

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma in Chemical Engineering

Semester: 3

Subject Code**Subject Name** CHEMICAL ENGINEERING EQUIPMENT DRAWING

LABORATORY EXPERIENCES/TUTORIAL / TERM WORK:

Tutorial on design of various equipment

Pressure vessels

Calculation of shell thickness of cylindrical shape and spherical shape when subjected to internal pressure.

Various types of head/ covers

Storage vessels

Various types of losses during storage of volatile liquids.

Fixed Roof tank, floatation roof tank & hortonosphere.

Calculation of shell thickness.

Supports for vessels

Various types of support like bracket, leg, skirt or saddle supports.

Reaction vessels

Type of jackets

Types of coils

Calculation of thickness of shell subjected to internal pressure

Calculation of thickness of jacket

Calculation of head thickness

Distillation column

Stress in column shell

Determination of shell thickness at different heights

Wind loads at any distance

TERM WORK EXCERCISES:

- 1) Draw symbols of various equipment and devices.
- 2) Prepare various types of valves in details
- 3) Draw free hand sketches of different types of pumps and size reduction equipment
- 4) Prepare detailed drawing of jacketed reactor with agitator using given dimensions.
- 5) Draw shell and tube heat exchanger using given dimensions
- 6) Draw the given evaporator with the help of proper dimensions
- 7) Draw complete distillation tower assembly using appropriate dimensions
- 8) Prepare a flow diagram of continuous manufacturing process

REFERENCES:

- 1) Process equipment design
- 2) Outline chemical Technology
- 3) Chemical Engineering plant
- 4) Hand book of chemical engineering

M.V.Joshi
Gopal Rao.
Vilbrandt & Dryden
Parry