



ChE 222 - Chemical Engineering Thermodynamics II

Code and Name: ChE 222 - Chemical Engineering Thermodynamics II

Credit Hours: 3 (Lecture: 3, Tutorial: 1)

Textbook:

- Introduction to chemical engineering thermodynamics, J.M. Smith, H.C. Van Ness & M.M. Abbott, 7th Edition, McGraw Hill, 2005

Other References:

- *Engineering and Chemical Thermodynamics*, Milo Koretsky, 2nd Edition, Wiley, 2013

Course Description:

Multicomponent systems, phase equilibria, prediction of thermodynamic properties and reaction equilibria.

Pre-requisites: ChE 213 Principles of Chemical Engineering II, ChE 221 Chemical Engineering Thermodynamics I

Co-requisites: None

Course Learning Outcomes:

With relation to ABET Student Outcomes (SOs: 1-7)

1. Recognize basic concepts of Vapor Liquid Equilibrium (1)
2. Recognize methods to compute the equilibrium of chemical reactions (1)
3. Develop thermodynamic relations for the properties of pure substances and mixtures (1)
4. Estimate ideal and real properties using tables and graphs (1)
5. Evaluate flash calculations (1)
6. Choose between different methods to evaluate properties of real engineering systems. (2)

Topics to be covered:

- Thermodynamics Properties of Fluids
- Vapor/Liquid Equilibrium: Introduction
- Solution Thermodynamics: Theory
- Solution Thermodynamics: Applications
- Chemical-Reaction Equilibria

Grading Policy:

The grading for the course are 60% coursework and 40% Final Exam. The course work consists of two Midterm Exams, where each midterm exam is worth 20%. It also includes quizzes, homework, and projects for the remaining 20% that is modified by the course instructor.

