



**DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING  
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: **37**    **M. Tech. (Thermal Engineering)**  
 Department: **ME**    **Mechanical and Industrial Engineering**  
 Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Semester- I (Autumn)</b>														
1.	MIN-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
<b>Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.</b>														
<b>Semester-II (Spring)</b>														
1.	MIN-701B	Dissertation Stage-II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

<b>Summary</b>				
Semester	1	2	3	4
<b>Semester-wise Total Credits</b>	<b>20</b>	<b>18</b>	<b>12</b>	<b>18</b>
<b>Total Credits</b>	<b>68</b>			

**Program Elective Courses (Thermal Engineering)**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	MIN-523	Gas Turbines & Compressors	PEC	4	3	1	0	3	--	25	--	25	50	--
2.	MIN-524	Two Phase Flow & Heat Transfer	PEC	4	3	1	0	3	--	25	--	25	50	--
3.	MIN-525	Solar Energy	PEC	4	3	1	2/2	3	--	20	20	20	40	--
4.	MIN-526	Advanced Gas Dynamics	PEC	4	3	1	0	3	--	25	--	25	50	--
5.	MIN-528	Boundary Layer Theory	PEC	4	3	1	2/2	3	--	20	20	20	40	--
6.	MIN-529	Turbulent Flow	PEC	4	3	1	2/2	3	--	20	20	20	40	--
7.	MIN-530	Cold Preservation of Food	PEC	4	3	1	0	3	--	25	--	25	50	--
8.	MIN-531	Hydro-dynamic Machines	PEC	4	3	1	2/2	3	--	20	20	20	40	--
9.	MIN-532	Renewable Energy Systems	PEC	4	3	1	2/2	3	--	20	20	20	40	--
10.	MIN-533	Refrigeration & Air-Conditioning System Design	PEC	4	3	1	2/2	3	--	20	20	20	40	--
11.	MIN-534	Air Conditioning and Ventilation	PEC	4	3	1	2/2	3	--	20	20	20	40	--
12.	MIN-535	Cryogenic Systems	PEC	4	3	1	0	3	--	25	--	25	50	--
13.	MIN-536	Convective Heat and Mass Transfer	PEC	4	3	1	0	3	--	25	--	25	50	--
14.	MIN-537	I. C. Engines	PEC	4	3	1	2/2	3	--	20	20	20	40	--
15.	MIN-538	I. C. Engine Combustion Processes Modeling	PEC	4	3	1	2/2	3	--	20	20	20	40	--
16.	MIN-539	Micro and Nano Scale Thermal Engineering	PEC	4	3	1	0	3	--	25	--	25	50	--
17.	MIN-540	Combustion	PEC	4	3	1	2/2	3	--	20	20	20	40	--
18.	MIN-541	Bio-Fluid Mechanics	PEC	4	3	1	0	3	--	25	--	25	50	--
19.	MIN-542	Energy Management	PEC	4	3	1	2/2	3	--	20	20	20	40	--
20.	MIN-543	Fluid Power Engineering	PEC	4	3	1	0	3	--	25	--	25	50	--
21.	MIN-544	Design of Heat Exchangers	PEC	4	3	1	0	3	--	25	--	25	50	--
22.	MIN-545	Fuel Cells	PEC	4	3	1	2/2	3	--	20	20	20	40	--
23.	MIN-500	Instrumentation and Experimental Methods	PEC	4	3	1	2/2	3	--	20	20	20	40	--
24.	MIN-603	Finite Element Method for Thermal Engineering	PEC	4	3	1	0	3	--	25	--	25	50	--
25.	MIN-604	Fire Dynamics	PEC	4	3	1	2/2	3	--	20	20	20	40	--