

**CH307 CHEMICAL ENGINEERING THERMODYNAMICS II**

**Credits: 6 (L = 4, P = 0)**

**(Pre-requisite: None)**

**Course Details:**

**Phase equilibrium:**

Phase rule - Single & Multicomponent phase equilibria, Thermodynamics of solutions, electrolytes and non-electrolytes. Ideal - non-ideal solutions. High Pressure vapor liquid equilibrium. Criterion of equilibrium and Gibb's - Duhem equation.

**Chemical reaction equilibrium:**

Homogeneous, Single & Multiple Reactions. Equilibrium constant and its variation with Temp & Pressure. Minimisation of free energy. Heterogeneous Reactions Equilibrium - Single & Multiple Heterogeneous reactions

**Detail 3:**

Compression & Absorption, Refrigeration cycles. Liquification of gases.

**Detail 4:**

Introduction to irreversible thermodynamics.

**Detail 5:**

Thermodynamic analysis of the processes.

**Reference Books:**

**Introduction to Chemical Engineering thermodynamics:**

**Mc Graw Hill**

*Smith & Vanners*

**Chemical Engineering thermodynamics:**

**John Wiley & Sons**

*Sandler*

**Principles of Chemical Equilibrium:**

**Cambridge Uni.Press**

*K G Dendigh*