Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly West Bengal University of Technology)

SYLLABUS FOR BACHELOR OF TECHNOLOGY IN MECHANICAL ENGINEERING

(Effective from academic session 2018-19)

Subject Code : PC-ME591	**Category:** Professional Core Courses
Subject Name : Mechanical Engineering Laboratory (Thermal) I	**Semester** : Fifth
L-T-P : 0-0-3	**Credit: 1.5**
Pre-Requisites: Engineering Thermodynamics and Fluid Mechanics and Fluid Machines	

Course Objectives:

To understand the principles and performance characteristics of flow and thermal devices
To know about the measurement of the fluid properties

Course Contents (12 experiments/ studies/ problems are to perform from the list given below or relevant others):

1. Measurement of coefficient of discharge of given Orifice and Venturi meters
2. Determination of the density & viscosity of an oil and friction factor of oil flow in a pipe
3. Determination of the performance characteristics of a centrifugal pump
4. Determination of the performance characteristics of Pelton Wheel
5. Determination of the performance characteristics of a Francis Turbine
6. Determination of the performance characteristics of a Kaplan Turbine
7. Determination of the thermal conductivity and specific heat of given objects
8. Determination of the calorific value of a given fuel and its flash & fire points
9. Determination of the p-V diagram and the performance of a 4-stroke diesel engine
10. Determination of the convective heat transfer coefficient for flow over a heated plate
11. Determination of the emissivity of a given sample
12. Determination of the performance characteristics of a vapour compression system

Course Outcomes:

The students who have undergone the course will be able to measure various properties of fluids and characterize the performance of fluid/thermal machinery