JAYPEE UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Department of Mechanical Engineering

4 year B. Tech. Degree Course Structure for 2024-25 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.	HS001	HSS	Value Added Course (Human Values and Professional Ethics)	2	-	-	2	2 (Audit Qualifying)
			TOTAL				26	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
10.			Value Added Course	2	-	-	2	2 (Audit)
			TOTAL				29	22.5

***Students will undergo Summer Training of 4 weeks during vacation after IInd Semester (Optional).**

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THIRD SEMESTER

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	2	0	0	2	2 (Audit)
11.	CS001	CSE	Python Programming	0	0	2	2	2 (Audit)
12.		HSS	Value Added Course	2	-	-	2	2 (Audit)
13.		ME	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit, Optional)
			TOTAL				33	23

FOURTH SEMESTER

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	2 (Audit Qualifying)
6.	ME208	ME	Fluid Mechanics Lab	-	-	2	2	1
7.	ME209	ME	Manufacturing Technology Lab-2	-	-	2	2	1
			TOTAL				21	17

***Students will undergo Summer Training of 4 weeks during vacation after IVth Semester (compulsory).**

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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		ME	Value Added Course	2	-	-	2	2 (Audit)
11.		ME	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit, Qualifying)
			TOTAL				28	21

SIXTH SEMESTER

Sr. No.	Course Code	Department	Title	Contact Hours				Credits
				L	T	P	Total	
1.		HSS	HSS Elective - 3	2	1		3	3
2.	ME110	ME	Design of Machine Elements	3		-	3	3
3.	ME111	ME	Industrial Engineering	3			3	3
4.	ME112	ME	IC Engine and Electrical Power Plants for Automobiles	3	1	-	4	4
5.	ME214	ME	Design of Machine Elements Lab	-	-	2	2	1
6.	ME215	ME	Internal Combustion Engine Lab	-	-	2	2	1
7.	ME216	ME	Minor Project-2	-	-	6	6	3
8.		ME	Discipline Elective – 2	3	-	-	3	3
9.		ME	Discipline Elective - 3	3	-	-	3	3
10.	HS004	HSS	Value Added Course (Indian Constitution and Traditional Knowledge)	2	0	0	2	2 (Audit) Qualifying
			TOTAL				30	24

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

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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.		ME	Internship/Summer Training (6 weeks - 240-270 hours)	-	-	-	-	6 (Audit 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. –160 (Value Added Courses/Audit courses will not be counted for CGPA calculations.

Discipline Electives	
ME301	Material Science
ME302	Metal Forming Science
ME303	Advanced Manufacturing Processes
ME304	Advanced Metal Casting and NDT
ME305	Maintenance Engineering
ME306	Engineering Data Analytics
ME307	Advanced Mechanics of Solids
ME308	Measurement and Metrology
ME309	Turbomachinery
ME310	Computational Fluid Dynamics
ME311	Operations Research
ME312	Laser Material Processing

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ME313	Power Plant Engineering
ME314	Finite Element Technique
ME315	Production Planning and Control
ME316	Additive Manufacturing
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
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
ME330	Optimization Methods in Engineering
ME331	Supply Chain Management
ME332	Experimental Stress Analysis
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
ME351	Advanced Engineering Materials
ME352	Micro-Manufacturing
ME353	CAD for Additive Manufacturing
ME354	Industrial Applications of Additive Manufacturing
ME355	Hybrid Energy Applications
ME367	AI in Mechanical Engineering
Open Electives	
ME340	Smart Materials
ME341	Desalination Techniques
ME342	Agile and Lean Manufacturing

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ME343	Rapid Cooling Systems
ME344	Micro Electro Mechanical Systems (MEMS)
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. Logical and Quantitative Techniques: HS305
5. 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
5. Verbal and non-verbal reasoning-1: ME002
6. Introduction to Engineering Simulations : ME005
7. Introduction to Automation : ME006
8. Introduction to Mechatronics: ME007
9. Introduction to 3d Printing : ME008