

III B. Tech – II Semester

(20ME6113) HEAT TRANSFER LAB

Int. Marks	Ext. Marks	Total Marks	L	T	P	C
15	35	50	-	-	3	1.5

Pre-Requisites: Heat transfer

Lab Objectives:

- The laboratory course is aimed to provide the practical exposure to the students with regard to the determination of amount of heat exchange in various modes of heat transfer including condensation & boiling for several geometries.
- COP of VCR System with Capillary and thermal expansion valve.
 - Determination of overall heat transfer co-efficient of a composites lab
 - Determination of heat transfer rate through a lagged pipe.
 - Determination of heat transfer rate through a concentric sphere
 - Determination of thermal conductivity of a metal rod.
 - Determination of efficiency of a pin-fin
 - Determination of heat transfer coefficient in natural and forced convection
 - Determination of effectiveness of parallel and counter flow heat exchangers.
 - Determination of emissivity of a given surface.
 - Determination of Stefan Boltzman constant.
 - Determination of heat transfer rate in drop and film wise condensation.
 - Determination of critical heat flux.
 - Determination of Thermal conductivity of liquids and gases.
 - Investigation of Lambert's cosine law.

Course Outcomes:

After successful completion of the course, the students will be able to:

S.No	Course Outcome	BTL
1.	evaluate the amount of heat exchange for plane, cylindrical & spherical geometries	L4
2.	compare the performance of extended surfaces heat exchangers	L4
3.	compare the performance of extended surfaces heat exchangers	L4
4.	Demonstrate various laws and concepts of Thermal radiation.	L4

Correlation of COs with POs& PSOs:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1	3	3	2	3	3	3	1	1	2	1	3	2
CO2	2	3	3	3	2	2	0	1	1	1	2	1	2	2
CO3	2	2	2	3	2	3	1	2	3	1	3	1	3	2
CO4	2	0	3	3	3	0	1	3	1	3	1	1	2	1