Curriculum B.Tech Mechanical Engineering with specialization in Design and Manufacturing (MDM)

Semester 1				
Course Name	**I**	**P**	**C**	**Category**
Calculus	3	0	3	BSC
Engineering Mechanics	3	0	3	BSC
Computational Engineering	3	0	3	BEC
Concepts in Engineering Design	3	0	3	DES
English for Communication	2	0	2	HMC
Earth, Environment & Design	2		P/F	DES
Engineering Skills Practice	0	3	2	BEC
Materials & Mechanics Practice	0	3	2	BSC
Computational Engineering Practice	0	3	2	BEC
Engineering Graphics	1	3	3	DES
Total	**17**	**12**	**23**	
Semester 2				
Course Name	**I**	**P**	**C**	**Category**
Differential Equations	3	0	3	BSC
Engineering Electromagnetics	3	0	3	BSC
Science and Engineering of Materials	3	0	3	BEC
Basic Electrical & Electronics Engineering	3	0	3	BEC
Design History	2	0	2	DES
Professional Ethics for Engineers	2	0	P/F	HMC
Industrial Design Sketching	0	3	2	BEC
Measurement & Data Analysis Practice	0	3	2	BSC
Engineering Electromagnetics Practice	0	3	2	BSC
Design Realization	0	3	2	DES
Total	**16**	**12**	**22**	
Semester 3				
Course Name	**I**	**P**	**C**	**Category**
Linear Algebra	3	0	3	BSC
Thermal Engineering - Concepts and Applications	3	0	3	PEC
Mechanics of Materials	3	0	3	PEC
Basic Concepts in Manufacturing Processes	3	0	3	PEC
Electrical Drives	1	3	3	PEC
Machine Drawing and Manufacturability Analysis Practice	0	3	2	PEC
Product Realization Practice	0	3	2	PEC
Engineering Economics	3	0	3	HMC
Total	**16**	**9**	**22**	
Semester 4				
Course Name	**I**	**P**	**C**	**Category**
Numerical Methods	3	0	3	BSC
Fluid Mechanics and Heat Transfer	3	0	3	PEC
Kinematics and Dynamics of Mechanisms	3	0	3	PEC
Quality Inspection and Product Validation	3	0	3	PEC
Mechanical Design Practice	0	3	2	PEC
Quality Inspection and Product Validation Practice	0	3	2	PEC
Fluid Mechanics and Heat Transfer Practice	0	3	2	PEC
Sociology of Design	3	0	3	DES

Total	**15**	**9**	**21**	
Semester 5				
Course Name	**I**	**P**	**C**	**Category**
Entrepreneurship and Management Functions	3	0	3	HMC
Thermal Energy Systems	3	0	3	PEC
Design of Machine elements	3	0	3	PEC
Automation in Manufacturing	3	0	3	PEC
Sensors and Controls	3	0	3	PEC
Sensors and Controls Practice	0	3	2	PEC
Thermal Engineering Practice	0	3	2	PEC
Manufacturing Automation Practice	0	3	2	PEC
Total	**15**	**9**	**21**	
Semester 6				
Course Name	**I**	**P**	**C**	**Category**
Design for Quality and reliability	3	0	3	DES
Computational Methods in Engineering	3	0	3	PEC
Computer Aided Design and Manufacturing	3	0	3	PEC
Elective – I	3	0	3	ELE
Elective – II	3	0	3	ELE
Microprocessors and Controllers	1	3	3	PEC
Mechanical Design Simulation Practice	0	3	2	PEC
Product Design Practice	0	3	2	PCD
Total	**16**	**9**	**22**	
Semester 7				
Course Name	**I**	**P**	**C**	**Category**
Internship	0	-	5	PCD
Free Elective – I	3	0	3	ELE
Design Project	0	6	5	DES
Total	**3**	**6**	**13**	
Semester 8				
CourseName	**I**	**P**	**C**	**Category**
Elective – III	3	0	3	ELE
Free Elective-II	3	0	3	ELE
Design Elective	3	0	3	DES
Project	0	-	10	PCD
Total	9		**19**	

Note:

Elective courses such as Designing Intelligent systems, Sustainable Design, Systems thinking for design will be offered as a group to choose in Design Elective

*Internship is for a period of 5 months

Category	Credit Distribution	Credit Distribution in %
BSC	24	15
BEC	16	10
DES	23	14
Elective	15	9
HMC	8	5
PEC	60	36
PCD	17	11
Total	**163**