

Part II: Course Structure and Semester wise Credit Distribution

First Semester (First Year)

Mandatory Induction Program- 3 Weeks Duration

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-CH101	Chemistry	3	0	0	3
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU101	Communication Skill (JeevanKaushal-I)	2	0	0	2
5	HM	HM-HU102	Introduction to IKS (Indian Knowledge Systems-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional							
1	BS	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME192	Workshop/ Manufacturing Practices	0	0	4	2
4	HM	HM-HU191	Communication Laboratory	0	0	2	1
Total Practical/ Sessional				0	0	11	6.5
Total of First Semester				12	2	11	20.5

Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-PH201	Physics	3	1	0	4
3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU203	Inculcation of Human Values and Professional Ethics (MulyaPravah)	2	0	0	2
5	AU	AU271	NSS/NCC	2	0	0	0
Total Theory				13	2	0	13

Practical/ Sessional							
1	BS	BS-PH291	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME291	Engineering Graphics and Design	0	0	4	2
4	PW	PW-BS281	Ideation Laboratory	0	0	2	1
<i>Total Practical/ Sessional</i>				0	0	13	6.5
Total of Second Semester				13	2	13	19.5

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	ES	ES-ME301	Materials Engineering	3	0	0	3
2	ES	ES-ME302	Engineering Mechanics	3	1	0	4
3	PC	PC-ME301	Thermodynamics	3	1	0	4
4	PC	PC-ME302	Basic Manufacturing Processes	4	0	0	4
5	BS	BS-M301	Mathematics-III	2	1	0	3
6	AU	AU-BS371	Environmental Sciences	2	0	0	0
Total Theory				17	3	0	18
Practical/ Sessional							
1	PC	PC-ME391	Basic Manufacturing Processes Laboratory	0	0	3	1.5
Total Practical/ Sessional				0	0	3	1.5
Total of Third Semester				19	3	3	19.5

Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME401	Heat Transfer	3	1	0	4
2	PC	PC-ME402	Fluid Mechanics and Hydraulic Machines	3	1	0	4
3	PC	PC-ME403	Strength of Materials	3	1	0	4

4	PC	PC-ME404	Metrology and Instrumentation	4	0	0	4
5	HM	HM-HU401	Leadership Skill and Management (JeevanKaushal-III)	2	0	0	2
6	BS	BS-BIO401	Biology for Engineers	2	0	0	2
7	BS	BS-M401	Vedic Mathematics (Indian Knowledge Systems-II)	2	0	0	2
<i>Total Theory</i>				17	3	0	22
Practical/ Sessional							
1	PC	PC-ME491	Metrology and Instrumentation Laboratory	0	0	3	1.5
2	PW	PW-ME481	Project-I	0	0	2	1
<i>Total Practical/ Sessional</i>				0	0	3	2.5
Total of Fourth Semester				19	3	3	24.5

Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME501	Applied Thermodynamics	3	1	0	4
2	PC	PC-ME502	Machine Design-I	3	1	0	4
3	PC	PC-ME503	Kinematics and Theory of Machines	3	1	0	4
4	ES	ES-ME501	Operation Research	3	0	0	3
5	BS	BS-M501	Astronomy (Indian Knowledge Systems-III)	2	0	0	2
6	HM	HM-HU571	Aptitude Skill Development-I	1	0	0	1
Total Theory				15	3	0	18
Practical/ Sessional							
1	PC	PC-ME591	Mechanical Engineering Laboratory-I (Design)	0	0	3	1.5
2	PC	PC-ME592	Mechanical Engineering Laboratory-II (Thermal and Fluid)	0	0	3	1.5
3	HM	HM-HU591	Professional Skill (JeevanKaushal-II)	1	0	2	2
5	PW	PW-ME581	Internship	0	0	2	1
Total Practical/ Sessional				3	0	10	7
Total of Fifth Semester				17	3	10	24

Sixth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME601	Manufacturing Technology	4	0	0	4
2	PC	PC-ME602	Machine Design-II	3	1	0	4
3	PC	PC-ME603	Production and Operation Management	3	0	0	3
4	PE	PE-ME601	Elective-I	3	0	0	3
5	PE	PE-ME602	Elective-II	3	0	0	3
6	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
Total Theory				17	1	0	18
Practical/ Sessional							
1	PC	PC-ME691	Mechanical Engineering Laboratory-III (Applied Mechanics and Kinematics)	0	0	3	1.5
4	PW	PW-ME681	Project-II	0	0	2	1
Total Practical/ Sessional				0	0	5	2.5
Total of Sixth Semester				17	1	5	20.5

