

Course Type	Course Code	Name of Course	L	T	P	Credit
DSC4	NMEC104	Thermodynamics Lab	0	0	2	1

**Course Objective**

This course deals with understanding, verification and practical applications of basic principles of thermodynamics.

**Learning Outcomes**

On successful completion of this course, students will learn:

- Use of basic equipment in thermodynamics
- Verification of some basic principles of Thermodynamics.

Unit No.	Topics to be Covered	Laboratory	Learning Outcome
1	Determination of Calorific value of solid/liquid fuel	1	Understanding the use of a calorimeter to determine the calorific value of fuels.
2	Determination of Mechanical Equivalence of Heat	1	Understanding the use of Joule's apparatus to determine mechanical equivalence of heat.
3	Determination of Dryness fraction of steam	1	Understanding the use of separating and throttling calorimeter to determine the quality or dryness fraction of steam.
4	To determine the isentropic efficiency of steam turbine	1	Understanding the components, performance and losses in a steam turbine
5	To study the construction and operation of a 4-stroke petrol engine	1	Understanding the construction, components and operations of 4-stroke petrol engines
6	To study the construction and operation of a 4-stroke Diesel engine	1	Understanding the construction, components and operations of 4-stroke petrol engines
7	Performance Study of 4-Stroke Petrol Engine	1	Understanding the performance characteristics of a 4-stroke petrol engine
8	Performance Study of 4-Stroke Diesel Engine	1	Understanding the performance characteristics of a 4-stroke Diesel engine
9	Determination of COP and cooling capacity of a simple vapour compression refrigeration system	1	Understanding the construction and performance of vapour compression refrigeration system
10	Determination of COP and cooling capacity of a vapour absorption refrigeration system	1	Understanding the construction and performance of vapour absorption refrigeration system

**Text Books / References:**

1. Engineering Thermodynamics: P. K. Nag, McGraw Hill Education (India) Pvt Ltd, New Delhi.
2. Refrigeration and Air-conditioning: C. P. Arora
3. Internal Combustion Engines: V. Ganesan

*Aman Kaur*