

Maulana Azad National Institute of Technology, Bhopal - 462003

DEPARTMENT OF MECHANICAL ENGINEERING

SCHEME FOR B.TECH

(2024 admitted batch onwards)

First Year Credits (Cumulative) 41

THIRD SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
MTH24231	Applied Numerical Methods	3	1	-	4
HUM24251	Fundamentals of Entrepreneurship	3	-	-	3
ME24211	Engineering Thermodynamics	2	1	-	3
ME24212	Mechanics of Materials	2	1	-	3
ME24213	Material Science and Engineering	3	-	-	3
ME24214	Mechanical Drawing and CAD	3	-	-	3
ME24215	Heat Engines Lab.	-	-	2	1
ME24216	Mechanics of Materials Lab.	-	-	2	1
ME24217	Material Characterization Lab.	-	-	2	1
ME24218	Professional Practices	-	2	-	2
ME24212	Minor-1 "Mechanics of Materials"	3	-	-	3*
Total Hours =27		18	3	6	24
Total Credits (Cumulative)					65
Additional Subject: - National Cadet Corps (NCC)					
NCC24251	National Cadet Corps III	1	5	1	7
Total Credits (Cumulative)					11

*(Minor-1 Extra for other dept. not for parent)

FOURTH SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
ME24252	Fundamental of Design Methods	2	1	-	3
ME24221	Machine Design-1	3	1	-	4
ME24222	Mechanism of Machines	3	-	-	3
ME24223	Manufacturing Processes	3	-	-	3
ME24224	Industrial Engineering and Operations Research	3	-	-	3
ME 24225	Mechanical Measurements	2	1	-	3
ME24226	Mechanism of Machines Lab.	-	-	2	1
ME24227	Manufacturing Processes Lab.	-	-	2	1
ME24228	Project Based Lab-1	-	-	2	1
ME24224	Minor-2 "Industrial Engineering and Operations Research"	3	-	-	3*
Total Hours =25		16	3	6	22
Total Credits (Cumulative)					87
Additional Subject: - National Cadet Corps (NCC)					
NCC24252	National Cadet Corps IV	2	-	1	3
Total Credits (Cumulative)					14

*(Minor-2 Extra for other dept. not for parent)

FIFTH SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
ME24351	Engineering Management	3	-	-	3
ME24311	Machine Design-2	3	-	-	3
ME24312	Machining Processes	3	-	-	3
ME24313	Fluid Mechanics	3	1	-	4
EE24332	Electrical Machines	3	-	-	3
	Departmental Elective-1(A)	3	-	-	3
ME24314	Fluid Mechanics Lab.	-	-	2	1
EE24333	Electrical Machinery Lab.	-	-	2	1
ME24315	Machining Processes Lab.	-	-	2	1
ME24316	Internship/ Industrial Training	-	-	2	1
ME24312	Minor-3 "Machining Processes"	3	-	-	3*
Total Hours =27		18	1	8	23
Total Credits (Cumulative)					110
Additional Subject: - National Cadet Corps (NCC)					
NCC24351	National Cadet Corps V	1	5	1	7
Total Credits (Cumulative)					21

*(Minor-3 Extra for other dept. not for parent)

SIXTH SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
CS24352	Data Structures and Algorithm	3	1	-	4
ME24321	Heat and Mass Transfer	3	1	-	4
ME24322	Turbomachines	3	-	-	3
ME24323	Internal Combustion and Hybrid Engines	3	-	-	3
	Departmental Elective-2(A)	3	-	-	3
ME24324	Heat and Mass Transfer Lab.	-	-	2	1
ME24325	Turbomachines Lab.	-	-	2	1
ME24326	Internal Combustion and Hybrid Engines Lab	-	-	2	1
ME24327	Project Based Learning	-	-	2	1
ME24323	Minor-4 "Internal Combustion and Hybrid Engines"	3	-	-	3*
Total Hours =25		15	2	8	21
Total Credits (Cumulative)					131
Additional Subject: - National Cadet Corps (NCC)					
NCC24352	National Cadet Corps VI	2	-	1	3
Total Credits (Cumulative)					24

*(Minor-4 Extra for other dept. not for parent)

SEVENTH SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
HUM24451	Engineering Economics and IPR	3	-	-	3
ME24411	Refrigeration and Air Conditioning	3	-	-	3
	Programme Elective-1(A)	3	-	-	3
	Programme Elective-2(A)	3	-	-	3
	Open Elective-1(C)	3	-	-	3
ME24412	Refrigeration and Air Conditioning Lab.	-	-	2	1
ME24413	Project Based Lab-2	-	-	4	2
ME24414	Industrial / Field Training	-	-	2	1
	Minor-5 "Any one Programme Elective from above"	3	-	-	3*
Total Hours =23		15	-	8	19
Total Credits (Cumulative)					150

*(Minor-5 Extra for other dept. not for parent)

EIGHTH SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
	Programme Elective-3(A) (NPTEL/SWAYAM Courses Only)	3	-	-	3
	Programme Elective-4(A) (NPTEL/SWAYAM Courses Only)	3	-	-	3
ME24421	Internship/Project	-	-	16	8
ME24422	General Proficiency	-	-	-	1
Total Hours =22		6	-	16	15
Total Credits (Cumulative)					165

LIST OF ELECTIVES (GROUP A)

Group A Departmental Electives - Third Year		
S. No.	Course Code	Course Name
1.	ME24352	Gas Dynamics
2.	ME24353	Gas Turbines and Jet Propulsion
3.	ME24354	Automobile Engineering
4.	ME24355	An Introduction to Microfluidics
5.	ME24356	Robotics
6.	ME24357	Materials Handling
7.	ME24358	Service Operation Management
8.	ME24359	Statistical Quality Control
9.	ME24360	Mechatronics
10.	ME24361	Theory of Vibrations
11.	ME24362	Mechanics of Deformable Solids
12.	ME24363	Fracture Mechanics and Failure Analysis
13.	ME24364	Maintenance Engineering and Management
14.	ME24365	Product Design and Development
15.	ME24366	Theory of Elasticity and Plasticity
16.	ME24367	Material Management
17.	ME24368	Engineering Optimization
18.	ME24369	Mechanical Behaviour of Materials
19.	ME24370	Supply Chain Management

Group A Programme Electives - Fourth Year		
S. No.	Course Code	Course Name
1.	ME 24451	Energy Conversion Systems
2.	ME 24452	Design of Heat Exchangers
3.	ME 24453	Solar Energy
4.	ME 24454	Non-Conventional Energy Sources
5.	ME 24455	Energy Audit Carbon Sequestration
6.	ME 24456	Computational Fluid Dynamics and Heat Transfer
7.	ME 24457	Wind Energy Technology
8.	ME 24458	Additive Manufacturing Technologies
9.	ME 24459	Advanced Production Engineering
10.	ME 24460	Nano Manufacturing
11.	ME 24461	Lean Manufacturing
12.	ME 24462	Composite Materials
13.	ME 24463	Smart Materials
14.	ME 24464	Sustainable Supply Chain Management
15.	ME 24465	Accounts and Financial Planning
16.	ME 24466	Organizational Behaviour
17.	ME 24467	Total Quality Management
18.	ME 24468	Marketing Management
19.	ME 24469	CAD/CAM
20.	ME 24470	Advanced Operations Research
21.	ME 24471	Industrial Tribology
22.	ME 24472	Mechanics of Composite Materials
23.	ME 24473	Computational Methods
24.	ME 24474	Analysis and Design of Mechanical Control System
25.	ME 24475	Advanced Machine Design