B.Tech. - Mechanical Engineering

4 Year Degree Course Structure (From 2018 - 2022 batches)

FIRST SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	Maths	18B11MA111	Mathematics-1	3	1	-	4	4
2.	Physics	18B11PH111	Physics-1	3	1	-	4	4
3.	CSE	18B11CI111	Software Development Fundamentals	3	1	-	4	4
4.	HSS	18B11HS111	English	2	1	-	3	3
5.	Physics	18B17PH171	Physics Lab-1	-	-	2	2	1
6.	CSE	18B17CI171	Software Development Lab	-	-	4	4	2
7.	MEC	18B17ME171	Workshop			3	3	1.5
			TOTAL				24	19.5

SECOND SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	Maths	18B11MA201	Mathematics-2	3	1	-	4	4
2.	Chemistry	18B11CL212	Chemistry	3	1	-	4	4
3.	ECE	18B11EC212	Electrical Circuit Analysis	3	1	-	4	4
4.	MEC	18B11ME211	Engineering Mechanics	3	1	-	4	4
5.	Chemistry	18B17CL272	Chemistry Lab	-	-	2	2	1
6.	ECE	18B17EC272	Electrical Circuit Analysis Lab	-	-	2	2	1
7.	MEC	18B17ME271	Engineering Mechanics Lab	-	-	2	2	1
8.	MEC	18B17ME272	Engineering Drawing & Design Lab			3	3	1.5
			TOTAL				25	20.5

THIRD SEMESTER –B

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	MEC	18B11ME311	Basic Thermodynamics	3	1	-	4	4
2.	MEC	18B11ME312	Strength of Materials	3	1	-	4	4
3.	MEC	18B11ME313	Manufacturing Technology-1	3	1	-	4	4
4.	MEC	18B17ME371	Basic Thermodynamics Lab	-	-	2	2	1
5.	MEC	18B17ME372	Strength of Materials Lab	-	-	2	2	1
6.	MEC	18B17ME373	Manufacturing Technology Lab-1	-	-	2	2	1
7.	MEC	18B11ME314	Theory of Machines	3	1	-	4	4
8.	MEC	18B17ME374	Theory of Machines Lab	-	-	2	2	1
9.	HSS	18B11HS311	Managerial Economics	2	1	-	3	3
10.	MEC	18B19ME399	Introduction to Materials and Metallurgy	3	0	0	3	0 (Audit)
11.	CSE	21B19CI399	Programming in Python	0	0	2	2	0 (Audit)
			TOTAL				27	23

FOURTH SEMESTER – B

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HSS		HSS Elective - 1	2	1	-	3	3
2.	Maths	18B11MA411	Numerical Methods	3	1	-	4	4
3.	MEC	18B11ME411	Fluid Mechanics	3	1	-	4	4
4.	MEC	18B11ME412	Manufacturing Technology-2	3	1	-	4	4
5.	MEC	18B19GE399	Environmental Science	3	-	-	3	2
6.	MEC	18B17ME471	Fluid Mechanics Lab	-	-	2	2	1
7.	MEC	18B17ME472	Manufacturing Technology Lab-2	-	-	2	2	1
8.	HSS	18B11HS411	Life Skills	-	-	-	-	2
			TOTAL				22	21

FIFTH SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	HSS		HSS Elective-2	3		-	3	3
2.	MEC	18B11ME511	Applied Thermodynamics	3		-	3	3
3.	MEC		Discipline Elective -1	3	-	-	3	3
4.	MEC		Science Elective	3	-	-	3	3
5.	MEC	18B19ME591	Minor Project – 1			4	4	2
6.	MEC	18B17ME571	Applied Thermodynamics Lab	-	-	2	2	1
7.	MEC	18B17ME572	Machine Drawing and Drafting Lab	-	-	2	2	1
8.	MEC	18B11ME513	Computer Aided Design (CAD)/ Computer Aided Manufacturing (CAM)	3	1	-	4	4
9	MEC	18B17ME573	Computer Aided Design (CAD)/ Computer Aided Manufacturing (CAM) Lab	-	-	2	2	1
10			Value Added Course-I	3	-	-	3	Qualifying
			TOTAL				29	21

