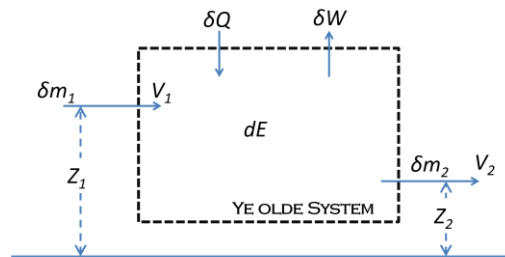


MME 2305 Material and Energy Balance Spring 2023  
CRN: 21482



**Instructor:** David A. Roberson, Ph.D., [droberson@utep.edu](mailto:droberson@utep.edu)

**Class Time and Location:** MW 10:30-11:50 LART 211

**Office Hours:** Tuesday 1:30-3:00 M201-L

**Meetings can be set up on TEAMS if needed!**

**T.A.:** Mynel Gomez Alvarez [mgomezalva@miners.utep.edu](mailto:mgomezalva@miners.utep.edu)

### COURSE DESCRIPTION

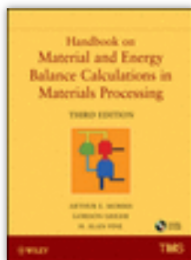
MME 2305 is a required course in the BS program in MME. The course serves as an introduction to process variables, stoichiometry, materials balance, first law of thermodynamics, and energy balance applied to materials system.

### COURSE OBJECTIVES OR EXPECTED LEARNING OUTCOMES

At the end of this course, students will be able to apply the principles of conservation of mass and energy to materials systems.

### RECOMMENDED TEXT:

Some books to help you in terms of reading material are below:



## Handbook on Material and Energy Balance Calculations in Material Processing, Third Edition

Author(s): Arthur E. Morris, Gordon Geiger, H. Alan Fine

First published: 15 July 2011

Print ISBN: 9781118065655 | Online ISBN: 9781118237786 | DOI: 10.1002/9781118237786

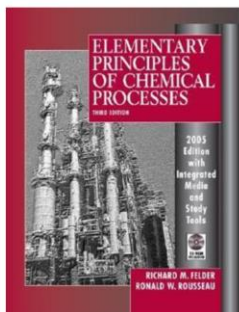
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[Link HERE](#)

You will also need regular access to a computer, stable, consistent internet, Blackboard, a UTEP VPN connection and your UTEP email account. Please note that there is enough information for you to learn the critical aspects of the class within the blackboard materials.

Also note that some of the materials on Blackboard are based on this book:

Elementary Principles of Chemical Processes, Third Edition, By Richard M. Felder and Ronald W. Rousseau



[Inexpensive Option](#)

ISBN: **047168757X**

## **COURSE ASSIGNMENTS AND GRADING**

Assignments for this course are assessed according to a designated Grading Rubric with crucial information that could affect your grade for each activity. You can find these rubrics by clicking on the appropriate assignment link in Blackboard and choosing to “View Rubric” from the button beneath the Points Possible for the assignment.

### **Grade Distribution:**

**100-90 = A      89-80 = B      79-70 = C      69-60 = D      59 and Below = F**

- |   |            |
|---|------------|
| <input type="radio"/> <b>Homework/Quizzes</b> | <b>20%</b> |
| <input type="radio"/> <b>Exams</b>            | <b>40%</b> |
| <input type="radio"/> <b>Final Exam</b>       | <b>40%</b> |

## **DISTRIBUTION OF COURSE MATERIALS**

The class is in person, but will be taught somewhat in the style of “Flipped Classroom.” Videos will be posted on Blackboard and problems will be worked out during the class period with minimum lecturing. It is the students responsibility to watch the videos before class. In the event of missed classes due to illness or otherwise, the videos will also be useful to help students remain on pace.

## **COVID-19 PRECAUTION STATEMENT**

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to [covidaction@utep.edu](mailto:covidaction@utep.edu), so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. If you wish to get the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org).

## **MASKS:**

While masks aren't required on campus, during this surge it is highly encouraged to wear masks in public settings – like classrooms.

## **COURSE CALENDAR**

A brief outline the course is below:

WEEK	TOPIC
1	Introduction
2	Introduction to Engineering Calculations
3	Processes and Process Variables
4	Fundamentals of Material Balances
5	Review, Exam 1
6	Fundamentals of Reactive Material Balances/Single Phase Systems
7	Fundamentals of Reactive Material Balances/Single Phase Systems
8	Review, Exam 2
9	Spring Break, No Class 3/14/2022-3/18/2022
10	Nonreactive Energy balances
11	Nonreactive Energy balances
12	Review, Exam 3
13	Reactive Energy Balances
14	Reactive Energy Balances
15	Reactive Energy Balances
16	Review, Exam 4

## ATTENDANCE POLICY

Many of the graded assignments will be completed during the class times, therefore it a good idea to attend class. **If you are sick, please do not come to class.** Missing tests and quizzes can be made up. Also note that most of the course material is available on Blackboard.

You will be successful in this class if you commit to:

- Reading/Viewing all course materials to ensure understanding of assignment requirements
- Asking questions
- Using the class time to work through problems

## TECHNOLOGY REQUIREMENTS

Content for this course 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. Check that your computer hardware and software are up-to-date and able to access all parts of the course.

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.

## LATE WORK POLICY

- Please turn in assignments on time. Homework assignments will be uploaded through blackboard.

## DROP POLICY

In order 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. **The drop deadline for the Spring 2023 semester is March 30, 2023**

Other important dates can be found by clicking [HERE](#)

## 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

### *Cheating, Plagiarism, Scholastic Dishonesty, and Student Discipline*

Students who engage in scholastic dishonesty will be subject to disciplinary action as stated in the UTEP-HoOP:

“Scholastic dishonesty (which includes the attempt of any student to present the work of another as his or her own, or any work which s(he) has not honestly performed, or attempting to pass any examination by improper means) is a serious offense and will subject the student to disciplinary action. The aiding and abetting of a student in any dishonesty is held to be an equally serious offense. All alleged acts of scholastic dishonesty should be reported to the Dean of Students for disposition. It is the Dean of Students’ responsibility to investigate each allegation, dismiss the allegation, or proceed with disciplinary action in a manner which provides the accused student his or her rights of due process.”

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](#).

Examples of cheating include, but are not limited to: Using unauthorized materials or devices during a test, using Chegg, or another online service to complete your homework assignments. Copying someone else's work during a test or quiz, etc.

## STUDENT RESOURCES

UTEP provides a variety of student services and support:

- [UTEP Library](#): Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- [Help Desk](#): Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- [University Writing Center \(UWC\)](#): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- [Math Tutoring Center \(MaRCS\)](#): Ask a tutor for help and explore other available math resources.
- [History Tutoring Center \(HTC\)](#): Receive assistance with writing history papers, get help from a tutor and explore other history resources.
- [Military Student Success Center](#): UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.
- [RefWorks](#): A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.