

Maulana Azad National Institute of Technology, Bhopal – 462003
Mechanical Engineering Department

M Tech in Thermal Engineering

SCHEME OF STUDY (January 2021)

First Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
MTH 101 TH	Advanced Mathematics	3	-	-	3
TH 102	Advanced Thermodynamics	3	-	-	3
TH 103	Advanced Heat & Mass Transfer	3	-	-	3
TH 104	Fluid Flow & Gas Dynamics	3	-	-	3
	Elective-1 (A)	3	-	-	3
	Elective-2 (B)	3	-	-	3
TH 105	Thermal Engg. Lab-I	-	-	2	1
TH 106	Seminar-I	-	-	2	1
TH 107	Communication skill NPTEL/MOOC/ Humanities Deptt.	2	-	-	2
Total Hours: 24 Total Credits: 22		Total Semester Credits			22

Second Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
TH 201	Power Generation System	3	-	-	3
TH 202	Thermal Environmental Engg.	3	-	-	3
TH 203	Theory and Design of Heat Exchangers	3	-	-	3
	Elective-3 (A)	3	-	-	3
	Elective-4 (A)	3	-	-	3
	Elective-5 (C)	3	-	-	3
TH 204	Thermal Engg. Lab-II	-	-	2	1
TH 205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
TH 206	Seminar-II	-	-	2	1
Total Hours: 24 Total Credits: 44		Total Semester Credits			22

Third Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
TH 301	Project Phase-I	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subject	Schemes of studies periods per week			Total Credits
		L	T	P	
TH 401	Project Phase-II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

List of Electives A		List of Electives B	
TH501	Renewable Energy	SV104	Finite Element Method
TH502	Refrigeration System & Component Design	IT103	Maintenance Strategies and Policies
TH503	Computational Fluid Dynamics	ID103	Product Planning and Design for Market
TH504	Theory and Design of Gas Turbines	AM102	Material Technology
TH505	Theory and Design of Turbo machines	IT102	Fundamentals of Tribology
TH506	Design and Simulation of IC Engines	ID508	Advanced Operation Research
TH507	Advanced Fluid Mechanics	IT505	Industrial Maintenance & Management
TH508	Micro-Fluidics	AM507	Product Design & Material Selection
TH509	Convective Heat & Mass Transfer	SV517	Product Design & Development
TH510	Instrumentation & Control	ID511	Additive Manufacturing
TH511	Entrepreneurship & Skill Development	List of Electives C	
TH512	Design of Thermal Systems	EN202	Solid Waste Management
TH513	Thermal Power Plant Engg.	GE203	Reinforced Soil Structures
		GI201	Basic Concepts of GIS
		HY201	Characteristics of Hydraulic Machines
		ST203	Theory of Plates & Shells
		TR201	Highway Construction & Maintenance
		WR203	Ground Water Engineering
		PS201	Modern Control Systems
		ED202	Advanced Control Systems
		VE202	VLSI Technology
		DC203	Digital Image Processing
		AC203	Optimization Techniques
		AI202	Deep Learning
		CN203	Graph Theory & Network Algorithm
		IS201	Applied Cryptography
		MS202	Deformation Behavior of Materials
		CH203	Industrial Safety & Hazard Management
		HS1204	Housing Finance
		UP1203	Infrastructure Planning
		NT201	Nano Structures Characterization Techniques
		BI203	Optimization Techniques & Graph
		CSB201	Mathematical Modeling & Simulation of Biological Systems
		RE202	Solar Energy Systems
		ES202	Energy Management in Buildings
		BIO201	Cheminformatics & Drug Designing

Group A: Program Electives.

Group B: Departmental Electives.

Group C: Open Electives.

{It may also be opted as NPTEL Course after approval from Chairman Senate}