III B.TECH- II SEMESTER
HEAT TRANSFER LAB

Course Code: ME6L2 **Credits: 2**
Lecture: - **Internal assessment: 25 marks**
Lab Practice: 3 periods/week **Semester end examination: 50 marks**

COURSE OBJECTIVES:

- Define the fundamental concepts to students in the area of heat transfer and its applications.
- Recognize the practical significance of various parameters those are involved in different modes of heat transfer.
- Apply the knowledge of heat transfer in an effective manner for different applications.

COURSE OUTCOMES:

Upon the completion of this course the student will be able to:

1. Evaluate heat transfer through lagged pipe, Insulating powder and Drop and Film wise condensation.
2. Experiment the Thermal conductivity of a given metal Rod.
3. Measure the Heat transfer coefficient for Pin Fin, Forced convection, Natural Convection and parallel and counter flow heat exchanger and to Experiment on Transient heat conduction.
4. Test Emissivity, Stefan Boltzmann Constant and Critical Heat flux.
5. Asses the performance of Refrigeration and Air conditioning and to determine the overall heat transfer coefficient for a composite slab.

Pre-Requisite: Heat Transfer

ANY <u>TWELVE</u> EXPERIMENTS OF THE FOLLOWING:

1. Determination of Heat Transfer through Lagged Pipe.
2. Measurement of Thermal Conductivity for a given Asbestos Insulating powder.
3. Determination of Thermal Conductivity for a Given Copper Metal Rod.
4. Determination of Heat Transfer through Pin-Fin.
5. Experimentation on Transient Heat Conduction.
6. Determination of Heat Transfer through Forced Convection
7. Determination of Heat Transfer through Natural Convection.
8. Determination of overall heat transfer coefficient for Parallel and Counter Flow Heat Exchanger.
9. Emissivity Measurement.
10. Measurement of Stefan Boltzmann constant.
11. Determination of Heat Transfer through Drop Wise and Film Wise Condensation.
12. Determination of Critical Heat Flux for a given Nichrome wire.
13. Determination of Overall Heat Transfer Co-Efficient for Composite Wall.
14. Performance Evaluation of Refrigeration Test Rig.
15. Performance Evaluation of Air Conditioning Test Rig.