

Matoshri College of Engineering and Research Centre (Autonomous)														
Curriculum Structure for Master of Technology(M.Tech) in Heat Power Engineering (wef Academic Year: 2025-26)														
Table No 6: First Year Master of Technology (F.Y. MTech) (2025 Pattern)														
Semester I														
Courses				Teaching Scheme Hrs/Week			Examination and Marks (% of Total Curriculum and Marks)				Credit			
							In_Sem Exam (40%)		End_Sem Exam (60%)	Marks				
Course Code	Course Type	Title of Course	Exam Head	Lect	TUT	PR	CAT	CCE	ESE	Total	TH	TUT	PR	Total
25P1401	MDC	Advanced Fluid Mechanics	TH	04	-	-	20	20	60	100	04	-	-	04
25P1402	PCC	Renewable Sources of Energy	TH	04	-	-	20	20	60	100	04	-	-	04
25P1403	PCC	Research Methodology	TH	02	-	-	20	20	60	100	02	-	-	02
25P1404	PCC	Advanced Thermodynamics and Combustion	TH	04	-	-	20	20	60	100	04	-	-	04
25P1405	PEC	Program Elective Course-1	TH	04	-	-	20	20	60	100	04	-	-	04
25P1406	PCCL	Thermal Engineering Lab-I	PR	-	-	04	20		30	50	-	-	02	02
25P1407	PECL	Program Elective Course-1 Lab	PR	-	-	02	20		30	50	-	-	01	01
25P1408	PMFG	Study of Indian Constitution	SEMI	-	01	-	20		30	50	-	01		01
NCA1401		Audit Course_1*	-	-	-	-	-		-	-	-	-	-	-
Total				18	01	06	260		390	650	18	01	03	22
Total Hours/ Week				25			650				22			

Elective-1	
Course Code	Course Name
25P1405-A	Measurements and Controls
25P1405-B	Advanced Energy Storage Technologies
25P1405-C	Advanced Internal Combustion Engines
25P1405-D	Hybrid and Electric Vehicles
25P1405-E	Generic Elective (GE) **

****GE:** An elective course chosen generally from an unrelated discipline/subject, with an intention to seek. A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa.

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Table No 7: First Year Master of Technology (F.Y. MTech)(2025 Pattern)														
Semester II														
Courses				Teaching Scheme Hrs/Week			Examination and Marks (% of Total Curriculum and Marks)				Credit			
							In Sem Exam. (40%)		End Sem. Exam. (60%)	Marks				
Course Code	Course Type	Title of Course	Exam Head	Lect	TUT	PR	CAT	CCE	ESE	Total	TH	TUT	PR	Total
25P1409	MDC	MOOC_1	TH	02	-	-	10	10	30	50	02	-	-	02
25P1410	PCC	Advanced Heat Transfer	TH	04	-	-	20	20	60	100	04	-	-	04
25P1411	PCC	Design of Heat Exchanger	TH	04	-	-	20	20	60	100	04	-	-	04
25P1412	PEC	Program Elective Course-2	TH	04	-	-	20	20	60	100	04	-	-	04
25P1413	PCCL	Thermal Engineering Lab-II	PR	-	-	04	40		60	100	-		02	02
25P1414	PECL	Program Elective Course-2 Lab	PR	-	-	04	40		60	100	-	-	02	02
25P1415	PMFG	Project and Finance Management	SEMI	-	01	02	20		30	50	-	01	01	02
25P1416	AEC	Human Rights	TW	-	02	-	20		30	50	-	02	-	02
NCA1402		Audit Course_2*	-	-	-	-	-		-	-	-	-	-	-
Total				14	03	10	260		390	650	16	01	05	22
Total Hours/ Week				27			650				22			

Elective-2	
Course Code	Course Name
25P1412-A	Battery Thermal Management System
25P1412-B	Environmental Engineering And Pollution Control
25P1412-C	Air Conditioning Systems
25P1412-D	Alternate Fuels For IC Engines
25P1412-E	Generic Elective (GE)**

MOOC_1: NPTEL Courses under SWAYAM for AY 2025-26	
Course Code	Course Name
25P1409-A	Energy Resources and conversion processes
25P1409-B	Cryogenic Engineering
25P1409-C	Conduction And Convection Heat Transfer
25P1409-D	Two Phase Flow And Heat Transfer

