Pimpri Chinchwad Education Trust's
Pimpri Chinchwad College of Engineering
Sector No. 26, Pradhikaran,
Nigdi, Pune – 411 044

ISO 9001 Certified

COURSE OUTLINE

Department: Mechanical Engineering A.Y.:2022-23 Sem-II Date: 25 Feb 2023
Class: SY

Name of the Course: **Applied Thermodynamics**

Relevance of the course:

Applied Thermodynamics establishes connect between engineering thermodynamics fundamentals and application in thermal engineering domain. It lays the foundation of Thermal Engineering along with fluid mechanics and heat transfer. This course covers various applications like Air compressors, steam generators, Vapour and Gas power cycles, compressible fluid application and combustion.

Course Outcomes:

CO No	CO Statement	No. of Lectures Planned	Set Target 22-23 SEM II	Content Delivery method	Assessment tools Planned
1.	Student will be able to **Analyze** the performance of Reciprocating Air Compressor	7	75%	Presentation, Lecture with Interaction, Quiz	Class quizzes, MTE, ETE
2.	Student will be able to **Evaluate** the performance parameters of boiler	7	75%	Presentation, Lecture with Interaction, Quiz	Class quizzes, MTE, ETE
3.	Student will be able to **Analyze** the performance of various vapour Thermodynamic cycles	6	75%	Presentation, Lecture with Interaction, Quiz	Class quizzes, MTE, ETE
4.	Student will be able to **Analyze** the performance of various Gas Thermodynamic cycles	6	75%	Presentation, Lecture with Interaction, Quiz	Class quizzes, Asssignment2, ETE
5.	Student will be able to **Analyze** steady one dimensional isentropic compressible fluid flow	5	75%	Presentation, Lecture with Interaction, Quiz	Class quizzes, ETE Asssignment2
6.	Student will be able to **Estimate** the Actual and Stoichiometric air fuel ratio of various fuels.	5	75%	Presentation, Lecture with Interaction, Quiz	Class quizzes, ETE

CO-PO Mapping:

CO No	CO Statement	PO Mapping												PSO			Blooms Level
		1	2	3	4	5	6	7	8	9	10	11	12	I	II	III	L
1	Analyze the performance of Reciprocating Air Compressor	3	3	2										3			4
2	Evaluate the performance parameters of boiler	3	3	2										3			5
3	Analyze the performance of various vapor Thermodynamic cycles	3	3	2										3			4
4	Analyze the performance of various Gas Thermodynamic cycles	3	3	2										3	2		4
5	Analyze steady one dimensional isentropic compressible fluid flow	3	3	2		3								3			4
6	Estimate the Actual and Stoichiometric air fuel ratio of various fuels.	3	3	2										3			5

Assignment:

Assignment Planned	CO Mapped	Tentative schedule
Assignment 2: Hands on application of Engineering equation solver	CO 4 and CO5	April Last Week

MOOC Courses: Applied Thermodynamics by Prof. Niranjan Sahoo and Prof. Prarnab Mondal (IITG) available on NPTEL

		
Course Faculty SY(C) Mr. N. V. Gaikwad	Course Faculty SY(B) Mr. U. I .Shaikh	Course Faculty S.Y. (A) Dr. U. G. Potdar
Course Coordinator Applied Thermodynamics	Module Coordinator (Thermal & Fluids)	