MEMORANDUM FOR STUDENTS ENROLLED IN CHEN 3302 – Section 01 2026 Fall

Lecture times: M/W 11:20 – 12:45 pm, RBN 2012

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Office hours: MW 9:30 – 11:00 am

Welcome to CHEN 3302 - Chemical Engineering Thermodynamics II. This course provides coverage of advanced thermodynamic principles, including equations of state for real substances, equilibrium, multicomponent mixtures, and multiphase mixtures. Calculations will be related to practical examples in the chemical industry. The course has eight learning objectives (see below) that can be broadly grouped into three categories: (a) thermodynamic modeling and equations of state for pure fluids, (b) mixture thermodynamics and phase equilibrium, and (c) engineering application, teamwork, and acquisition of new knowledge.

Course Objectives:

1. Derive the thermodynamic models of real pure compounds.
2. Perform calculations using equations of state for real substances.
3. Determine the equilibrium composition of single and multi-phase mixtures.
4. Explain the origin of chemical potential and fugacity.
5. Determine the fugacity of a pure component non-ideal gas and of pure liquids under high pressure.
6. Calculate a property of mixing for a system at equilibrium based on ideal gas or ideal solution
7. Calculate phase compositions for real mixtures at equilibrium based on equation of state for gas phases, and activity coefficient models for non-ideal liquid behavior
8. Apply thermodynamic principles to analyze and quantitatively explain a real-world phenomenon or system while working effectively in a team and acquiring, validating, and applying new technical knowledge..

These course objectives will be used to evaluate the student learning outcome (SO1, SO5, SO7) for ABET:

ABET SO 1: an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
ABET SO 5: an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
ABET SO 7: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Mode of delivery: This is a face-to-face course.

Class Attendance and Recordings

Class sessions will not be recorded by the instructor. Students are expected to attend class in person and are responsible for all material presented during class, including lectures, examples, problem-solving activities, announcements, and discussions.

The course has two prerequisites which must be completed with a minimum grade of "C" prior to taking this course:

- CHEN 3301, Chemical Engineering Thermodynamics I
- MATH 2415, Multivariable Calculus.

1. Q&A

Our goal is to be available to assist you throughout the course. You are encouraged to seek additional help whenever you have questions about course concepts, calculations, homework, or other course-related material. Several options are available:

- You are welcome to stop by the instructor's office. To ensure that the instructor is available, you are encouraged to:
    - Attend scheduled office hours; or
    - E-mail the instructor to arrange a mutually convenient meeting time.
- You may also e-mail course-related questions to the instructor.

2. Class Room Procedures:

1. Bring study notes, note-taking materials, and a calculator to every class. You may not borrow or exchange calculators during graded activities. If your calculator fails during a graded activity, the instructor is not responsible for providing a substitute. Class preparation is your individual responsibility.

2. Textbook:
    - Required Textbook:
      Fundamentals of Chemical Engineering Thermodynamics, Dahm and Visco ISBN-13 : 978-1111580704 (DV)

      Reference textbook:
      Chemical, Biochemical, and Engineering Thermodynamics 5th Edition, Stanley I. Sandler ISBN-13: 978-0470504796
      Engineering and Chemical Thermodynamics 2nd Edition, Milo D. Koretsky, ISBN-13: 978-0470259610
      Fundamentals of Chemical Engineering Thermodynamics, Themis Matsoukas, ISBN-13: 978-0132693066
      Introductory Chemical Engineering Thermodynamics, Carl T. Lira and J. Richard Elliot, ISBN-13: 978-0136068549

3. *Recitations:*

   Certain class meetings or portions of class meetings will be used as recitation sessions focused on classroom-based problem solving. During these sessions, representative thermodynamics problems will be worked through and discussed in class to reinforce concepts introduced during lectures.

   Recitation sessions are intended to develop the problem-identification, formulation, calculation, and problem-solving skills needed for homework, quizzes, and examinations. Students are expected to participate actively, attempt the problems, ask questions, and bring their calculator and course notes. A textbook is not required during recitation sessions unless otherwise announced.

