MEMORANDUM FOR STUDENTS ENROLLED IN CHEN 3360 – Section 001

SUBJECT: CHEN 3360 – Chemical Reaction Engineering - Administrative Instructions

Lecture times: T-Th 11:00 – 12:20 pm, RBN 2007

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Office Hours: MWF 12-2 or by appt

Welcome to CHEN 3360 – Chemical Reaction Engineering. In this course, students will learn the fundamentals of chemical kinetics and how those are applied to the design of chemical reactors. We will use the concepts of mole balances, reaction rate and stoichiometry to generate design equations for several reactor types, like batch systems, tubular reactors, and CSTR. Topics include the analysis of steady state and transient systems, and catalytic processes, including homogeneous and heterogeneous reactions. Specific cases, such as bioreactors, will also be discussed.

CHEN 3360 Chemical Reaction Engineering – Course Objectives:

Each outcome will be separately assessed using grades on exams. Students will have the ability to:

Course Outcomes	**Assessed By**
Determine reaction rates and mole balances, write balance equations and size reactors in terms of conversion, write rate laws and stoichiometry	Midterm 1
Combine reactors and reactions to design isothermal continuous and batch reactors, solve engineering problems involving multiple reactions	Midterm 2
Design nonisothermal PFRs, CSTRs and batch reactors	Final Exam

1. The course has two prerequisites which must be completed successfully prior to taking this course:
   - ✓ CHEN 3301 (Thermodynamics I)
   - ✓ MENG 3316 (Heat Transfer)

2. The goal of our faculty is to be commonly available to you for assistance, so you are encouraged and expected to seek supplemental instruction. There are several ways you can seek supplemental instruction:
   - ✓ You are welcome to stop by the instructor's office at any time. However, for your own satisfaction, you can ensure the instructor is available at the office by using the following options:
   - ✓ Come to office hours. This is the time the instructor has set aside to answer your questions;
   - ✓ E-mail or call the instructor to set up a mutually agreeable time to meet with the instructor,
   - ✓ E-mail your questions to the instructor (this is the least preferred option because of the limited effectiveness of e-mail communication), but it is acceptable if other options are not possible.

3. **Classroom Procedures:**
   - Bring study notes, **textbooks**, note-taking material, and calculator to every class. You may not borrow or exchange calculators during graded events. If your calculator fails during a graded exercise, I am not responsible to furnish a substitute. Class preparation is your individual responsibility.
   - Textbooks: "Elements of Chemical Reaction Engineering", 6th ed., H. Fogler, Prentice Hall, 2020. (**F**)
   - Recitations: Certain lectures will be used for recitation sessions. These will be the students' opportunity to practice problem-solving skills applying the concepts learned in lectures. These skills will be needed for solving homework, quizzes and exam problems.

4. **Evaluations:**
   a. *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 interpreted as academic dishonesty. Academic dishonesty will be subject to disciplinary action as outlined by the UT Tyler Student Guide on Conduct and Discipline.

b. *Homework assignments:* Homework will be assigned at the end of every chapter approximately every two weeks (see schedule below for Canvas due dates). 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, which is both accurate and correct. As such, both the presentation and the accuracy of your work is important, and both will be graded. It is critical that you show all of your work and leave "footprints" so that it can be easily followed. For each homework problem, the corresponding topic and numerical answers will be provided. You are encouraged to work in groups, but the work that you turn in should be your own. Homework assignments are ***due*** on Canvas.

c. *Late Submissions:* It is a basic principle of professionalism that **"Professionals are not Late."** A "COORDINATED LATE" submission occurs when you will miss the due date for a graded assignment and you contact me in advance. Notification immediately before the submission will not suffice. Point cuts up to the amounts below **may** be assessed for a "COORDINATED LATE" submission:

0-48 hours late	a deduction of 50% of the earned grade
More than 48 hours late	no credit

Obviously there are circumstances that will occur and make a timely submission impossible and I will work with you when and if they occur.

All homework assignments must be properly documented. As you are having your work reviewed, it is likely that you might receive help from your classmates, just simply document it. Information from the course textbooks (equations and outlines of procedures), class notes, or me is considered immediately available to all students and need not be acknowledged or documented with one exception. **YOU ARE REQUIRED TO ACKNOWLEDGE AND DOCUMENT ALL OTHER ASSISTANCE AND REFERENCES USED.**

d. *Participation grade:* Students are expected to be engaged in class and outside of the class. The instructor will assign a participation grade to each student based on the following observations:
- Attendance in class and punctuality;
- Level of participation in class, asking questions about the material and answering questions from the instructor;
- Engagement in recitation sessions, demonstrating initiative to work on problems, and actively participating in the discussions;
- Asking questions outside class: after class, during office hours, and by e-mail.

Attendance in class is the component with more weight on participation. A student that attends every class, but otherwise is not active will receive half of total points as participation grade.

e. *Homework and computational projects:* There will be seven homework assignments based on the chapters covered in class. The homework assignments contain the best practice problems for preparation for tests. Towards the end of the semester, particularly after Chapter 6, computational projects will be assigned to follow the content (solving systems of differential equations) which will need to be solved using google colab notebooks. Support for coding will be provided.

f. *Midterm Exams and Final Exam:* There will be two Midterm Exams and one Final exam. The Midterms will be eighty minutes long, and the Final will be two hours long. The dates for Exams are included in the course schedule. Official reasons for missing an exam are outlined in the "Student Handbook". You are required to take a make-up Exam, regardless of your reason for missing the scheduled Exam. Report any conflict to me as soon as possible prior to the Exam. You can use a **TI-30 calculator** (or FE equivalent), and ***an equation sheet will be provided by the instructor.***

5. **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.

