Bachelor of Technology
MECHANICAL ENGINEERING
<u>Course Structure</u>

[Effective from the Session: 2023-24]

			Semester I		
	S. No.	Course Code	Course Title	Credits	Course Type
First Year	1.	EPHY101	Engineering Physics	3+0	CORE
	2.	EMAT 101	Engineering Mathematics-I	3+0	CORE
	3.	CSE101	Programming for Problem Solving	3+0	CORE
	4.	ECE102	Basic Electrical Engineering	3+0	CORE
	5.	ME103	Fundamental of Mechanical Engineering and Mechatronics	3+0	CORE
	6.	EPHY151	Engineering Physics Lab	0+1	CORE
	7.	CSE151	Programming for Problem Solving Lab	0+1	CORE
	8.	ECE152	Basic Electrical Engineering Lab	0+1	CORE
	9.	ME102	Workshop Practices	0+2	CORE
	10.		Induction Program		CORE
	11.		Minor Elective-1	02	ELECTIVE
	12.		Minor Co-curricular-1	02 (NC)	ELECTIVE
			Total credits	22	
	The students have to choose one course from each (Minor Elective, and Minor Co-Curricular)				

			Semester II		
	S. No.	Course Code	Course Title	Credits	Course Type
First Year	1.	ECHE101	Engineering Chemistry	3+0	CORE
	2.	EMAT102	Engineering Mathematics-II	3+0	CORE
	3.	HSM101	Professional Communication	3+0	CORE
	4.	ECE101	Basic Electronics Engineering	3+0	CORE
	5.	ECHE151	Engineering Chemistry Lab	0+1	CORE
	6.	HSM151	Professional Communication Lab	0+1	CORE
	7.	ECE151	Basic Electronics Engineering Lab	0+1	CORE
	8.	ME101	Engineering Graphics & Design	0+2	CORE
	9.		Minor Elective-2	02	ELECTIVE
	10.		Minor Co-curricular-2	02 (NC)	ELECTIVE
			Total credits	19	
	The students have to choose one course from each (Minor Elective, and Minor Co-Curricular)				

Semester III				
S. No.	Course Code	Course Title	Credits	Course Type
1.	ME204	Fluid Mechanics	4+0	CORE
2.	ME254	Fluid Mechanics Lab	0+1	CORE
3.	HSM201	Managerial Economics	3+0	CORE
4.	ME201	Manufacturing Science	3+0	CORE
5.	ME202	Material science	3+0	CORE
6.	ME252	Material science Lab	0+1	CORE
7.	ME203	Engineering mechanics	3+0	CORE
8.	ME253	Engineering mechanics Lab	0+1	CORE
9.	ENV201	Environmental and Ecology	2+0(NC)	CORE
10.		Minor Elective-3	2+0	ELECTIVE
11.		Minor Co-curricular-3	0+2(NC)	ELECTIVE
		Total credits	21	
The students have to choose one course from each (Minor Elective, and Minor Co-Curricular)				

Second Year

Semester IV				
S. No.	Course Code	Course Title	Credits	Course Type
1.	ME205	Thermodynamics	4+0	CORE
2.	ME255	Thermodynamics Lab	0+1	CORE
3.	ME206	Metal machining and machine tools	4+0	CORE
4.	ME207	Strength of material	4+0	CORE
5.	ME208	Measurement and Metrology	3+0	CORE
6.	ME258	Measurement and Metrology Lab	0+1	CORE
7.	ME259	Machine drawing Lab	0+2	CORE
8.	EMAT201	Engineering Mathematics-III	3+0	CORE
9.		Minor Elective-4	02	ELECTIVE
10.		Minor Co-curricular-4	02(NC)	ELECTIVE
		Total credits	24	
The students have to choose one course from each (Minor Elective, and Minor Co-Curricular)				

Second Year

		Semester V		
S. No.	Course Code	Course Title	Credits	Course Type
1.	ME301	Heat and mass transfer	4+0	CORE
2.	ME351	Heat and mass transfer Lab	0+1	CORE
3.	ME302	Design of machine elements	4+0	CORE
4.	ME352	Design of machine elements Lab	0+1	CORE
5.	ME303	Fluid machinery	4+0	CORE
6.	ME353	Fluid machinery Lab	0+1	CORE
7.	ME304	Kinematics of machine	3+0	CORE
8.	HSM301	Organisational Behaviour	3+0	CORE
9.	ME305	Seminar-I	0+2	CORE
	Total credit		23	

Third Year

		Semester VI		
S.No.	Course Code	Course Title	Credits	Course Type
1.	ME306	Machine Design	4+0	CORE
2.	ME356	Machine Design Lab	0+1	CORE
3.	ME307	Manufacturing Automation	4+0	CORE
4.	ME357	Manufacturing Technology Lab	0+1	CORE
5.	ME308	Robotics and control	4+0	CORE
6.	ME309	Production and Operations Management	3+0	CORE
7.	MEP310	Engineering Project (Literature Review)	0+2	CORE
8.	ECOE01	Introduction to Microcontrollers and Embedded Systems	3+0	ELECTIVE
	ITOE01	Introduction to OOP with C++		
	CSEOE01	Web Technology		
	Total credits		22	
Only one Course is to be selected from the list of Elective Courses				

Third Year

		Semester VII		
	S. No.	**Course Code**	**Course Title**	**Credits**	**Course Type**
Fourth Year	1.	MDE403	IC Engine	3+0	ELECTIVE
	2.	MDE404	Computer Aided Design		
	3.	MDE405	Mechatronics (Online mode from SWAYAM)		
	4.	MDE406	Mechanical vibrations (Online mode from SWAYAM)		
	5.	MDE417	Introduction to Composites (Online mode from SWAYAM)		
	6.	MDE407	Power Plant Engineering	3+0	ELECTIVE
	7.	MDE408	Tribology of Manufacturing Process		
	8.	MDE409	Theory of Elasticity		
	9.	MDE410	Refrigeration and air conditioning (Online mode from SWAYAM)		
	10.	MDE411	Fundamentals Of Additive Manufacturing Technologies (Online mode from SWAYAM)		
	11.	MDE418	Metal Additive Manufacturing (Online mode from SWAYAM)		
	12.	ECOE02	Introduction To MEMs	3+0	ELECTIVE
		ITOE02	Introduction to Virtualization and Cloud Computing		
		CSEOE02	Web Application Development using Python		
	13.	MEP401	Minor Project	0+5	CORE
	14.	HSM401	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	3+0	CORE
	15.	MEI401	Industrial Training Seminar-II	0+2	CORE
			Total credits	**19**	
			Only one Course is to be selected from the list of Elective Courses		

		Semester VIII			
	S.No.	Course Code	Course Title	Credits	Course Type
Fourth Year	1.	MDE412	Finite element methods	3+0	ELECTIVE
	2.	MDE413	Optimization Techniques		
	3.	MDE414	Agriculture Engineering		
	4.	MDE415	Biomechanics Of Joints and Orthopaedic Implants		
	5.	MDE416	Computational Fluid Dynamics		
	6.	ECOE03	Digital VLSI Design	3+0	ELECTIVE
	7.	ITOE03	Cyber Law and Ethics		
	8.	CSEOE03	Front End Technologies		
	9.	MEP402	Major Project	0+10	CORE
			Total credits	16	
	Only one course to be selected from the list of Elective Courses				

Credit Distribution

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credit	22	19	21	24	23	22	19	16	166