3. Evaluations:

1. *ACADEMIC DISHONESTY:* Representation of other's work as your own will not be tolerated. Cheating on examinations, quizzes, and homework, and the false representation of work, will be considered academic dishonesty. Academic dishonesty will be subject to disciplinary action as outlined by the UT Tyler Student Guide on Conduct and Discipline.

2. *Homeworks:* A set of homework problems will be assigned throughout the semester. There will be **six homework assignments**, with **one homework assignment corresponding to each chapter covered in this course (Chapters 6–11)**. All homework is mandatory and becomes part of your grade. As an engineer, your goal is to make a clear, logical, and professional presentation of your work that is both accurate and correct. As such, both the presentation and the accuracy of your work are important, and both will be graded. It is critical that you show all of your work and leave clear "footprints" so that your solution can be easily followed. No guesswork should be required to understand how you obtained your answer. For each homework problem, the corresponding topic and numerical answers will be provided when appropriate. You are encouraged to work in groups and discuss problem-solving approaches, but the work that you turn in must be your own. **Homework assignments are due at 5:00 PM on the assigned date and must be submitted online via Canvas.**

3. Open-ended project (presentation only): One group open-ended project will be assigned during the semester as a teamwork activity (2–3 students per group). The instructor will assign groups during the first two weeks of the semester. Each group will select a real-world phenomenon or system that can be explained using thermodynamic principles and submit the proposed topic at the end of Week 6 for approval by the instructor. A short summary of approximately 200 words should describe the selected phenomenon, why it is interesting or important, the thermodynamic concepts that will be used. Open-ended projects do not have a single predetermined answer. Instead, students are expected to investigate a phenomenon, acquire information beyond the lectures and textbook as needed, and use thermodynamic principles and quantitative calculations to explain why and how the phenomenon occurs. Students may apply knowledge from Introduction to Chemical Engineering, Thermodynamics I, and Thermodynamics II; however, at least one concept from Thermodynamics II must play a meaningful role in the analysis, such as equations of

state, residual properties, fugacity, phase equilibrium, properties of mixtures, activity coefficients, vapor–liquid equilibrium, or related methods. The final project will consist of an oral presentation; no written project report will be required.

i. This project will be used to assess ABET SO5 (Teamwork) and ABET SO7 (Acquire and Apply New Knowledge). Each group must work collaboratively to establish the project goal, divide responsibilities, plan and complete the required tasks, integrate individual contributions, and prepare and deliver the final presentation. All group members must participate in the presentation.

ii. For SO5, the presentation must include a brief final slide or appendix identifying the project goal, the responsibilities of each team member, how the major tasks were divided and coordinated, and how the group worked together to complete the project. Each member should have a meaningful contribution to both the project development and final presentation.

iii. For SO7, each group must identify information or technical knowledge that was acquired beyond the course lectures and textbook. The presentation should identify the sources used, explain how the information was checked or validated, and demonstrate how the newly acquired knowledge was applied to the thermodynamic explanation or calculations. Appropriate sources may include scientific literature, engineering handbooks, property databases, technical standards, manufacturer information, or professional engineering software.

iv. A suggested structure for the presentation is:

- Introduction and Phenomenon: Introduce the selected real-world phenomenon or system, describe what occurs, and explain why the phenomenon is interesting or important.
- Thermodynamic Question: Clearly identify the main question that the group intends to answer. For example: Why does the phenomenon occur? What thermodynamic variables control it? How would changing temperature, pressure, composition, or another relevant variable affect the observed behavior?
- Thermodynamic Principles: Identify and explain the thermodynamic concepts needed to understand the phenomenon. At least one Thermodynamics II concept must be used meaningfully in the analysis.
- Quantitative Analysis: Perform appropriate thermodynamic calculations to support the explanation. Clearly state assumptions, obtain necessary property data or parameters, select appropriate equations or models, and interpret the calculated results.
- Explanation and Discussion: Use the thermodynamic principles and calculated results to explain the observed phenomenon. Discuss whether the calculations agree with the expected real-world behavior and identify important assumptions or limitations.
- New Knowledge and Sources (SO7): Identify what the group had to learn beyond the course material, where the information was obtained, how the sources or data were validated, and how the new knowledge was applied.