SIXTH SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	MEC	18B11ME611	Design of Machine Elements	3		-	3	3
2.	MEC		Discipline Elective – 2	3	-	-	3	3
3.	MEC		Discipline Elective - 3	3	-	-	3	3
4.	MEC	18B11ME612	Industrial Engineering	3			3	3
5.			Value Added Course-II	3	-	-	3	Qualifying
6.	MEC	18B17ME671	Design of Machine Elements Lab	-	-	2	2	1
7.	MEC	18B19ME691	Minor Project-2	-	-	6	6	3
8.	MEC	22B11ME611	IC Engine and Electrical Power Plants for Automobiles	3	1	-	4	4
9.	MEC	18B17ME673	Internal Combustion Engine	-	-	2	2	1

			Lab					
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.

SEVENTH SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	MEC		Discipline Elective – 4	3			3	3
2.	MEC		Discipline Elective – 5	3			3	3
3.	MEC		Discipline Elective - 6	3	-	-	3	3
4.			Open Elective - 1	3		-	3	3
5.	MEC	18B19ME791	Major Project Part-1	-	-	8	8	4
6.	MEC	18B19ME792	Summer Training Viva	-	-	-	-	Qualifying
			TOTAL				20	16

EIGHTH SEMESTER

Sr. No.	Department	Course No.	Title	Contact Hours				Credits
				L	T	P	Total	
1.	MEC		Discipline Elective – 7	3			3	3
2.	MEC		Discipline Elective - 8	3			3	3
3.	Engg Branch		Open Elective -2	3		-	3	3
4.	MEC	18B19ME891	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	18B14ME544	Material Science
	18B14ME545	Metal Forming Science
Discipline Elective (DE)- 1	18B14ME541	Advanced Manufacturing Processes
	18B14ME542	Advanced Metal Casting and NDT
	18B14ME543	Maintenance Engineering
	20B14ME544	Engineering Data Analytics
Discipline Elective (DE)- 2	18B14ME641	Advanced Mechanics of Solids
	18B14ME642	Measurement and Metrology
	18B14ME643	Turbomachinery
	18B14ME744	Computational Fluid Dynamics
Discipline Elective (DE)- 3	18B14ME644	Operations Research
	18B14ME645	Laser Material Processing
	18B14ME646	Power Plant Engineering
Discipline Elective (DE)- 4	18B14ME741	Finite Element Technique
	18B14ME742	Production Planning and Control
	18B14ME743	Additive Manufacturing
Discipline Elective (DE)- 5	18B14ME745	Statistical Quality Control
	18B14ME746	Gas Turbines and Jet Propulsion
	22B14ME745	Introduction to Design of Experiments
	18B14ME748	Production and Operation Management
	22B14ME746	Fracture Mechanics
Discipline Elective (DE)- 6	18B14ME749	Composite Materials
	18B14ME750	Vibration and Noise Control
	18B14ME751	Automobile Engineering
	22B14ME747	Biofluid Mechanics
Discipline Elective (DE)- 7	18B14ME841	Design of Heat Exchangers
	18B14ME842	Flexible Manufacturing Systems
	18B14ME843	Mechatronics and Automation
	18B14ME844	Optimization Methods in Engineering
	18B14ME845	Supply Chain Management
	22B14ME841	Experimental Stress Analysis

Discipline Elective (DE)- 8	18B14ME846	Energy Management and Audit
	18B14ME847	Processing of Non-Metals
	18B14ME848	Plant Layout and Material Handling
	18B14ME849	Unconventional Energy Resources
	18B14ME850	Machine Tool Design
	18B14ME851	Reliability Engineering
	22B14ME842	Microrobotics
Open Elective (OE)- 1	18B14ME752	Smart Materials
	18B14ME753	Desalination Techniques
	18B14ME754	Agile and Lean Manufacturing
	18B14ME755	Rapid Cooling Systems
	18B14ME756	Micro Electro Mechanical Systems (MEMS)
Open Elective (OE)- 2	18B14ME852	Energy Management Principles
	18B14ME853	Six Sigma
	18B14ME854	Fault Diagnosis using Signal Processing
	18B14ME855	Applications of Composite Materials
	18B14ME856	Engineering System Modeling and Simulation

Value added courses

1. Verbal and non-verbal reasoning-1(18B19ME592)
2. Verbal and non-verbal reasoning-2 (18B19ME693)