



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)



**Approved by AICTE, Recognized by UGC & Affiliated to Anna University
Accredited by NBA-AICTE, NAAC-UGC with 'A++' Grade**

Saravanampatti , Coimbatore -641035

**CURRICULA AND SYLLABI
REGULATION 2023
CHOICE BASED CREDIT SYSTEM**

**DEPARTMENT OF MECHANICAL
ENGINEERING**

M.E – THERMAL ENGINEERING

VISION

The Department of Thermal Engineering endeavors to be a recognized knowledge center for quality education and research by producing competent and creative engineers to meet the global challenges

MISSION

- Impart knowledge by providing effective means of learning and facilitate personal commitment for productive careers globally.
- To provide students and faculty members with opportunities for creative thinking, interpretation, application and knowledge dissemination.
- To inculcate life-long learning, human values and entrepreneurship culture in the fields of engineering design, thermal, manufacturing, automation etc.
- To link with industries and institutions for mutual benefit

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

1. To prepare students to excel in research or to succeed in Thermal engineering profession through global, rigorous post graduate education.
2. To provide students with a solid foundation in mathematical, scientific and engineering fundamentals required to solve thermal engineering problems.
3. To train students with good scientific and engineering knowledge so as to comprehend, analyze, design and create novel products and solutions for the real life problems.
4. To inculcate students in professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach and an ability to relate thermal engineering issues to broader social context.
5. To provide student with an academic environment aware of excellence, leadership, written ethical codes and guidelines and the life-long learning needed for a successful professional career.

PROGRAMME OUTCOMES

1. The ability to independently carry out research/investigation and development work to solve practical problems.
2. The ability to write and present a substantial technical report/document
3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
4. Graduates will demonstrate knowledge of professional and ethical responsibilities.
5. Graduates will develop confidence for self-education and ability for life-long learning.

PROGRAMME SPECIFIC OBJECTIVES

PSO 1: Enable students to get in-depth knowledge in the specialization of Production and Industrial Engineering or Mechanical Engineering Design or Thermal Engineering and able to solve complex problems in the field of Mechanical Engineering.

PSO 2: Identify research areas and provide solutions to complex engineering problems for the advancement of society.

PSO 3: Enable the students for premium National/International jobs, pursue research career, entrepreneurship and to become responsible global citizens.



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COIMBATORE-35

DEPARTMENT OF MECHANICAL ENGINEERING

R 2023 –CURRICULUM& SYLLABUS



M. E. THERMAL ENGINEERING

SEMESTER I											
S No.	Course Code	Course	L	T	P	J	CH/W	Credit	Int./Ext	Category	Pre-Requisites
Theory Courses											
1.	23MAT606	Advanced Mathematics for Thermal Engineers	3	0	0	0	3	3	50/50	PCC	Engineering Mathematics
2.	23TET601	Advanced Thermodynamics	3	0	0	0	3	3	50/50	PCC	Thermodynamics
3.	23TET602	Advanced Fluid Mechanics	3	0	0	0	3	3	50/50	PCC	Fluid Mechanics
4.	23TET603	Advanced IC Engines	3	0	0	0	3	3	50/50	PCC	
5.	23TET604	Research Design and IPR	3	0	0	0	3	3	50/50	PCC	
6.		Professional Elective I	3	0	0	0	3	3	50/50	PEC	
7.		Audit Course - I	2	0	0	0	2	0	-	EEC	
Theory Integrated Practical Courses											
8.	23GEB601	Design Thinking	1	0	0	4	5	3	100/0	EEC	
Practical Course											
9.	23TEP601	Thermal Engineering Laboratory	0	0	4	0	4	2	60/40	PCC	
Total			21	0	4	4	29	23			

SEMESTER II

S.No.	Course Code	Course	L	T	P	J	CH/W	Credit	Int./Ext	Category	Pre-Requisites
Theory Courses											
1.	23TET605	Advanced Heat Transfer	3	0	0	0	3	3	50/50	PCC	Heat and Mass Transfer
2.	23TET606	Steam Engineering	3	0	0	0	3	3	50/50	PCC	Thermal Engineering
3.	23TET607	Computational Fluid Dynamics	3	0	0	0	3	3	50/50	PCC	
4.	23TET608	Cogeneration and Waste Heat Recovery Systems	3	0	0	0	3	3	50/50	PCC	Power Plant Engineering
5.		Professional Elective II	3	0	0	0	3	3	50/50	PEC	
6.		Professional Elective III	3	0	0	0	3	3	50/50	PEC	
7.		Career Course – I	2	0	0	0	2	2	100/0	EEC	
8.		Audit Course - II	2	0	0	0	2	0	-	EEC	
Practical Course											
9.	23TEP602	Computational Fluid Dynamics Laboratory	0	0	2	0	2	1	60/40	PCC	
		Total	22	0	2	0	24	21			