- Teamwork (SO5): Briefly summarize the team goal, division of responsibilities, coordination of tasks, and contributions of individual team members.
- Example topics may include:
  - Carbonated beverage opening: phase equilibrium, fugacity/solubility;
  - Propane/LPG tank: EOS, VLE, fugacity;
  - Pressure cooker/boiling under pressure: phase equilibrium and fugacity;
  - Refrigerant behavior: EOS, phase equilibrium;
  - Ethanol-water distillation: activity coefficients and non-ideal VLE;
  - Condensation/dew of petroleum: mixture phase equilibrium.

4. Late Submissions: It is a basic principle of professionalism that "Professionals are not Late." A "COORDINATED LATE" submission occurs when you anticipate that you will miss the due date for a graded assignment and contact the instructor sufficiently in advance. Notification immediately before or after the submission deadline will not be considered a coordinated late submission. Unless otherwise approved by the instructor due to extenuating circumstances, point deductions of up to the amounts listed below may be assessed for late submissions:

   - 0–24 hours late: a deduction of 25% of the earned grade
   - 24–48 hours late: a deduction of 50% of the earned grade
   - More than 48 hours late: No credit
   - Circumstances may arise that make a timely submission impossible. When such situations occur, students should contact the instructor as soon as reasonably possible, and appropriate accommodations will be considered on a case-by-case basis and I will work with you when and if they occur.

5. Participation, conduct, and professionalism: You are expected to conduct yourself in a professional manner in the classroom. **Attendance is the primary component of the participation grade.** A student who attends class regularly, except for unavoidable or approved absences, and demonstrates professional conduct will receive full participation credit. **For each absence without advance notice or an unavoidable circumstance, 1 point will be deducted from the participation grade.** If an unexpected circumstance prevents you from providing advance notice, please contact the instructor as soon as reasonably possible. **Attendance check-ins will be conducted randomly during class throughout the semester.**

6. *In-Class Question Checks:* There will be no formal quizzes in this course. However, short in-class question checks of approximately 10 minutes may be administered randomly throughout the semester without prior notice. These questions will focus on concepts, examples, calculations, or homework-related material from recently covered topics and are intended to check students' understanding and preparation for the course. These question checks are separate from the chapter exams and final exam.

7. Chapter Exams and Final Exam: There will be one in-class exam corresponding to each chapter covered in this course (Chapters 6–11), resulting in six chapter exams, in addition to one Final Exam. Therefore, a total of seven exams will be administered during the semester. Chapter exams will primarily assess the material covered in the corresponding chapter. The Final Exam will primarily assess mixture thermodynamics covered in Chapters 9–11, including properties of mixtures, ideal and non-ideal solutions, vapor–liquid equilibrium, fugacity in mixtures, activity coefficients, and related models. For calculation of the course grade, the lowest score among the seven exams will be dropped, and the remaining six exam scores will be counted toward the exam portion of the course grade. Chapter exams will be administered during the regular class period, and the Final Exam will be administered according to the University final examination schedule. Official reasons for missing an exam are outlined in the Student Handbook. Students who miss a scheduled exam must contact the instructor as soon as possible and may be required to take a make-up exam. A TI-30 calculator or FE-equivalent calculator may be used. A double-sided note sheet, handwritten or printed and no larger than letter size, may be allowed for exams as announced by the instructor. No extra-credit points or additional examinations will be provided to replace or improve exam scores.

