



**MAULANA AZAD
NATIONAL INSTITUTE OF TECHNOLOGY, Bhopal - 462003**

**DEPARTMENT OF MECHANICAL ENGINEERING
M.Tech (Full Time) in Industrial Design**

PROPOSED SCHEME M.Tech (w.e.f. July 2024)

First Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
IEM24511	Work System Design and Ergonomics	3	-	-	3
ID24512	Accelerated Product Design & Development	3	-	-	3
ID24513	Design Thinking	3	-	-	3
	Department Elective – 1	3	-	-	3
	Department Elective – 2	3	-	-	3
ID24514	Advanced CAD Lab	-	-	2	1
SM24515	Smart Manufacturing –I	-	-	2	1
ID24515	Seminar-I	-	-	2	1
ID24516	Minor Project-1 (Self Learning)				2
Total Hours: 23 Total Credits: 20		Total Semester Credits			20

- Communication Skill will be Audit Course of 2 credits which will not be counted in SGPA/CGPA calculation

Second Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
ID24521	Design and Development of product prototype	3	-	-	3
ID24522	Advanced Product Design	3	-	-	3
	Department Elective – 3	3	-	-	3
	Department Elective – 4	3	-	-	3
	Open Elective	3	-	-	3
ID24523	Product Development Lab	-	-	2	1
SM24523	Additive Manufacturing	-	-	2	1
ID24524	Seminar-II	-	-	2	1
ID24525	Minor Project-2 (Self Learning)				2
Total Hours: 23 Total Credits: 40		Total Semester Credits			20

Third Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
ID24611	Dissertation Phase-I	-	-	40	20
Total Hours: 40 Total Credits: 60		Total Semester Credits			20

Fourth Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
ID24621	Dissertation Phase-II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

List of Department Electives	
ID24551	Bearing Design & Selection
ID24552	Mechanism & Synthesis
ID24553	Detailed Design of Rotating Machines
ID24554	Design for Reliability
ID24555	Computer Aided Design and Manufacturing (CAD / CAM)
ID24556	Advanced Dynamics of Machine
ID24557	Material Selection in Mechanical Design
ID24558	Advanced Operations Research
ID24559	Concurrent Engineering
ID24560	Facility & Process Planning
ID24561	Additive Manufacturing
ID24562	Design of Experiments
ID24563	Supply Chain Management
ID24564	Robotics & Robot Applications
ID24565	Nature of Materials and Processes
ID24566	Computational Methods
ID24567	Product Planning & Design for Market
ID24568	Advanced Computer Graphics
ID24569	Universal Human Values and Professional Ethics
ME24524	Research Methodology

List of Open Electives	
ARP24581	Introduction to Urban Planning
BSE24581	Bioprocess Engineering
BSE24582	Biophysics Tools and Techniques
CHE24581	Analytical Techniques
CHE24582	Green Technology & Processes
CE24581	Solid Waste Management
CE24582	Basic Concept of GIS
CE24583	Road Safety
CSE24581	Machine Learning
CSE24582	Advanced Data Structures and Algorithms
PHY24581	Nanotechnology and Nanoscience
EE24581	Electric Machines & Applications
EE24582	Control and Instrumentation

ECE24581	Introduction to Fuzzy Logic
ECE24582	Neural Networks and its Applications
EC24581	Energy Resource Technologies
HUM24581	Intellectual Property Rights for Engineers
HUM24582	Applied Psychology: Human Centered Design and Engineering
MTH24581	Advanced Operations Research
MTH24582	Computing Technologies
MME24581	Advanced Instrumentation Methods for Material Analysis
MME24582	Smart Materials and their Application
MBA24581	Engineering Startup Management