Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NMEC531	Thermo-Fluids Lab – III	0	0	3	1.5

Course Objective

This is introductory laboratory course on Thermo-fluid Labs. This course aims to provide fundamentals concepts and their application of various thermo-fluid labs. They will be learning about handling and analyzing the performance of various thermo-fluid labs.

Learning Outcomes

Upon successful completion of this course, students will:

- have a broad understanding of various thermo-fluid labs.
- have analytical and mathematical tools to handle complex problems.
- be able to provide some basic handling and analyzing the performance of various thermo-fluid labs.

Unit No.	Topics to be Covered Lecture	Lab Hours	Learning Outcomes
1	Experiment on Summer Air conditioning	3	Students will learn about handling and studying the performance of Summer Air conditioning.
2.	Experiment on Absorption refrigeration system	3	Students will learn about handling and studying the performance of Absorption refrigeration system.
3.	Experiment on Vortex tube refrigeration system	3	This module will enable the students to handle and study the performance of Vortex tube refrigeration system.
4.	Measurements of Advancing and receding contact angle of a drop	3	This module will enable the students to understand about how to measure the advancing and receding contact angle of a drop.
5.	Spray visualization and cone angle measurements for various pressure ratios	3	This module is about learning the visualization of a spray.
6.	Basic spray noise measurements for various pressure ratios	3	Students will learn about learning the noise measurements for a spray.
7.	Flame characterization for various fuel flow rates	3	Students will learn about how to characterize a flame.
8.	Flame noise measurements for various A/F ratios	3	Students will learn about learning the noise measurements for various A/F of a flame.
9.	Experiment on Jet noise and airfoil noise	3	Students will learn about jet and airfoil noise.
10.	Experiment on propeller noise	3	Students will learn about the measurement of a propeller noise.
11.	Spray noise measurements for various pressure ratios	3	Students will learn about learning the noise measurements for various pressure ratios of a spray.
12.	Report submission and evaluation	3	Students will submit the lab reports and appear for a test/viva-voce.
	Total	42	

Text Books:

1. Adrian Bejan, Convective heat transfer, John Wiley & Sons, 4th Edition, 2013.

2. W. M. Kays and M. E. Crawford, Convective heat and mass transfer, McGraw-Hill, 4th Edition, 2017.

3. J. P. Holman, Experimental Methods for Engineers, McGraw-Hill Science Engineering; 8th Edition, 2011.

References:

1. Louis Bermister, Convective heat transfer, 2nd Edition, 1993.

2. Latif M. Jiji., "Heat Convection", Springer, 3rd Edition, 2009.