

CURRICULUM

B. Tech. Mechanical Engineering with specialization in 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	Code
Semester 1						
1	Calculus	3	0	3	BSC	MAT104T
2	Engineering Mechanics	3	0	3	BSC	PHY108T
3	Computational Engineering/ Science and Engineering of Materials	3	0	3	BEC/ BEC	COM105T / INT108T
4	Concepts in Engineering Design/ Basic Electrical and Electronics Engineering	3	0	3	DES/ BEC	DES101T / ELE103T
5	English for Communication	2	0	2	HMC	INT107T
6	Earth, Environment & Design/ Professional Ethics for Engineers	2	0	P/F	DES/ HMC	DES103T / MAN102T
7	Engineering Skills Practice	0	3	2	BEC	INT110P
8	Computational Engineering Practice / Measurement & Data Analysis Practice	0	3	2	BEC/ BSC	COM105P / INT111P
9	Basic Materials & Mechanics Practice	0	3	2	BSC	PHY109P
10	Engineering Graphics	1	3	3	BEC	INT109P
	Total Credits			23		
Semester 2						
1	Differential Equations	3	0	3	BSC	MAT105T
2	Engineering Electromagnetics	3	0	3	BSC	PHY107T
3	Science and Engineering of Materials/ Computational Engineering	3	0	3	BEC/ BEC	INT108T / COM105T
4	Basic Electrical and Electronics Engineering/ Concepts in Engineering Design	3	0	3	BEC/ DES	ELE103T / DES101T
5	Design History	2	0	2	DES	DES102T
6	Professional Ethics for Engineers / Earth, Environment & Design	2	0	P/F	HMC/ DES	MAN102T / DES103T
7	Engineering Electromagnetics Practice	0	3	2	BSC	PHY107P
8	Measurement & Data Analysis Practice / Computational Engineering Practice	0	3	2	BSC/ BEC	INT111P / COM105P
9	Industrial Design Sketching	0	3	2	DES	DES104P
10	Design Realization	0	3	2	DES	DES105P
	Total Credits			22		
Semester 3						
1	Linear Algebra	3	0	3	BSC	MAT204T
2	Systems thinking for design	2	0	2	DES	DES201T
3	Engineering Economics	2	0	2	HMC	MAN201T
4	Thermal Engineering-Concepts and Applications	3	0	3	PEC	MEC213T
5	Mechanics of Materials	3	0	3	PEC	MEC214T
6	Basic Concepts in Manufacturing Processes	3	0	3	PEC	MEC215T
7	Electrical Drives	1	3	3	PEC	ELE220P
8	Machine Drawing and Manufacturability Analysis Practice	0	3	2	PEC	MEC216P

9	Product Realization Practice	0	3	2	PEC	MEC217P
	Total Credits			23		
Semester 4						
1	Numerical Methods	3	0	3	BSC	MAT206T
2	Designing Intelligent Systems	2	0	2	DES	DES203T
3	Sociology of Design	2	0	2	HMC	MAN202T
4	Fluid Mechanics and Heat Transfer	3	0	3	PEC	MEC218T
5	Kinematics and Dynamics of Mechanisms	3	0	3	PEC	MEC219T
6	Quality Inspection and Product Validation	3	0	3	PEC	MEC220T
7	Mechanical Design Practice	0	3	2	PEC	MEC221P
8	Quality Inspection and Product Validation Practice	0	3	2	PEC	MEC220P
9	Fluid Mechanics and Heat Transfer Practice	0	3	2	PEC	MEC218P
	Total Credits			22		
Semester 5						
1	Sustainable Design	2	0	2	DES	DES301T
2	Entrepreneurship and Management Functions	2	0	2	HMC	MAN301T
3	Thermal Energy Systems	3	0	3	PEC	MEC317T
4	Design of Machine Elements	3	0	3	PEC	MEC318T
5	Automation in Manufacturing	3	0	3	PEC	MEC319T
6	Sensors and Controls	3	0	3	PEC	MEC320T
7	Thermal Engineering Practice	0	3	2	PEC	MEC321P
8	Sensors and Controls Practice	0	3	2	PEC	MEC320P
9	Manufacturing Automation Practice	0	3	2	PEC	MEC319P
	Total Credits			22		
Semester 6						
1	Design for Quality and Reliability	2	0	2	DES	DES302T
2	Product Management	2	0	2	HMC	MAN303T
3	Computational Methods in Engineering	3	0	3	PEC	MEC322T
4	Computer Aided Design and Manufacturing	3	0	3	PEC	MEC323T
5	Elective-I	3	0	3	ELE	-
6	Elective-II	3	0	3	ELE	-
7	Microprocessors and Controllers	1	3	3	PEC	MEC324A
8	Mechanical Design Simulation practice - I	0	3	2	PEC	MEC325P
9	Product Design Practice	0	2	2	DES	INT303
	Total Credits			23		
Semester 7						
1	Data Analytics	2	0	2	HMC	MAN406T
2	Design with Advanced Engineering Materials	3	0	3	PEC	MEC414T
3	Design for Manufacture and Assembly	3	0	3	PEC	MEC415T
4	Probabilistic Engineering Design	3	0	3	PEC	MEC410T
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	MEC412P
8	Product Life-cycle Management Practice	0	3	2	PEC	MEC411P
	Total Credits			21		

Semester 8						
1	Innovation Management	2	0	2	HMC	MAN407T
2	Ergonomics	2	0	2	PEC	MAN408T
3	Design Optimization	3	0	3	PEC	MEC419T
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	MEC420P
8	Innovation Studio	0	3	2	PEC	MAN409P
9	Comprehensive Viva-voce			2	PEC	-
	Total Credits			22		
Semester 9						
1	Elective-VI	3	0	3	PEC	-
2	Internship			5	PCD	INT511
3	Design Project			6	DES	DES512
	Total Credits			14		
Semester 10						
1	Project			18	PCD	INT512
	Total Credits			18		
				210		