CHEN 3771R - Chemical Engineering Thermodynamics Applications

Fall 2026 Syllabus, Section 01, CRN 43814,

Credit hours: 1

Instructor

Zhuanzhuan Xie

Email: zxie01@ysu.edu

Public Instructor Information

Instructor Title: Senior Lecturer
Instructor Professional Qualifications: Ph. D., Chemical Engineering, The University of Kansas, 2013
Instructor Office Location: Moser Hall 2068
Instructor Office Phone: 330-941-3019

Course Description

3771R. Chemical Engineering Thermodynamics Applications. This course is designed to provide the student opportunities to develop problem solving skills needed for CHEN 3771 Chemical Engineering Thermodynamics 1. Prereq.: C or better in MATH 2673, MATH 2673H, or MATH 2686H and C or better in CHEN 2684. Coreq.: CHEN 3771. 1 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Fundamentals of Chemical Engineering Thermodynamics	Kevin D. Dahm and Donald P. Visco, Jr.	1111580707

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Tentative Course Schedule

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Chapter 1 Chapter 2	Introduction Physical Properties of Pure Compounds	Homework 1 Homework 2
8/31	Chapter 3	Material and Energy Balances	No class 9/7: Labor Day Homework 3 Quiz 1: 9/9, on Chapters 1&2
9/7	Chapter 4	Entropy	Homework 4
9/14	Chapter 5	Thermodynamic Processes and Cycles	Homework 5 Quiz 2: 9/23, on Chapters 3&4
9/21	Chapter 6	Thermodynamic Models of Real, Pure Compounds	Quiz 3: 9/30, on Chapter 5
9/28	Chapter 6	Thermodynamic Models of Real, Pure Compounds	Homework 6 Exam I: 10/7, on Chapters 1-5
10/5	Chapters 7	Equations of State	Homework 7
10/12	Chapter 8	Modeling Phase Equilibrium for Pure Components	Quiz 4: 10/21, on Chapters 6&7
10/19	Chapter 8	Modeling Phase Equilibrium for Pure Components	Homework 8 Quiz 5: 10/28, on Chapter 8
10/26	Chapter 10	Vapor-Liquid Equilibrium	Homework 9 Exam II: 11/4, on Chapters 6-8

11/2	Chapter 9	An Introduction to Mixtures	No class 11/11: Veteran's Day Homework 10
11/9	Chapter 11	Theories and Models for Vapor-Liquid Equilibrium of Mixtures: Modified Raoult's Law Approaches	Quiz 6: 11/18, on Chapters 9&10
11/16	Chapter 11	Theories and Models for Vapor-Liquid Equilibrium of Mixtures: Modified Raoult's Law Approaches	No Class 11/25 – 11/27: Thanksgiving Holiday Homework 11
11/23	Chapter 11	Theories and Models for Vapor-Liquid Equilibrium of Mixtures: Modified Raoult's Law Approaches	Homework 12 Quiz 7: 12/2, on Chapter 11
11/30			Final Exam (Exam III): Monday, 12/7, 10:30-12:30, on Chapters 9-11

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.