8. The HWs and exams will be planned to be graded based on the rubric:

Criterion	Weight	What is evaluated	Requirements for full credit
1. Understanding of the Thermodynamic System/Problem	25%	Whether the physical system and thermodynamic problem are correctly understood before calculations begin.	The student should clearly identify **what is known and what must be determined**, identify the relevant phases/components and thermodynamic conditions, recognize the physical behavior involved, and state important assumptions when needed. The solution should demonstrate that the student understands **what is happening in the system and why the selected thermodynamic analysis is appropriate**.
2. Selection and Application of Thermodynamic Principles, Models, and Equations	30%	Whether the appropriate thermodynamic approach is selected and correctly formulated.	The student should select the **appropriate thermodynamic principle, equation, EOS, correlation, equilibrium relationship, or property model** for the problem. Equations should be written correctly before numerical substitution. Required assumptions and model conditions should be identified when relevant. For example, the student should distinguish when an ideal-gas model, cubic EOS, fugacity approach, Raoult's Law, modified Raoult's Law, activity-coefficient model, or other method is appropriate.
3. Calculation and Solution Procedure	35%	Whether the mathematical solution is performed correctly and can be followed.	All major calculation steps should be shown in a **clear, logical sequence**. Values should be substituted correctly, units should be consistent, equations should be solved correctly, and numerical calculations should be accurate. Intermediate steps should be provided when necessary so that the instructor can follow how the final answer was obtained. **A correct final numerical answer without sufficient supporting work may not receive full credit.**
4. Final Result, Physical Interpretation, and Validation	10%	Whether the calculated result is correctly reported and makes thermodynamic sense.	The final answer should be clearly identified with the **correct value, units, and appropriate significant figures**. The student should determine whether the result is physically reasonable based on the thermodynamic system. When appropriate, the result should be checked against expected trends, limiting behavior, phase conditions, critical properties, conservation principles, or another calculation/model. Any physically

			impossible or questionable result should be recognized and discussed rather than reported without evaluation.
For full credit, a correct numerical answer alone is not sufficient. Students are expected to demonstrate understanding of the thermodynamic system, select and correctly apply appropriate thermodynamic principles and equations, show a clear calculation procedure, and evaluate whether the final result is physically reasonable.			

4. Grading:

1. Grades will be based on the student's demonstrated performance in homework, exams, the open-ended project presentation, participation, and other course activities. For calculation-based work, students are expected to demonstrate a clear understanding of the thermodynamic system, select and correctly apply appropriate thermodynamic principles and equations, show a logical and organized solution procedure, and report a physically reasonable final result. A correct numerical answer without sufficient supporting work may not receive full credit. Incorrect final answers may receive partial credit when the approach, equations, assumptions, and intermediate calculations demonstrate correct or partially correct understanding. The final answer is important, but the process used to obtain and evaluate the answer is also significant.
2. The open-ended project is a group presentation. Each member of the group must make a meaningful contribution to the project and must participate in the final presentation. Individual students within the same group may receive different scores when there is clear evidence of substantially different levels of contribution, preparation, or participation.
3. The open-ended project presentation must include a brief statement of each member's contribution to the project, including major responsibilities, tasks completed, and participation in the thermodynamic analysis and presentation. The project will be evaluated based on the quality of the thermodynamic explanation and calculations, acquisition and application of new knowledge, presentation quality, and teamwork.
4. The course points will be assigned as shown below:

Course Points	
Open-ended Project Presentation	(16%)
Homework, 6 assignments, best 5 of 6 homework	(20%)
Exams, best 6 of 7 exams	(48%)
In-class Question Checks	(6%)
Participation, conduct and professionalism	(10%)
	Total 100 (100%)

Grade Scale based on points	
A	86.00–100.00
B	73.00–85.99
C	60.00–72.99
F	Below 60.00

The regular graded course components total 100 points. In-class question checks provide an opportunity to earn up to 5 additional bonus points, allowing a maximum possible course score of

105 points. These bonus points are provided as the only extra-credit opportunity in the course. No additional individual extra-credit assignments, examinations, projects, or other opportunities will be provided to increase a student's final course grade. Final letter grades will be assigned according to the stated point ranges. A student's proximity to the next letter-grade cutoff will not, by itself, constitute a basis for changing the final grade.

