INSTRUCTOR:
Dr. Jessica Buckner
jlmorris@utep.edu
Virtual Office Hours (on Blackboard Collaborate Ultra): Wednesdays & Fridays 4-5 PM

TEACHING ASSISTANT:
Joy Hamilton
sjlogan@miners.utep.edu

TOPICS COVERED: First, second and third law of thermodynamics, chemical energy balances, reaction feasibility, equilibrium, single and binary component phase diagrams, phase equilibrium and electrochemistry

PRE-REQUISITES: MME 2305

COURSE STRUCTURE: This course is lecture based. The lecture module is due by Friday of each week, and includes a pre-recorded lecture, reading, a comprehension quiz and homework. The lecture provides theory and problem solving exercises, with the quiz and homework designed to test your knowledge. There will be three exams, with a study guide of covered topics issued the week before the exam.

Lecture Instructions: One module is assigned each week. Each module includes the following:
- Assigned Reading (1 chapter per week)
- Lecture Module – read module which is released every Monday (45 minutes)
- Comprehension Quiz – due by 11:59 pm on Friday (10 minutes)
- Homework Assignment – due by 11:59 pm on Sunday (1 hour)
- Office hours on Blackboard Collaborate Ultra on Wednesday and Friday from 4-5 pm – optional

Students are encouraged to show their work – not just the answer – for consideration of partial credit on math based questions. If only the answer is shown without appropriate work, the entire problem/question will be given zero credit.

Quizzes will be mostly theory based. Homework will be math based and require upload of finished document in Blackboard, showing all relevant work, equations, etc. for credit.

While there will be no formal discussion post assignments in this course, the discussion board will be available to students to ask questions of the instructor, TA, or other students that are relevant to the entire class.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Day Released</th>
<th>Time to complete assignment/Duration</th>
<th>Assignment Due</th>
<th>Synchronous Sessions on BB</th>
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Activity Day Released Time to complete assignment/Duration Assignment Due Synchronous Sessions on BB
Assigned Reading | Start of Class | 30-90 minutes | N/A | N/A
Lecture | Monday | 45 minutes | N/A | N/A
Comprehension Quiz | Monday | 10 minutes | Friday, 11:59 pm | N/A
Homework Assignment | Monday | 1 hour | Sunday, 11:59 pm | N/A
Office Hours* | Wednesday & Friday | N/A | N/A | 4–5 PM

*Optional

The course is divided into 3 parts:
Part I: The Fundamentals of Thermodynamics – This includes basic thermodynamics variables and functions. Understand fundamental variables and be able to solve for relations.
Part II: Phases and Phase Diagrams – Describe the thermal behavior of liquid and solid materials, including phase transitions. Understand the role of thermodynamics in one component and binary phase diagrams.
Part III: Reaction Equilibria – Use thermodynamics to predict and interpret phase equilibria and understand phase diagram construction.

EXAM SCHEDULE:
An exam will follow each part of the course, followed by a comprehensive final. An optional review session hosted the Friday before the exam from 4-5 PM (via what platform??).

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<tr>
<th>Exam #</th>
<th>Release Date</th>
<th>Study Guide Release Date</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>September 28</td>
<td>September 21</td>
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<tr>
<td>Exam 2</td>
<td>October 26</td>
<td>October 19</td>
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<td>Exam 3</td>
<td>November 30</td>
<td>November 23</td>
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<td>Final Exam</td>
<td>December 7</td>
<td>Nov 30 (lecture this week will consist only of review)</td>
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Exams will be released on a Monday, as indicated on the class schedule. You will have from 12:01 AM to 11:59 PM Monday to access the exam. Once accessed, you will have three hours to complete and submit the exam. The exam will need to be printed and uploaded when completed to get proper credit. Reminder: Show all of your work for consideration of partial credit.


COURSE LEARNING OUTCOMES: At the end of this course, you will be able to apply thermodynamic principles to chemical (materials) systems. Specifically, you will be able to perform chemical energy balances, determine conditions for chemical equilibrium as a function of temperature, understand phase equilibria and phase diagrams, and electrochemistry.