6. **Grading:** Grades will be based entirely on the student's demonstrated ability to develop detailed, neat, organized, and correct solutions to the problems presented. Correct answers accompanied by incorrect, incomplete, or untidy solutions may receive no credit.

Course Points	
Computational projects (2 at 8.0 points each)	16
Homework (7 at 2.0 points each)	14
Participation (1 at 5.0 points)	5
Midterm Exams (2 at 20 points)	40
Final Examination (1 at 25 points)	25
Total	**100**

Grade Scale based on points	
90 points or higher	A
Between 80 and 90 points	B
Between 60 and 80 points	***C***
Between 40 and 60 points	D
Less than 40 points	F

You need at least 60 points total to pass the course with a C grade. You need to be above the class average to receive an A grade.

7. **Collection of Student Work:** Throughout the semester I will collect student work (best, average, and worst) for the ABET course and outcomes notebooks. This will require me to make a copy of your work, keep your original and return a copy of the graded work to you. I will not draw attention as to what level of work you accomplished.

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. **Student Responsibilities** - to know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please go to https://uttyler.smartcatalogiq.com/en/2024-2025/catalog/student-success/student-responsibilities/.

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. Information available at https://www.uttyler.edu/about/campus-carry/.

11. **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 https://www.uttyler.edu/current-students/registrar/. Each semester's Census Date can be found 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 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

12. **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 https://uttyler.policystat.com/policy/token_access/f1ebc54a-b811-42e3-999b-7defc74b2eb7/.

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://www.uttyler.edu/academics/success-services/disability-services/ 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 the ADA Coordinator. For more information, including filling out an application for services, please visit the SAR office located in the University Center, # 3150 or call 903.566.7079.

15. **Texas Pregnancy and Parenting Student Laws** - For UT Tyler to comply with Texas Laws SB 412, SB 459, and SB 597/HB 1361, pregnant or parenting students must contact the Parenting Student Liaison at parents@uttyler.edu and complete the Pregnant and Parenting Self-Reporting Form. Faculty with students who have opted into these resources will receive a Maxient email from the Parenting Student Liaison with the appropriate and required accommodations. Accommodations for pregnant and parenting students mirror the SAR accommodations process, and these accommodations are required. Faculty will only provide the accommodations documented by the Parenting Student liaison.

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. 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 of the semester. For more info, refer to https://uttyler.smartcatalogiq.com/en/2024-2025/catalog/undergraduate-academic-policies/class-attendance-excused-absences/

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 must exit the buildings 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 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 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;
- discussing the contents of an exam with another student who will take the exam;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- divulging the contents of an exam, for the purpose of preserving questions for use by another, when the instructors has designated that the exam is not to be removed from the exam 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;
- 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, 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. Plagiarism checks will be conducted on work turned in by students. Copying full documents from a source IS considered scholastic dishonesty, even if such source is cited.

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. **Artificial Intelligence (AI) Language for Syllabi:**

UT Tyler is committed to exploring and using generative AI tools as appropriate for the discipline and task undertaken. We encourage discussing generative AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of generative AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any generative AI tool. Additionally, users should be aware that generative AI tools rely on predictive models to generate content that may appear correct but shown sometimes to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit.

In this class, generative AI is permitted only for specific assignments or situations, and appropriate acknowledgment is required. This course has specific assignments where generative AI tools (such as ChatGPT, Copilot or others) are permitted. When AI use is permissible, it will be clearly stated in the assignment directions, and all use of generative AI must be appropriately acknowledged and cited. Using generative AI tools outside of these parameters violates UT Tyler's Honor Code, constitutes plagiarism, and will be treated as such.

21. **UT Tyler Resources for Students:**

- Writing Center: https://www.uttyler.edu/academics/success-services/writing-center/
- Tutoring Center: https://www.uttyler.edu/academics/success-services/tutoring/
- Counseling Center: https://www.uttyler.edu/student-life/health-wellness/student-counseling-center/

Tentative Schedule:

Week of:	Topic for reading	Deliverables
Jan 12th	Ch 1 – General mole balances and reactor types	
Jan 19th	Ch 2 – Design equations with conversion	HW1 due Jan 23rd
Jan 26th	Ch 3/4 – Rate laws and stoichiometry	
Feb 2nd	Ch 5 – Design of batch reactors	HW2 due Feb 6th
Feb 9th	Ch 5 – Design of flow reactors	
Feb 16th	Ch 5 – Pressure drop	HW3 due Feb 20th
Feb 23rd	Ch 6 – Molar flow rate-based design	Midterm 1 on Feb 24th
Mar 2nd	Ch 6 – Special reactors	HW4 due Mar 6th
Mar 16th	Ch 8 – Multiple reactions algorithm	
Mar 23rd	Ch 8 – Multiple reactions algorithm	HW5 due Mar 27th
Mar 30th	Ch 9 – Enzymes and bioreactions	Midterm 2 on Mar 31st
Apr 6th	Ch 10 – Catalysis	HW6 due Apr 10th
Apr 13th	Ch 11 – Energy balances	
Apr 20th	Ch 12 – Nonisothermal reactors	HW7 due Apr 24th
Apr 27th		Final exam Tue April 28th 11 - 1 pm