Seventh Semester (Fourth Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME701	Advanced Manufacturing Technology	3	0	0	3
2	PE	PE-ME701	Elective-III	3	0	0	3
3	PE	PE-ME702	Elective-IV	3	0	0	3
4	OE	OE-XXXXX	Open Elective-I	3	0	0	3
Total Theory				12	0	0	12
Practical/ Sessional							
1	PC	PC-ME791	Mechanical Engineering Laboratory- IV (Manufacturing)	0	0	3	1.5
2	PW	PW-ME781	Project-III	0	0	6	3
Total Practical/ Sessional				0	0	9	4.5
Total of Seventh Semester				12	0	9	16.5

Eighth Semester (Fourth Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	OE	OE-XXXXX	Open Elective-II	3	0	0	3
2	OE	OE-XXXXX	Open Elective-III	3	0	0	3
3	BS	BS-M801	Astronomy (Indian Knowledge Systems-IV)	2	0	0	2
4	HM	HM-HU801	Universal Human Value-II (JeevanKaushal-IV)	2	0	0	2
Total Theory				10	0	0	10
Practical/ Sessional							
1	PW	PW-ME881	Project-IV	0	0	8	4
2	PW	PW-ME882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional				0	0	8	5
Total of Eighth Semester				10	0	8	15

Part III: Specializations and corresponding List of Elective Papers

A. Specialization in Thermal Engineering

Sl. No.	Semester	Course Name	Course Code	Course Title	L	T	P	Credit
Theory								
1	VI	Professional Elective-I	PE-ME601AA	Internal Combustion Engines and Gas Turbines	3	0	0	3
			PE-ME601AB	Turbo Machinery				
2	VI	Professional Elective-II	PE-ME602AA	Refrigeration and Air Conditioning	3	0	0	3
			PE-ME602AB	Renewable Energy Engineering				
3	VII	Professional Elective-III	PE- ME701AA	Automobile Engineering	3	0	0	3
			PE- ME701AB	Gas Dynamics and Jet Propulsion				
4	VII	Professional Elective-IV	PE-ME702AA	Advanced Welding Technology	3	0	0	3
			PE-ME702AB	Nuclear Engineering				
Total Theory					12	0	0	12
Practical/ Sessional Course								
Total Practical/ Sessional Course					0	0	0	0
Total					12	0	0	12

B. Specialization in Smart Manufacturing

Sl. No.	Semester	Course Name	Course Code	Course Title	L	T	P	Credit
Theory								
1	VI	Professional Elective-I	PE-ME601BA	Digital Twin	3	0	0	3
			PE-ME601BB	Industrial AI				
2	VI	Professional Elective-II	PE-ME602BA	Robotics in Manufacturing	3	0	0	3
			PE-ME602BB	Predictive Maintenance and Sustainability				
3	VII	Professional Elective-III	PE- ME701BA	Additive Manufacturing	3	0	0	3
			PE- ME701BB	Sensors and Actuators				

4	VII	Professional Elective-IV	PE-ME702BA	Smart Materials and Applications	3	0	0	3
			PE-ME702BB	Decision Analytics and SupplyChain Management				
Total Theory					12	0	0	12
Practical/ Sessional Course								
Total Practical/ Sessional Course					0	0	0	0
Total					12	0	0	12

Part IV: List of Open Elective Papers

Open Elective Papers offered by ME department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VIII	OE-ME801A	Open Elective-I	Introduction to Robotics	3	0	0	3
2		OE-ME801B		3D Printing	3	0	0	3
Total Theory and Practical					6	0	0	6
Total					6	0	0	6

Part V: Curriculum Structure for Minor Degree

A. Minor Degree in Sustainable Energy Engineering

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MN-ME401A	Energy and its Resources	3	0	0	3
2	VI	MN-ME501A	Climate Change Understanding and Observations	3	0	0	3
3	VII	MN-ME601A	Energy Storage Systems for Renewables	3	0	0	3
4	VII	MN-ME702A	Electronics for Renewables	3	0	0	3
5	VIII	MN-ME801A	Solar Energy Technologies and System Design	4	0	0	4
6	VIII	MN-ME802A	Solar Energy System Installations and Maintenance	4	0	0	4
Total Theory				20	0	0	20
Practical/ Sessional							
Total Practical/ Sessional				0	0	0	0
Total of Minor Degree				20	0	0	20