SEMESTER III

S No.	Course Code	Course	L	T	P	J	CH/W	Credit	Int./Ext	Category	Pre-Requisites
Theory Courses											
1		Professional Elective IV	3	0	0	0	3	3	50/50	PEC	
2		Open Elective	3	0	0	0	3	3	50/50	OE	
3		Career Course- II	2	0	0	0	2	2	100/0	EEC	
Practical courses											
4	23TEP701	Project Work – Phase I	0	0	0	16	16	8	60/40	EEC	
		Total	8	0	0	16	24	16			

SEMESTER IV

S No.	Course Code	Course	L	T	P	J	CH/W	Credit	Int/Ext	Category	Pre-Requisites
Practical courses											
1	23TEP702	Project Work – Phase II	0	0	0	24	24	12	60/40	EEC	23TEP701
		Total	0	0	0	24	24	12			

PROFESSIONAL ELECTIVE I

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23TEE610	Nuclear Engineering	3/0/0/0	3	3
2	23TEE611	Energy Conservation and Management	3/0/0/0	3	3
3	23TEE612	Fuels and Combustion	3/0/0/0	3	3
4	23TEE613	Hybrid Energy Technology	3/0/0/0	3	3
5	23TEE614	High Temperature Materials	3/0/0/0	3	3
6	23TEE615	Electronic Engine Management Systems	3/0/0/0	3	3

PROFESSIONAL ELECTIVE II

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23TEE616	Design of Refrigeration Equipment	3/0/0/0	3	3
2	23TEE617	Gas Turbines	3/0/0/0	3	3
3	23TEE618	Advanced Thermal Storage Technologies	3/0/0/0	3	3
4	23TEE619	Refrigeration Machinery and Components	3/0/0/0	3	3
5	23TEE620	Theory of Heat Pipes	3/0/0/0	3	3
6	23TEE621	Battery Thermal Management Systems	3/0/0/0	3	3

PROFESSIONAL ELECTIVE III

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23TEE622	Cryogenic Engineering	3/0/0/0	3	3
2	23TEE623	Fuel Cell Technology	3/0/0/0	3	3
3	23TEE624	Design of Heat Exchangers	3/0/0/0	3	3
4	23TEE625	Design of Fluidized Bed Systems	3/0/0/0	3	3
5	23TEE626	Heat and mass transfer in biological systems	3/0/0/0	3	3

PROFESSIONAL ELECTIVE IV

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23TEE701	Design of Solar and Wind System	3/0/0/0	3	3
2	23TEE702	Finite Element Method in Heat Transfer Analysis	3/0/0/0	3	3
3	23TEE703	Manufacturing and Testing of IC Engine Components	3/0/0/0	3	3
4	23TEE704	Food Processing, Preservation and transport	3/0/0/0	3	3
5	23TEE705	Convective Heat Transfer	3/0/0/0	3	3

OPEN ELECTIVES COURSES OFFERED TO OTHER PG PROGRAMMES

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23TEO701	Fire and Safety Engineering	3/0/0/0	3	3
2	23TEO702	Energy and Environment	3/0/0/0	3	3
3	23TEO703	Logistics and Supply Chain Management	3/0/0/0	3	3

CAREER COURSE

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23GET601	Professional Development	2/0/0/0	2	2
2	23GET602	Quality Assurance & Accreditation in Engineering Education	2/0/0/0	2	2
3	23GET603	Holistic Education	2/0/0/0	2	2

AUDIT COURSE

Sl. No	Course Code	Course	L/T/P/J	CH/W	Credits
1	23GEA601	English for Research Paper Writing	2/0/0/0	2	0

2	23GEA602	Disaster Management	2/0/0/0	2	0
3	23GEA603	Value Education	2/0/0/0	2	0
4	23SEA714	Constitution of India	2/0/0/0	2	0
5	23GEA605	Pedagogy Studies	2/0/0/0	2	0

S.No.	SUBJECT AREA	CREDITS PER SEMESTER				TOTAL CREDITS
		I	II	III	IV	
1	PCC	17	13			30
2	PEC	3	6	3		12
3	OE			3		3
4	EEC	3	2	10	12	27
		23	21	16	12	72

