

## **Chemistry 1465 – Chemistry for Engineers** **Summer 2019 (first 5-week session)**

### **Instructor:**

Dr. Jimmy R. Rogers (Profile URL: <https://mentis.uta.edu/explore/profile/jimmy-rogers>)

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**Section Information:** CHEM 1465-001 meets Monday-Thursday, 10:30 am – 12:30 pm in SEIR 194

### **Required Materials:**

- 1) *Chemistry for Engineers*, First Edition, by Jimmy R. Rogers.
- 2) *CHEM 1465 Lab Manual*, Fourth Edition (green cover) and duplicating-page lab notebook (sold at the UTA bookstore).
- 3) A scientific calculator (non-programmable and non-graphing; for example, Texas Instrument 30 XIIS is recommended).

**Note that TI-36X Pro is NOT allowed.**

**Course Description:** An introduction to important concepts and principles of chemistry with emphasis on areas considered most relevant in an engineering context. Topics include chemical stoichiometry, bonding, chemical thermodynamics, equilibria, electrochemistry, and kinetics. Engineering students may substitute the eight-hour sequence CHEM 1441 and CHEM 1442 for this class, but not either CHEM 1441 or CHEM 1442 alone. Students who complete CHEM 1465 and subsequently change majors to curricula that require both CHEM 1441 and CHEM 1442 may substitute CHEM 1465 for CHEM 1441. Prerequisite: C or better in MATH 1322 or C or better in MATH 1323 or C or better in MATH 1324 or C or better in MATH 1421 (or concurrent enrollment) or MATH 1426 (or concurrent enrollment) or HONR-SC 1426 (or concurrent enrollment) or MATH 2425 (or concurrent enrollment) or HONR-SC 2425 (or concurrent enrollment).

**Attendance:** At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. *As the instructor of this section, I have elected to take attendance because most students in General Chemistry find that faithful attendance is necessary for succeeding in this course.* However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

**Expectations for Out-of-Class Study:** The lecture for this class meets for a total of eight hours a week during the fast-paced five-week summer session. The rule of thumb for success in Chemistry courses is to study a minimum of 2-3 hours for every hour of lecture. Therefore, students enrolled in this course should expect to spend **at least an additional sixteen to twenty hours per week** of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, and preparing for lab.

### **Other Requirements:**

- 1) Read this syllabus carefully. You are responsible for knowing all of the course policies listed in this syllabus.
- 2) Prior to class, read the chapter which will be covered in lecture.
- 3) Review your lecture notes after each class. Correct obvious errors and note topics which require further study or clarification.
- 4) Work **all** of the homework problems. Do **not** look at the answers until you have given your **best** effort to solve the problem on your own. **Practice the problems that you find difficult until you are able to solve them without consulting the answers. This is the one of the most effective strategies that you can use to prepare for exams.**
- 5) Don't procrastinate. These concepts take time to sink in, and you may have to practice these exercises over a period of many days in order master the necessary skills.

**Grading:** The grade in this course will be determined in the following manner.

Grade Category	Category Weight
Mid-Term Exam Average	50%
Comprehensive Final Exam	25%
Laboratory Average	25%
<b>Total Course Score</b>	<b>100%</b>

- 1) Four mid-term exams will be given. These exams will cover the reading, lecture material, and assigned problems. The final exam will be comprehensive and will be given on **Monday, July 8, 10:30 am – 12:30 pm.**
- 2) **Make-up Exam Policy.** No make-up exams will be given, and any missed exams will result in a grade of zero. However, the final exam score will replace the lowest mid-term exam score if it is to the student's benefit. The final exam score will not be replaced.
- 3) Exams will not be curved, and individual extra-credit assignments will not be given.
- 4) **If you drop or fail Chemistry 1465, grades earned in the lab cannot be carried over when you re-take Chemistry 1465.**
- 5) The letter grade will be assigned according to the following scale:

<u>Total Numerical Grade</u>	<u>Letter Grade</u>
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

### Examinations

Five exams will be given. These exams will cover the reading, lecture material, homework, and assigned problems. Four mid-term exams (Exam 1 through Exam 4) will be administered during the semester in-class period. The final exam is a comprehensive, departmental exam.

### Homework

Due to the fast-paced nature of summer courses, we will not use online homework during this course, and homework will not be taken up for a grade. However, students are expected to work all of the problems in the textbook as well as other practice questions provided by the instructor. The best way to learn the concepts covered in this course is to faithfully work all of the homework problems until you are able to successfully answer any of them without consulting your textbook or your notes.