COURSE GRADING:

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<tbody>
<tr>
<td>Comprehension Quizzes</td>
<td>15%</td>
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<tr>
<td>Homework</td>
<td>20%</td>
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If there is a conflict, it must be resolved with the instructor no later than two weeks prior to the release of module with conflict. Each situation will be evaluated on a case-by-case basis. No late work will be accepted.

COURSE COMMUNICATION: For this online course, there are several communication modes available.

- **Office Hours:** The instructor will have office hours for student questions and comments about the course. Office hours will be held on Blackboard Collaborate during the following times, as indicated in the “Course Structure” section above:
  - Wednesdays: 4-5 PM Mountain Time
  - Fridays: 4-5 PM Mountain Time
- **Email:** UTEP e-mail is the best way to contact the instructor, and every attempt will be made to respond to student emails within 24-48 hours of receipt.
- **Discussion Board:** If students have questions that other students may also have, please post it in the discussion board inside of Blackboard. Please respond to other students’ questions if you have a helpful response.
- **Announcements:** Check the Blackboard announcements frequently for any updates, deadlines, or other important messages.

ALTERNATIVE MEANS OF ASSIGNMENT SUBMISSION: It is strongly suggested that students submit work with plenty of time to spare in the event that there are technical issues with the course website, network, and/or personal computers. If the student is unable to access Blackboard to submit an assignment or test due to connectivity issues, it is acceptable for the student to email the assignment and an explanation of the connectivity issues experienced directly to the instructor. Please also keep the TA cc’ed on email submissions. Note that if sent by email, the time stamp of when it arrives in the instructor/TA’s inbox will be used to determine eligibility for assignment acceptance, i.e. do not send the assignment at the exact time it is due, as the server may cause the email to take longer to reach the destination inbox. Allow a reasonable amount of time for the email to travel through the servers to avoid an assignment arriving late and loss of credit. Students are encouraged to contact the Help Desk for technical difficulty resolution.

COURSE DROP POLICY: Students who fail to turn in 5 assignments will be dropped from the course. The student withdrawal deadline with a ‘W’ is October 30th. After October 30th, students may drop the course, and will receive a grade of W or F. To drop this class, please contact the Registrar’s Office to initiate the drop process. If you cannot complete this course for whatever reason, please contact me. If you do not, you are at risk of receiving an “F” for the course.
TECHNOLOGY REQUIREMENTS: The course content is delivered via the Internet through the Blackboard learning management system (LMS). Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Mozilla Firefox and Google Chrome are the most supported browsers for Blackboard; other browsers may cause complications with the LMS. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.

You will need to have or have access to a computer/laptop, printer, and scanner. You will need to download or update the following basic software: Microsoft Office, Adobe, Flashplayer, Windows Media Player, QuickTime, and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

If you do not have a word-processing software, you can download Word and other Microsoft Office programs (including Excel, PowerPoint, Outlook and more) for free via UTEP’s Microsoft Office Portal. Click the following link for more information about Microsoft Office 365 and follow the instructions.

If you encounter technical difficulties beyond your scope of troubleshooting, please contact the Help Desk as they are trained specifically in assisting with technological needs of students.

NETIQUETTE:
- Always consider audience. Remember that members of the class and the instructor will be reading any postings.
- Respect and courtesy must be provided to classmates and to instructor at all times. No harassment or inappropriate postings will be tolerated.
- When reacting to someone else’s message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.
- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professor only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

ACCOMMODATIONS POLICY: The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services.

SCHOLASTIC INTEGRITY: Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating,
plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as one's own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more HOOP: Student Conduct and Discipline.

COVID-19 PRECAUTIONS: You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at screening.utep.edu. If you know anyone who should report any of these three criteria, encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to COVIDaction@utep.edu.

For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website (screening.utep.edu) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures.

COVID-19 ACCOMMODATIONS: Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.