B. Tech. Mechanical Engineering (Design and Manufacturing) + M. Tech. Product Design (MPD)

(According to 31st Senate meeting held on 1st July 2016)

S.No	Course Name	I	P	C	Category
Semester 1					
1	Calculus	3	0	3	BSC
2	Engineering Mechanics	3	0	3	BSC
3	Computational Engineering/ Science and Engineering of Materials	3	0	3	BEC/ BEC
4	Concepts in Engineering Design/ Basic Electrical & Electronics Engineering	3	0	3	DES/ BEC
5	English for Communication	2	0	2	HMC
6	Earth, Environment & Design/ Professional Ethics	2	0	P/F	DES/ HMC
7	Engineering Skills Practice	0	3	2	BEC
8	Computational Engineering/ Measurement & Data Analysis	0	3	2	BEC/ BSC
9	Basic Materials & Mechanics Practice	0	3	2	BSC
10	Engineering Graphics	1	3	3	BEC
	Total Credits			**23**	
Semester 2					
1	Differential Equations	3	0	3	BSC
2	Engineering Electromagnetics	3	0	3	BSC
3	Science and Engineering of Materials/ Computational Engineering	3	0	3	BEC/ BEC
4	Basic Electrical & Electronics Engineering/ Concepts in Engineering Design	3	0	3	BEC/ DES
5	Design History	2	0	2	DES
6	Professional Ethics/ Earth, Environment & Design	2	0	P/F	HMC/ DES
7	Engineering Electromagnetics Practice	0	3	2	BSC
8	Measurement & Data Analysis/ Computational Engineering	0	3	2	BSC/ DES
9	Industrial Design Sketching	0	3	2	DES
10	Design Realization	0	3	2	DES
	Total Credits			**22**	
Semester 3					
1	Linear Algebra	3	0	3	BSC
2	Systems thinking for design	2	0	2	DES
3	Engineering Economics	2	0	2	HMC
4	Thermal Engineering-Concepts and Applications	3	0	3	PEC
5	Mechanics of Materials	3	0	3	PEC
6	Basic Concepts in Manufacturing Processes	3	0	3	PEC
7	Electrical Drives	1	3	3	PEC
8	Machine Drawing and Manufacturability Analysis Practice	0	3	2	PEC
9	Product Realization Practice	0	3	2	PEC
	Total Credits			**23**	

Semester 4					
1	Numerical Methods	3	0	3	BSC
2	Designing Intelligent Systems	2	0	2	DES
3	Sociology of Design	2	0	2	HMC
4	Fluid Mechanics and Heat Transfer	3	0	3	PEC
5	Kinematics and Dynamics of Mechanisms	3	0	3	PEC
6	Quality Inspection and Product Validation	3	0	3	PEC
7	Mechanical Design Practice	0	3	2	PEC
8	Quality Inspection and Product Validation Practice	0	3	2	PEC
9	Fluid Mechanics and Heat Transfer Practice	0	3	2	PEC
	Total Credits			**22**	
Semester 5					
1	Sustainable Design	2	0	2	DES
2	Entrepreneurship and Management Functions	2	0	2	HMC
3	Thermal Energy Systems	3	0	3	PEC
4	Design of Machine Elements	3	0	3	PEC
5	Automation in Manufacturing	3	0	3	PEC
6	Sensors and Controls	3	0	3	PEC
7	Thermal Engineering Practice	0	3	2	PEC
8	Sensors and Controls Practice	0	3	2	PEC
9	Manufacturing Automation Practice	0	3	2	PEC
	Total Credits			**22**	
Semester 6					
1	Design for Quality and Reliability	2	0	2	DES
2	Product Management	2	0	2	HMC
3	Computational Methods in Engineering	3	0	3	PEC
4	Computer Aided Design and Manufacturing	3	0	3	PEC
5	Elective-I	3	0	3	ELE
6	Elective-II	3	0	3	ELE
7	Microprocessors and Controllers	1	3	3	PEC
8	Mechanical Design Simulation practice - I	0	3	2	PEC
9	Product Design Practice	0	2	2	DES
	Total Credits			**23**	
Semester 7					
1	Data Analytics	2	0	2	HMC
2	Design with Advanced Engineering Materials	3	0	3	PEC
3	Design for Manufacture and Assembly	3	0	3	PEC
4	Probabilistic Engineering Design	3	0	3	PEC
5	Elective-III	3	0	3	ELE
6	Free Elective-I	3	0	3	ELE
7	Reverse Engineering and product Design Practice	0	3	2	PEC
8	Product Life-cycle Management Practice	0	3	2	PEC
	Total Credits			**21**	

Semester 8					
1	Innovation Management	2	0	2	HMC
2	Ergonomics	2	0	2	PEC
3	Design Optimization	3	0	3	PEC
4	Elective-IV	3	0	3	ELE
5	Elective-V	3	0	3	ELE
6	Free Elective-II	3	0	3	ELE
7	Mechanical Design Simulation Practice - II	0	3	2	PEC
8	Innovation Studio	0	3	2	PEC
9	Comprehensive Viva-voce			2	PEC
	Total Credits			**22**	
Semester 9					
1	Elective-VI	3	0	3	PEC
2	Internship			5	PCD
3	Design Project			6	DES
	Total Credits			**14**	
Semester 10					
1	Project			18	PCD
	Total Credits			**18**	
				210	