodynamics Lab	-	-	2	2	1
5.	ME211	MEC	Computer Aided Design (CAD)/ Computer Aided Manufacturing (CAM) Lab	-	-	2	2	1
6.	ME212	ME	Machine Drawing and Drafting Lab	-	-	2	2	1
7.	ME213	ME	Minor Project – 1			4	4	2
8.			Science Elective	3	-	-	3	3
9.		ME	Discipline Elective -1	3	-	-	3	3
10	ME002		Verbal and non-verbal reasoning-1	3	-	-	3	Qualifying
11.		HSS	Value Added Course-3	2	-	-	2	Qualifying
			TOTAL				29	21

SIXTH SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.	ME110	ME	Design of Machine Elements	3		-	3	3
2.	ME111	ME	Industrial Engineering	3			3	3
3.	ME112	ME	IC Engine and Electrical Power Plants for Automobiles	3	1	-	4	4
4.	ME214	ME	Design of Machine Elements Lab	-	-	2	2	1
5.	ME215	ME	Internal Combustion Engine Lab	-	-	2	2	1
6.	ME216	ME	Minor Project-2	-	-	6	6	3
7.		ME	Discipline Elective – 2	3	-	-	3	3
8.		ME	Discipline Elective - 3	3	-	-	3	3

9.	ME003		Verbal and non-verbal reasoning-2	3	-	-	3	Qualifying
10.		HSS	HSS Elective - 3	2	1		3	3
			TOTAL				32	24

Note: Students will undergo 6 weeks Industrial Training during Summer Vacation after 6th Semester (Compulsory).

SEVENTH SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.		ME	Discipline Elective – 4	3			3	3
2.		ME	Discipline Elective – 5	3			3	3
3.		ME	Discipline Elective - 6	3	-	-	3	3
4.			Open Elective - 1	3		-	3	3
5.	ME217	ME	Major Project Part-1	-	-	8	8	4
6.	ME004	ME	Summer Training Viva	-	-	-	-	Qualifying
			TOTAL				20	16

EIGHTH SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.		ME	Discipline Elective – 7	3			3	3
2.		ME	Discipline Elective - 8	3			3	3
3.		Engg Branch	Open Elective -2	3		-	3	3
4.	ME218	ME	Major Project Part-2	-	-	16	16	8
			TOTAL				25	17

Total Credits for B. Tech. –162

Type of Elective	Subject code	Subject name
Science Elective	ME301	Material Science
	ME302	Metal Forming Science
Discipline Elective (DE)- 1	ME303	Advanced Manufacturing Processes
	ME304	Advanced Metal Casting and NDT
	ME305	Maintenance Engineering
	ME306	Engineering Data Analytics
Discipline Elective (DE)- 2	ME307	Advanced Mechanics of Solids
	ME308	Measurement and Metrology
	ME309	Turbomachinery
	ME310	Computational Fluid Dynamics
Discipline Elective (DE)- 3	ME311	Operations Research
	ME312	Laser Material Processing
	ME313	Power Plant Engineering
Discipline Elective (DE)- 4	ME314	Finite Element Technique
	ME315	Production Planning and Control
	ME316	Additive Manufacturing
Discipline Elective (DE)- 5	ME317	Statistical Quality Control
	ME318	Gas Turbines and Jet Propulsion
	ME319	Introduction to Design of Experiments
	ME320	Production and Operation Management
	ME321	Fracture Mechanics
	ME322	Smart Manufacturing
Discipline Elective (DE)- 6	ME323	Composite Materials
	ME324	Vibration and Noise Control
	ME325	Automobile Engineering
	ME326	Biofluid Mechanics
	ME327	Design of Heat Exchangers
	ME328	Flexible Manufacturing Systems
	ME329	Mechatronics and Automation

Discipline Elective (DE)- 7	ME330	Optimization Methods in Engineering
	ME331	Supply Chain Management
	ME332	Experimental Stress Analysis
Discipline Elective (DE)- 8	ME333	Energy Management and Audit
	ME334	Processing of Non-Metals
	ME335	Plant Layout and Material Handling
	ME336	Unconventional Energy Resources
	ME337	Machine Tool Design
	ME338	Reliability Engineering
	ME339	Microrobotics
Open Electives		
Open Elective (OE)- 1	ME340	Smart Materials
	ME341	Desalination Techniques
	ME342	Agile and Lean Manufacturing
	ME343	Rapid Cooling Systems
	ME344	Micro Electro Mechanical Systems (MEMS)
Open Elective (OE)- 2	ME345	Energy Management Principles
	ME346	Six Sigma
	ME347	Fault Diagnosis using Signal Processing
	ME348	Applications of Composite Materials
	ME349	Engineering System Modeling and Simulation
	ME350	3D Printing

HSS Electives:

1. Concept of Financial Management: HS302
2. Knowledge Management: HS303
3. Concept of Digital Marketing: HS304
4. Concept of Marketing Management: HS306

Value Added Course

1. Human Values and Professional Ethics: HS001

2. Professional communication Practice: HS002
3. Concept of Project Management: HS003
4. Indian Constitution & Traditional Knowledge: HS004