JAYPEE UNIVERSITY OF ENGINEERING AND TECHNOLOGY
Department of Mechanical Engineering

BTech. in MECHANICAL AND MECHATRONICS ENGINEERING (ADDITIVE MANUFACTURING)

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	Basic Electrical and Electronics	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	Basic Electrical and Electronics 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 No.	Department	Title	Contact Hours L T P Total				Credits
1.	MA105	Maths	Numerical Methods	3	1	-	4	4
2.	ME102	MEC	Basic Thermodynamics	3	1	-	4	4
3.	ME103	MEC	Strength of Materials	3	1	-	4	4
4.	ME113	MEC	Manufacturing Technology	3	1	-	4	4
5.	ME204	MEC	Basic Thermodynamics Lab	-	-	2	2	1
6.	ME205	MEC	Strength of Materials Lab	-	-	2	2	1
7.	ME219	MEC	Manufacturing Technology Lab	-	-	2	2	1
8.	CS001	CSE	Python Programming	-	-	2	2	1
9.		HSS	Value Added Course-2	2	-	-	2	-
10.	ME009	ME	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit, Optional)
			TOTAL	14			26	20

FOURTH SEMESTER

Sr.No.	Course Code	Department	Title	Contact Hours L T P Total				Credits
1.		HSS	HSS Elective - 1	2	1	-	3	3
2.	ME106	MEC	Fluid Mechanics	3	1	-	4	4
3.	ME105	MEC	Theory of Machines	3	1	-	4	4
4.	ME114	MEC	Computer Aided Design	3	-	-	3	3
5.	EC114	ECE	Control Systems	3	-	-	3	3
6.	GE101	MEC	Environmental Science	2	-	-	2	2
7.	ME207	MEC	Theory of Machines Lab	-	-	2	2	1
8.	ME220	MEC	Computer Aided Design Lab	-	-	2	2	1
9.	ME208	MEC	Fluid Mechanics Lab	-	-	2	2	1
			TOTAL	16	3	6	25	22

*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.	ME115	MEC	Engineering Materials	3	-	-	3	3
3.	ME110	MEC	Design of Machine Elements	3	-	-	3	3
4.	EC109	ECE	Measurement and Instrumentation	3	-	-	3	3
5.	ME116	MEC	Computer Integrated Manufacturing	3	-	-	3	3
6.	ME213	MEC	Minor Project – 1			4	4	2
7.	ME20214	MEC	Design of Machine Elements Lab	-	-	2	2	1
8.	EC209	ECE	Measurement and Instrumentation	-	-	2	2	1
9.	ME221	MEC	Computer Integrated Manufacturing Lab	-	-	2	2	1
10.	ME222	MEC	Design Thinking Lab	-	-	2	2	1
11.	ME002	MEC	Verbal and non-verbal reasoning-1	3	-	-	3	Qualifying
12.	ME010	MEC	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit, Qualifying)
			TOTAL				30	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.	ME117	MEC	Basics of Additive Manufacturing	3	-	-	3	3
3.	EC111	ECE	Microprocessor and Interfacing	3	-	-	3	3
4.	EC112	ECE	Digital Signal Processing	3	-	-	3	3
5.		MEC	Discipline Elective – 1	3	-	-	3	3
6.			Value Added Course-II	3	-	-	3	Qualifying
7.	ME223	MEC	Basics of Additive Manufacturing Lab	-	-	2	2	1
8.	EC210	ECE	Microprocessor and Interfacing Lab	-	-	2	2	1
9.	EC211	ECE	Digital Signal Processing Lab	-	-	2	2	1
10.	ME216	MEC	Minor Project-2	-	-	4	4	2
11.	HS004	HSS	Value Added Course (Indian Constitution and Traditional Knowledge)	2	0	0	2	2 (Audit) Qualifying
			TOTAL				30	20

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.	ME118	MEC	Robotics Engineering	3	-	-	3	3
2.	ME119	MEC	Additive Manufacturing Applications	3	-	-	3	3
3.		MEC	Discipline Elective – 2	3	-	-	3	3
4.			Open Elective - 1	3	-	-	3	3
5.	ME224	MEC	Robotics Engineering Lab	-	-	2	2	1
6.	ME225	MEC	Additive Manufacturing Applications Lab	-	-	2	2	1
7.	ME217	MEC	Major Project Part-1	-	-	8	8	4
8.	ME004	ME	Internship/Summer Training (6 weeks - 240-270 hours)	-	-	-	-	6 (Audit Qualifying)
			TOTAL				24	18

EIGHTH SEMESTER

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

Total Credits for B. Tech. –160

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List of Discipline Electives

Subject code	Subject name
ME311	Operations Research
ME314	Finite Element Technique
ME330	Optimization Methods in Engineering
ME312	Laser Material Processing
ME317	Statistical Quality Control
ME320	Production and Operation Management
ME306	Engineering Data Analytics
ME331	Supply Chain Management
ME356	Hydraulics and Pneumatics
ME357	Maintenance and Reliability Engineering
ME358	Reverse Engineering
EC315	Advanced Control System
EC316	Neural Network
EC306	Embedded System
EC311	Internet Based Automation
CS303	Artificial Intelligence
CS108	Machine Learning
CS103	Data Structure
CS106	Algorithm and Problem Solving
CS307	Blockchain Technology

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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

5. Verbal and non-verbal reasoning-1 (ME002)