**Examination Needs:** You must bring the following to each examination.

- 1) Scientific Calculator (You may not use a graphing calculator or a calculator capable of storing alpha-numeric/textual material). (Note that TI-36X Pro is **NOT** allowed.)
- 2) No. 2 pencils with eraser.
- 3) Scantron 882, available at the UTA Bookstore (or, an answer form specified by your instructor).
- 4) UTA Student ID Card.
- 5) Students are NOT allowed to have access to cell phones during any exam.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. *After the late registration period, students must see their academic advisor to drop a class or withdraw.* Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

### Canvas

Students are responsible for checking the Canvas course website as well as their UTA email (the one ending in "mavs.uta.edu") for correspondence and announcements related to the course. Students can access their courses by clicking on the Canvas link

on the UTA home page, or through myapps.uta.edu. Students will be prompted by UTA's Single Sign-on to enter their password. Instructional materials (videos, activity sheets, study guides, etc.) will be posted on the course website.

**Tentative Lecture Schedule:** The following represents a *tentative* schedule of lectures and examination material for this semester. Tentative exam dates are specified in **bold**. The exact dates of the four midterm exams will be announced in class. All due date of homework assignments are available directly on its website. You will be responsible for checking them and completing them by the due dates. ***As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.*** Note that the Final Exam is scheduled for **Monday, July 8, 10:30 am – 12:30 pm**. Make sure to save this date because no make-up final exam will be given.

<b>Day:</b>	<b>Lecture Material</b>
June 3	Chapter 1, "Introduction to the Study of Chemistry."
June 4	Chapter 2, "Atoms, Molecules, and Ions."
June 5	Chapter 3, "Stoichiometry."
June 6	Continue Chapters 1-3.
June 10	Finish Chapters 1-3.
June 11	<b>Exam 1 over Chapters 1-3.</b> Chapter 4, "Gases."
June 12	Chapter 5. "Thermochemistry."
June 13	Chapter 6. "The Electronic Structure of Atoms."
June 17	Finish Chapters 4-6.
June 18	<b>Exam 2 over Chapters 4-6.</b> Chapter 7, "Introduction to Chemical Bonding."
June 19	Chapter 8, "Molecules, Materials, and Metals."
June 20	Continue Chapters 7 and 8.
June 24	Finish Chapters 7 and 8. <i>Monday, June 24 is the last day to drop classes. Submit requests to advisor prior to 4:00 PM.</i>
June 25	<b>Exam 3 over Chapters 7-8.</b> Chapter 9, "Chemical Equilibrium."
June 26	Chapter 10, "Chemical Thermodynamics."
June 27	Chapter 11, "Electrochemistry."
July 1	Finish Chapters 10-11
July 2	<b>Exam 4 over Chapters 10-11.</b> Chapter 12, "Chemical Kinetics."
July 3	Finish Chapter 12.
July 4	<i>Independence Day Holiday. Classes do not meet.</i>
<b>Monday, July 8</b>	<b>Comprehensive Departmental Final Examination, 10:30 am – 12:30 pm.</b>

#### **Important Dates**

June 3	First Day of Classes
June 6	Census Date
June 24	Last Day to Drop Classes: submit requests to advisor prior to 4:00 PM.
July 3	Last Day of Classes
July 4	Independence Day Holiday. Classes do not meet.
Monday, July 8	Final Exam from 10:30 am – 12:30 pm.

**Cell Phones:** Please silence all cell phones prior to class. *Texting during class is inappropriate and will not be tolerated.*

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include [tutoring](#), [major-based learning centers](#), developmental education, [advising and mentoring](#), personal counseling, and [federally funded programs](#). For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

Chemistry Clinic: The Chemistry Clinic, located in Room 318 Science Hall, will be staffed with tutors available to answer your questions related to lecture and homework. This service is free for all UT-Arlington students enrolled in CHEM 1441 and 1442. Opening hours will be posted on the door of SH 318.

(Note: The Chemistry Clinic will be closed on July 4, as well as any day that the University is closed due to inclement weather.)

University Tutorial & Supplemental Instruction: (Ransom Hall 205) UTSI offers a variety of academic support services for undergraduate students, including: 60 minute one-on-one [tutoring](#) sessions, [Start Strong](#) Freshman tutoring program, and [Supplemental Instruction](#). Office hours are Monday-Friday 8:00am-5:00pm. For more information, visit [www.uta.edu/utsi](http://www.uta.edu/utsi) or call 817-272-2617.

The IDEAS Center: (2<sup>nd</sup> Floor of Central Library) offers FREE tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at [www.uta.edu/IDEAS](http://www.uta.edu/IDEAS), or call (817) 272-6593.

**Disability Accommodations**: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)** [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services, (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy**: The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit [uta.edu/eos](http://uta.edu/eos)

**Title IX Policy**: The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](mailto:jmhood@uta.edu).*

**Academic Integrity**: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule 50101, §2.2*, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred

to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

**Lab Safety Training: Students registered for this course must complete all required lab safety training prior to entering the lab and undertaking any activities.** Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., through the following August) and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned. Instructions for completing lab safety training are given separately in the lab syllabus of this course.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

**Student Feedback Survey:** At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** For semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located **at the front/back of the room**. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

<p><b>Emergency Phone Numbers:</b> In case of an on-campus emergency, call the UT Arlington Police Department at <b>817-272-3003</b> (non-campus phone), <b>2-3003</b> (campus phone). You may also dial 911.</p>
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