5. Collection of Student Work:

Collection of Student Work: Throughout the semester, I may collect and retain course artifacts, including exams, in-class question checks, homework, and open-ended project materials, for ABET, EOP, and other program assessment purposes. For this reason, original graded work may not be routinely returned. Students may review graded work in class or during office hours; after review, materials retained for assessment must be returned to the instructor on the same day. If you need a personal copy, you may photograph or scan your work during the review period or request an electronic copy when available. Upon student request, an original may be returned after the instructor has created and retained a complete copy for the assessment archive. These materials will be used only for educational, accreditation, and program-assessment purposes. Student identities will be kept confidential when work is selected or presented as assessment evidence.

6. Use of Generative AI in This Course

Use of Generative AI in This Course: Generative AI tools, such as ChatGPT, Copilot, or similar systems, are permitted only for designated portions of the open-ended project. When using generative AI, students must clearly acknowledge and appropriately cite its use. Generative AI may be used as a supplementary learning resource to help identify unfamiliar concepts, develop preliminary ideas, locate topics that require further investigation, or improve understanding of material related to the open-ended project. However, students remain responsible for independently verifying all technical information, equations, numerical values, references, and conclusions using reliable sources. AI-generated information should not be treated as an authoritative technical source.

When generative AI is used for the open-ended project, the complete AI interaction record, including the prompts entered by the student and the AI-generated responses, must be retained and submitted as part of the project supporting materials in Canvas. The submitted AI record will be used to document how AI was used and to verify that the final thermodynamic analysis, calculations, conclusions, and presentation were developed and validated by the students.

Copying and pasting AI-generated content directly into submitted work is not permitted. Generative AI may not be used to generate the complete thermodynamic analysis, calculations, conclusions, presentation content, or presentation slides for the open-ended project. Students must be able to explain, defend, and reproduce the thermodynamic reasoning and calculations included in their work. Submission of AI-generated work as the student's or group's own work may be treated as academic dishonesty.

In all other cases, including homework and exams, the use of generative AI is not allowed at any stage of the assignment.

7. **Assigned readings:**

The class schedule will include assigned reading for every lecture. Students who read the corresponding sections of the book *before each class* will certainly make the most of the lectures, so this is highly recommended. In addition, the instructor will periodically post the lecture notes on the course website. Doing the assigned reading prior to class will help you to understand the material presented during the instruction and will fill in gaps for things we do not cover (***I will not cover everything***). It will also make you more familiar with terms and concepts to be covered.

8. **UT Tyler Honor Code** - Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

9. **Students Rights and Responsibilities:** to know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttyler.edu/wellness/rightsresponsibilities.php.

10. **Campus Carry** - We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at http://www.uttyler.edu/about/campus-carry/index.php.

11. **UT Tyler a Tobacco-Free University** - All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.

12. **Grade Replacement/Forgiveness and Census Date Policies** - Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at http://www.uttyler.edu/registrar. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract. The Census Date is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

13. **State-Mandated Course Drop Policy** - Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date). Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

14. **Disability/Accessibility Services** - In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University of Texas at Tyler offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have a history of modifications or accommodations in a previous educational environment, you are encouraged to visit https://hood.accessiblelearning.com/UTTyler and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with Cynthia Lowery, Assistant Director of Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at http://www.uttyler.edu/disabilityservices, the SAR office located in the University Center, # 3150 or call 903.566.7079.

15. **Student Absence due to Religious Observance** - Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

16. **Student Absence for University-Sponsored Events and Activities** - Revised 05/19 If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

17. **Social Security and FERPA Statement** - It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

18. **Emergency Exits and Evacuation** - Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

19. **Student Standards of Academic Conduct** - Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

i. "Cheating" includes, but is not limited to:

- copying from another student's test paper;
- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;
- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.

iii. “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

iv. All written work that is submitted will be subject to review by plagiarism software.