Matoshri College of Engineering and Research Centre (Autonomous) Curriculum Structure for Master of Technology(M.Tech) in Heat Power Engineering (wef Academic Year: 2025-26)														
Table No 8: Second Year Master of Technology (S.Y. MTech)(2025 Pattern) Semester III														
Courses				Teaching Scheme Hrs/Week			Examination and Marks (% of Total Curriculum and Marks)				Credit			
							In_Sem Exam (40%)		End_Sem Exam (60%)	Marks				
Course Code	Course Type	Title of Course	Exam Head	Lect	TUT	PR	CCE	CCE	ESE	Total	TH	TUT	PR	Total
25P1417	PCC	MOOC_2/ Cyber Security	TH	04	-	-	20	20	60	100	04	-	-	04
25P1418	PCC	Computational Fluid Dynamics	TH	04	-	-	20	20	60	100	04	-	-	04
25P1419	PEC	Program Elective Course -3	TH	04	-	-	20	20	60	100	04	-	-	04
25P1420	PCCL	Thermal Engineering Lab-III	PR	-	-	02	20		30	50	-	-	01	01
25P1421	PMFG	Company Law and Corporate Governance	SEMI	-	01	-	20		30	50	-	01	-	01
25P1422	PROJ	Dissertation Stage-I	PROJ	-	-	12	40	40	120	200	-	-	06	06
NCA1403	-	Audit Course_3*	-	-	-	-	-	-	-	-	-	-	-	-
Total				12	01	14	240		360		12	01	07	
Total Hours/ Week				27			600			600	20			20

Elective-3	
Course Code	Course Name
25P1419-A	Cogeneration and Waste Heat Recovery Systems
25P1419-B	Gas Turbines and Jet Propulsion
25P1419-C	Cryogenic Engineering
25P1419-D	Advanced Power Plant Engineering
25P1419-E	Generic Elective (GE) **

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Table No 9: Second Year Master of Technology (S.Y. MTech)(2025 Pattern)															
Semester IV															
Courses				Teaching Scheme Hrs/Week			Examination and Marks (% of Total Curriculum and Marks)				Credit				
							In_Sem Exam (40%)		End_Sem Exam (60%)	Marks					
Course Code	Course Type	Title of Course	Exam Head	Lect	TUT	PR	CCE	CCE	ESE	Total	TH	TUT	PR	Total	
25P1423	INT	Internship\$	TW	-	-	\$	40	40	120	200	-	-	08	08	
25P1424	PCC	MOOC_3	TH	02	-	-	20	20	60	100	02	-	-	02	
25P1425	SEC	Skill Development in Thermal Systems/MOOC	PR	-	01	02	10	10	30	50	-	01	01	02	
25P1426	PROJ	Dissertation Stage-II	PROJ	-	-	16	50	50	150	250	-	-	08	08	
NCA1404	-	Audit Course_4*	-	-	-	-	-	-	-	-	-	-	-	-	
Total				02	01	18	240		360	600	02	01	17	20	
Total Hours/ Week				21			600				20				

MOOC_3: NPTEL Courses under SWAYAM for AY 2026-27	
Course Code	Course Name
25P1424-A	Engineering Aspects of Biofuels
25P1424-B	Convective Heat Transfer
25P1424-C	Aircraft Propulsion
25P1424-D	Advanced Dynamics

\$ Internship:

- Internship corresponding to major courses is to be completed after semester III Examinations and before commencement of semester IV of at least 180 hours/ 6 weeks; and it is to be assessed and evaluated in semester IV.
- It is almost imperative that the commencement of Semester IV needs to be approx. 3 weeks beyond the schedule.

Audit Courses

Course Code	Basket / Options for Audit Course_1* (NCA1401)
NCA1401-A	Business and Sustainable Development
NCA1401-B	Engineering Economics

Course Code	Basket / Options for Audit Course_2* (NCA1402)
NCA1402-A	Digital and Social Media Marketing
NCA1402-B	Leadership and Personality Development

Course Code	Basket / Options for Audit Course_3* (NCA1403)
NCA1403-A	Professional Communication & Technical Writing
NCA1403-B	Management Information System

Course Code	Basket / Options for Audit Course_4* (NCA1404)
NCA1404-A	Entrepreneurship & Innovation in Technology
NCA1404-B	Patent Search & Analysis

J. Bhangale

Prof. Dr. Jayant H. Bhangale
Chairman BOS & Head- Mechanical Engineering

