

Maulana Azad National Institute of Technology, Bhopal - 462003

DEPARTMENT OF MECHANICAL ENGINEERING

SCHEME FOR B.TECH. (Mechanical Engineering)

(2021 admitted batch onwards)

First Year Credits (Cumulative) 45

THIRD SEMESTER:

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
MTH 231	Mathematics-3	3	1	-	4
HUM 251	Fundamentals of Entrepreneurship	3	-	-	3
ME 211	Engineering Thermodynamics	3	-	-	3
ME 212	Mechanics of Materials	3	-	-	3
ME 213	Material Science and Engineering	3	-	-	3
ME 214	Mechanical Drawing and CAD	3	-	-	3
ME 215	Heat Engines Lab.	-	-	2	1
ME 216	Mechanics of Materials Lab.	-	-	2	1
ME 217	Material Characterization Lab.	-	-	2	1
ME 218	Professional Practices	-	2	-	2
ME 212	Minor-1 "Mechanics of Materials"	3	-	-	3
Total Hours =27					24
Total Credits (Cumulative)					69
Additional Subject: - National Cadet Corps (NCC)					
NCC 251	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	
MTH 241	Mathematics-4	3	-	-	3
ME 252	Fundamentals of Design	2	1	-	3
ME 221	Machine Design-1	3	1	-	4
ME 222	Mechanisms of Machines	3	-	-	3
ME 223	Manufacturing Processes-1	3	-	-	3
ME 224	Industrial Engineering and Operations Research	3	-	-	3
ME 225	Mechanisms of Machines Lab.	-	-	2	1
ME 226	Manufacturing Techniques Lab-1	-	-	2	1
ME 227	Project Based Lab-1	-	-	2	1
ME 223	Minor-2 "Manufacturing Processes-1"	3	-	-	3*
Total Hours =25					22
Total Credits (Cumulative)					91
Additional Subject: - National Cadet Corps (NCC)					
NCC 252	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	
ME 351	Engineering Management	3	-	-	3
ME 311	Machine Design-2	3	1	-	4
ME 312	I. C. Engines and Gas Turbines	3	-	-	3
CE 333	Fluid Mechanics and Hydraulic Machines	3	1	-	4
EE 332	Electrical Machines	3	-	-	3
	Programme Elective-1(A)	3			3
CE 334	Fluid Mechanics Lab	-	-	2	1
EE 333	Electrical Machinery Lab	-	-	2	1
ME 313	I.C Engine Lab	-	-	2	1
ME 314	Internship/ Industrial Training	-	-	2	1
ME 312	Minor-3 "I.C. Engines and Gas Turbines"	3	-	-	3* (Extra)
Total Hours =28		18	2	8	24
Total Credits (Cumulative)					115
Additional Subject: - National Cadet Corps (NCC)					
NCC 351	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	
CS 352	Data Structures and Algorithm	3	1	-	4
ME 321	Heat and Mass Transfer	3	-	-	3
ME 322	Turbomachines	3	-	-	3
ME 323	Manufacturing Processes-2	3	-	-	3
	Programme Elective-2(A)	3	-	-	3
ME 324	Heat and Mass Transfer Lab.	-	-	2	1
ME 325	Turbomachines Lab.	-	-	2	1
ME 326	Manufacturing Techniques Lab-2	-	-	2	1
ME 327	Project-1	-	-	4	2
ME 321	Minor-4 "Heat and Mass Transfer"	3	-	-	3* (Extra)
Total Hours =26		15	1	10	21
Total Credits (Cumulative)					136
Additional Subject: - National Cadet Corps (NCC)					
NCC 352	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	
HUM 451	Engineering Economics and IPR	3	-	-	3
ME 411	Refrigeration and Air Conditioning	3	-	-	3
	Programme Elective-3(A)	3	-	-	3
	Programme Elective-4(A)	3	-	-	3
	Open Elective-1(C)	3	-	-	3
ME 412	Refrigeration and Air Conditioning Lab.	-	-	2	1
ME 413	Project Based Lab-2	-	-	4	2
ME 414	Industrial / Field Training	-	-	2	1
	Minor-5 "Any one Programme Elective from above"	3	-	-	3* (Extra)
Total Hours =23		15	-	8	19
Total Credits (Cumulative)					155

* (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-5(A)	3	-	-	3
	Programme Elective-6(A)	3	-	-	3
ME 421 / ME 422	Project-2/ Internship	-	-	16	8
ME 423	General Proficiency	-	-	-	1
	Minor-6 "Any one Programme Elective from above"	3	-	-	3* (Extra)
Total Hours =22		6	-	16	15
Total Credits (Cumulative)					170

* (Minor-6 Extra for other dept. not for parent)

LIST OF PROGRAMME ELECTIVES (GROUP A)

Group A Electives - Third Year		
S.No.	Course Code	Course Name
1.	ME 352	Gas Dynamics
2.	ME 353	Gas Turbines and Jet Propulsion
3.	ME 354	Automobile Engineering
4.	ME 355	Mechanical Measurements
5.	ME 356	CAM & Robotics
6.	ME 357	Materials Handling
7.	ME 358	Supply Chain Management
8.	ME 359	Statistical Quality Control
9.	ME 360	Mechatronics
10.	ME 361	Theory of Vibrations
11.	ME 362	Mechanics of Deformable Solids
12.	ME 363	Industrial Tribology

Group A Electives - Fourth Year		
S.No.	Course Code	Course Name
1.	ME 451	Energy Conversion Systems
2.	ME 452	Design of Heat Exchangers
3.	ME 453	Solar Energy
4.	ME 454	Non-Conventional Energy Sources
5.	ME 455	Energy Audit Carbon Sequestration
6.	ME 456	Computational Fluid Dynamics and Heat Transfer
7.	ME 457	Wind Energy Technology
8.	ME 458	Additive Manufacturing Technologies
9.	ME 459	Advanced Production Engineering
10.	ME 460	Nano Manufacturing
11.	ME 461	Lean Manufacturing
12.	ME 462	Composite Materials
13.	ME 463	Smart Materials
14.	ME 464	Facility Management and Layout Planning
15.	ME 465	Material Management
16.	ME 466	Organizational Behaviour
17.	ME 467	Total Quality Management
18.	ME 468	Marketing Management
19.	ME 469	Product Design and Development
20.	ME 470	Theory of Elasticity and Plasticity
21.	ME 471	Fracture Mechanics and Failure Analysis
22.	ME 472	Mechanics of Composite Materials
23.	ME 473	Computational Methods
24.	ME 474	Analysis and Design of Mechanical Control System
25.	ME 475	Advance Machine Design
26.	ME 476	Engineering Optimization
27.	ME 477	Maintenance Engineering and Management
28.	ME 478	Advanced Operations Research
29.	ME 479	Service Operation Management