20. UT Tyler Resources for Students

- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu
- UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu
- The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Counseling Center (903.566.7254)

Schedule:

Week	Date	Day	Material	Reading	Evaluation / Notes
1	Aug 24	M	Syllabus; Thermodynamics I review; introduction to Chapter 6	Ch. 1–6	
1	Aug 26	W	Fundamental thermodynamic relations and heat capacity	Ch. 6	
2	Aug 31	M	Residual properties and property calculations	Ch. 6.3	
2	Sep 2	W	**Chapter 6 Recitation – classroom problem solving**	Ch. 6	
3	Sep 7	M	**No Class – Labor Day Holiday**		
3	Sep 9	W	**Chapter 6 Exam**; introduction to EOS if time permits	Ch. 6 / 7.1	HW 1 – Ch. 6
4	Sep 14	M	Equations of State	Ch. 7.1–7.2	
4	Sep 16	W	Cubic Equations of State	Ch. 7.2–7.3	
5	Sep 21	M	Beyond the Cubic EOS; EOS selection and applications	Ch. 7.4	
5	Sep 23	W	**Chapter 7 Recitation – EOS calculations and model selection**	Ch. 7	
6	Sep 28	M	**Chapter 7 Exam**; introduction to pure-component phase equilibrium if time permits	Ch. 7 / 8.1	HW 2 – Ch. 7
6	Sep 30	W	Modeling Phase Equilibrium for Pure Components	Ch. 8.1–8.2	**OEP 1-page topic summary**
7	Oct 5	M	Mathematical Models of Phase Equilibrium	Ch. 8.2	
7	Oct 7	W	Fugacity and Its Use in Modeling	Ch. 8.3	
8	Oct 12	M	Fugacity of real gases and high-pressure liquids; Poynting correction	Ch. 8.3	
8	Oct 14	W	**Chapter 8 Recitation – phase equilibrium and fugacity calculations**	Ch. 8	
9	Oct 19	M	**Chapter 8 Exam**; introduction to mixtures if time permits	Ch. 8 / 9.1	HW 3 – Ch. 8
9	Oct 21	W	Introduction to Mixtures and Ideal Solutions; Properties of Mixing	Ch. 9.1–9.3	
10	Oct 26	M	Mathematical Framework for Solutions	Ch. 9.3–9.4	

10	Oct 28	W	**Chapter 9 Recitation – mixture-property calculations**; introduction to VLE if time permits	Ch. 9 / 10.1	HW 4 – Ch. 9
11	Nov 2	M	VLE, Raoult's Law, and VLE Data	Ch. 10.1–10.2	
11	Nov 4	W	Mixture phase behavior, critical point, lever rule; **Chapter 10 Recitation/problem solving**	Ch. 10.2–10.4	HW 5 – Ch. 10
12	Nov 9	M	**Chapter 9 Exam**	Ch. 9	AIChE Annual Meeting
12	Nov 11	W	**Chapter 10 Exam**	Ch. 10	AIChE Annual Meeting
13	Nov 16	M	Theories and Models for VLE Mixtures; Fugacity in Mixtures	Ch. 11.1–11.4	
13	Nov 18	W	Gamma–Phi Modeling; Modified Raoult's Law; Excess Gibbs Energy Models	Ch. 11.4–11.7	
14	Nov 23	M	**No Class – Thanksgiving Holiday**		
14	Nov 25	W	**No Class – Thanksgiving Holiday**		
15	Nov 30	M	Excess Gibbs Energy Models and Thermodynamic Consistency; **Chapter 11 Recitation**	Ch. 11.6–11.9	HW 6 – Ch. 11
15	Dec 2	W	**Chapter 11 Exam; Open-ended Project Presentations**	Ch. 11	OEP Presentation
Finals	Dec 7–11	TBA	**Final Exam – Mixture Thermodynamics**	Ch. 9–11	University-assigned date/time

- Tentative Dates for Assessments and Deliverables: Students will normally have more than one week to complete each homework assignment after it is assigned.
- Assignment instructions and due dates will be announced in Canvas; students are responsible for checking Canvas announcements regularly.
- Chapter exam dates are tentative and may be adjusted based on course progress; any changes will be announced in advance through Canvas.
- The Open-ended Project Presentation due date will not be changed except under extraordinary circumstances.
- Final Exam: The Final Exam will be administered according to the official University final examination schedule; the specific date and time will be announced when available.

- Note: This is a tentative syllabus and course schedule. The instructor reserves the right to modify course content, assessment dates, assignments, and the schedule as needed to support course progress and learning objectives. Any changes will be communicated to students in class and/or through Canvas.