

## HEAT TRANSFER LAB

### Description of the Laboratory:

Heat Transfer laboratory provides fundamental and industrial knowledge about modes of heat transfer, like conduction, convection and radiation, and their application. This lab course is primarily being offered to the III Year B. Tech Mechanical Engineering Students to make them understand the principles of conduction, convection, radiation boiling and condensation modes of heat transfer and principles of Refrigeration and Air Conditioning. Heat Transfer Lab consists of the following equipment's listed below.

### List of Experiments:

- Thermal conductivity of metal rod
- Overall heat transfer co-efficient through Composite Slab Apparatus
- Thermal conductivity of insulating material through lagged pipe apparatus
- Heat transfer coefficient in natural convection
- Heat transfer coefficient in forced convection
- Heat transfer in drop and film wise condensation
- Emissivity of a gray body through Emissivity apparatus
- Experiment on Stefan Boltzmann Apparatus
- Heat transfer in pin-fin
- Experiment on Parallel and counter flow heat exchanger
- Determination of Critical heat flux using Critical Heat flux apparatus
- Study of two-phase heat flow
- Study of heat pipe and its demonstration
- Determination of Thermal conductivity of insulating powder material through concentric sphere apparatus
- Determination of Temperature distribution and heat transfer rate in Transient heat conduction mode using Transient heat conduction apparatus

### List of Equipment:

- Thermal conductivity of metal rod
- Thermal conductivity of Composite Slab Apparatus
- Lagged pipe Apparatus
- Natural convection Apparatus
- Forced convection Apparatus
- Drop and Film wise condensation Apparatus
- Emissivity Apparatus
- Stefan Boltzmann Apparatus

- Pin-Fin Apparatus
- Parallel flow and Counter flow Heat Exchanger Apparatus
- Critical Heat flux apparatus
- Heat pipes
- Transient conduction apparatus
- Concentric sphere apparatus
- Two-phase flow apparatus

**Photographs of the Lab/Equipment:**



