III B.Tech I Semester

15AME29 - HEAT TRANSFER LABORATORY

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Course objectives:-

- Heat Transfer is one of the important subjects which is commonly applied in renewable energy, industrial, commercial and domestic systems.
- The experiments are designed to provide exposure of practical aspects of the various theoretical concepts developed under the course, Heat and Mass Transfer.
- The laboratory consists of experiments on various conductive, convective, radiative, boiling and condensing mechanisms of heat transfer.

NOTE: Thermal Engineering data books are permitted in the examinations.

1. Thermal conductivity of insulating powder material through Concentric Sphere apparatus.
2. Thermal conductivity of insulating material through lagged pipe apparatus.
3. Overall heat transfer co-efficient through Composite Slab Apparatus Thermal Conductivity of metal (conductor).
4. Heat transfer in pin-fin.
5. Experiment on Transient Heat Conduction.
6. Heat transfer coefficient in forced convection.
7. Heat transfer coefficient in natural convection.
8. Experiment on Parallel and counter flow heat exchanger.
9. Emissivity of a gray body through Emissivity apparatus.
10. Experiment on Stefan Boltzman Apparatus.
11. Heat transfer in drop and film wise condensation.
12. Experiment on Critical Heat flux apparatus.
13. Experiment on heat pump.
14. Study of heat pipe and its demonstration.
15. Study of Two - Phase flow.

Course outcomes:-

After completion of this course the student can be able to:

- Apply the techniques in the lab are having wide applications in various industries such as sugar industries, petroleum industries, process industries, fertilizer industries, IC engines, thermal power plants, heat exchangers.
- Design new equipment related to heat transfer

Head
Mechanical Engineering Department,
JNTUA College of Engineering,
PULIVENDULA - 516 390.