



**Scheme of Instruction & Syllabi  
Of  
Master of Technology  
In  
Mechanical Engineering  
(Specialization in Thermal Engineering)**

**I and II Year**  
(Effective from 2021-22)

**INVERTIS UNIVERSITY, BAREILLY  
M. TECH (MECHANICAL ENGINEERING)  
(SPECIALIZATION IN PRODUCTION ENGINEERING)  
EFFECTIVE FROM (2021-22)**

**INVERTIS UNIVERSITY, BAREILLY**  
**YEAR I, SEMESTER-I**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	MTE-101	Simulation, Modeling & Analysis	3	1	0	20	10	30	70	100	4
2	MTE-102	Design Of Experiments	3	1	0	20	10	30	70	100	4
3	MTE-103	Advanced Fluid Mechanics	3	1	0	20	10	30	70	100	4
4	MTE-104	Advanced Thermal Engineering	3	1	0	20	10	30	70	100	4
5	MTE-105	Experimental Techniques In Fluid Flow & Heat Transfer	3	1	0	20	10	30	70	100	4
6	MTE-151	Seminar 1	0	4	0	-	-	50	-	50	2
<b>Total</b>			15	9	0	-	-	-	-	550	22

**YEAR I, SEMESTER-II**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	MTE-201	Mathematical Modeling and Optimization	3	1	0	20	10	30	70	100	4
2	MTE-202	Computational Fluid Dynamics	3	1	0	20	10	30	70	100	4
3	MTE-203	Experimental Methods in Thermal Engineering	3	1	0	20	10	30	70	100	4
4	MDE-20?	Department Elective	3	1	0	20	10	30	70	100	4
5	MOE-20?	Open Elective 1	3	1	0	20	10	30	70	100	4
6	MTE-251	Seminar 2	0	4	0	-	-	50	-	50	2
<b>Total</b>			15	9	0	-	-	-	-	550	22

**YEAR II, SEMESTER-III**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	MOE-30?	Open Elective 2	3	1	0	20	10	30	70	100	4
2	MOE-33?	Open Elective 3	3	1	0	20	10	30	70	100	4
3	MTE -351	Seminar 3	0	4	0	-	-	50	-	50	2
4	MTE-352	Preliminary Thesis	0	16	0	-	-	200	-	200	8
<b>Total</b>			6	22	0	-	-	-	-	450	18

**YEAR II, SEMESTER-IV**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				SUBJECT TOTAL	Credits
						SESSIONAL EXAM.			E-SEM		
			L	T	P	CT	TA	TOTAL			
1	MTE-451	THESIS	0	16	0	-	-	100	300	400	16
<b>Total</b>			0	16	0	-	-	-	-	400	16

### **List of Department Electives-I (MDE-20?)**

1. MDE 201 Advanced Finite Element Analysis
2. MDE 202 Nano Technology
3. MDE 203 Optimization Techniques & Design of Experiments
4. MDE 204 Experimental Techniques in Fluid Flow & Heat Transfer
5. MDE 205 Refrigeration & air conditioning
6. MDE 206 Convective Heat Transfer
7. MDE 207 Product Design and Development
8. MDE208 Rapid Prototyping

### **List of Open Electives-I (MOE-20?)**

1. MOE 201 Materials management
2. MOE202 Quality Engineering
3. MOE203 Renewable Energy Systems
4. MOE204 Modeling Simulation & Optimization
5. MOE205 Advanced composite materials
6. MOE206 Theory of vibration
7. MOE207 Advanced Fluid Mechanics
8. MOE208 Gas Dynamics
9. MOE209 Solar Energy & technology
10. MOE210 Advanced Casting & Welding Technology
11. MOE211 Hydraulic and pneumatics for production

### **List of Open Electives-II (MOE-30?)**

1. MOE 301 CNC system and programming
2. MOE 302 Production Technology
3. MOE 303 Hydraulics and pneumatics for production
4. MOE 304 Thermal and Nuclear Power Plants
5. MOE 305 Thermal Measurements and Process Controls
6. MOE 306 Combustion Technology
7. MOE 307 Optimization Techniques
8. MOE 308 Environmental Pollution & Its Control
9. MOE 309 Advanced Power Plant Engineering
10. MOE 310 Robotics

11. MOE311 Mechatronics

**List of Open Electives-III (MOE-33?)**

1. MOE330 soft computing and Techniques
2. MOE331 cryogenic Engineering
3. MOE332 Turbo Machines
4. MOE333 Integrated Production Control & System
5. MOE334 Applied Operations Research
6. MOE335 Hybrid Manufacturing
7. MOE336 Additive Manufacturing And Tooling
8. MOE337 Advanced Internal Combustion Engineering