

UG	Department: Chemical Engineering
Course Code: CHP315	Course Name: Process Equipment Design Lab
Credit: 2	L-T-P: 0-0-3
Version: 1	Approved on:

Prerequisite Course: **Nil**

(1) To study CHEMCAD manual and practice some simple flowsheeting problems. The objectives are:

- To know the various units available (reactor, distillation column, heat exchanger, etc.)
- To know how to connect the input and output ports of the units
- To carry out the flash calculation
- To add the components in the flowsheet

(2) Calculation of overall heat transfer coefficient for a cylindrical pipe

(3) To design a double pipe heat exchanger

(4) To calculate the overall heat transfer coefficient of a shell and tube heat exchanger

(5) To design a shell and tube heat exchanger using Kern's method

(6) To design a shell and tube condenser

(7) To design a thermosyphon reboiler

(8) To design a plate heat exchanger

(9) To carry out flash calculation manually and in CHEMCAD

(10) To find number of theoretical plates graphically and in CHEMCAD

Books

1. Sinnott, R.K., "Coulson and Richardson's *Chemical Engineering*," Vol. 6, 3rd ed., Butterworth Heinmann, New Delhi, 2002.
2. Kern, D. Q., "Process Heat Transfer," McGraw-Hill, 1950.