

CHEM 1441 General Chemistry ISection **001 MWF 10:00 – 10:50 am (Science Hall 100)****Instructor:****Dr. Jimmy R. Rogers** (Profile URL: <https://mentis.uta.edu/explore/profile/jimmy-rogers>)**Office Hours: 2:00-3:30 pm Monday-Thursday****Science Hall 300 D, 817-272-5442****jimrogers@uta.edu****Required Materials:**

- 1) Access to the online tutoring system: ALEKS (www.aleks.com). Instructions for the ALEKS online homework system are posted on Blackboard (<https://elearn.uta.edu>).
- 2) *General Chemistry 1*, 1st edition, by Jimmy R. Rogers.
- 3) **CHEM 1441 Lab Manual** (You need the most current edition sold at the UTA bookstore) and **duplicating-page lab notebook** (sold at the UTA bookstore).
- 4) A scientific calculator (non-programmable and non-graphing; for example, Texas Instrument 30 XIIS is recommended). **Note that TI-36X Pro is NOT allowed.**
- 5) i>clicker 2

Course Prerequisites: This course is designed for science majors, and all students should have completed MATH 1302 or its equivalent. Students must pass the departmental placement assignment. Students who have not had high school chemistry are advised to take CHEM 1300 first. To receive credit for CHEM 1441, you must also be enrolled in a CHEM 1441 lab. Engineering majors are encouraged to take CHEM 1465 instead of this course, and students pursuing a career in nursing should take CHEM 1451 instead of CHEM 1441. All other non-science majors should take CHEM 1345 and CHEM 1346 instead of CHEM 1441 and CHEM 1442.

Course Description and Student Learning Outcomes: Upon completing the course, the student should

- 1) understand fundamental chemical concepts, including atomic and molecular structure, chemical bonding, some chemical reactions, the relationship of the electronic structure of elements to the periodic table, and periodic physical and chemical properties of elements and compounds;
- 2) perform quantitative calculations related to chemical stoichiometry, the behavior of gases, and enthalpy changes; and
- 3) be prepared to enter CHEM 1442.

Attendance Policy: At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. 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: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional twelve 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 in the solutions manual 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 solutions manual. 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	40%
Comprehensive Final Exam	20%
Laboratory Average	25%
Homework Average	10%
Class Participation Average	5%
Total Course Score	100%

- 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 **Wednesday, May 9, 5:30-8:00 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 CHEM 1441, grades earned in the course (including the lab) cannot be carried over when you re-take CHEM 1441.**
- 5) The letter grade is 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

Major Assignments and 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 comprehensive and departmental, and it will be administered in **two hours and 30 minutes**. Web-based homework problems will be assigned and graded. More information (Registration, Login and Grading Policy) about the online homework system will be posted on the Blackboard course site. None of the homework assignments will be dropped. All due dates for homework assignments are directly available on the online homework site. You are responsible for checking them and completing them by the due dates.

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).
- 2) No. 2 pencils with eraser.
- 3) NCS Answer Sheet 4521, 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.

Participation

Class participation is required and will be 5% of your grade. Your participation average will be determined using the i-clicker 2, which all students are required to bring to each class. If you forget to bring your i-clicker, or if you allow the battery to run out, you will receive a zero participation grade for the day. The participation grades for two class periods will be dropped, so if you forget to bring your i-clicker or if you are absent for up to two days, your participation grade will not be lowered. However, if you have more than two absences or two periods where you have no i-clicker, your participation grade will be lowered accordingly.

Blackboard

Students are responsible for checking the blackboard course website (<https://elearn.uta.edu/>) as well as their UTA email (the one ending in "mavs.uta.edu") for correspondence and announcements related to the course. Instructional materials (videos, activity sheets, study guides, etc.) will be posted on the course website.

Homework Grade

Your homework grade will be calculated using the following formula:

$$\text{Homework Grade} = 0.5 \times (\text{Chapter Average}) + 0.5 \times (\text{Course Mastery})$$

Chapter Average is the average of homework scores (including the pre-course assignment score). Course Mastery (or Pie Progress in Gradebook) represents the topics you have learned in this course by 11:59 pm (CT) on **Tuesday, May 8, 2018**. Course Mastery is NOT equivalent to Chapter Average. The student might have a 100% average in all chapter assignments, but you might not have 100% Course Mastery because topics you answer incorrectly during each periodic assessment will be added back to your "ALEKS Pie".

There are two ways to improve Course Mastery. 1) If you complete a homework assignment before its due date, then you can work on any topics left on the "ALEKS Pie". 2) After you complete the last assignment, you will be prompted to take the final assessment. After the final assessment, you will be able to complete any topics left on "ALEKS Pie". **Our recommendation is the first option:** Complete each homework assignment before its due date and start working on left-over topics that you need to master so that you can avoid cramming just before the final exam.

Tentative Lecture Schedule: The following represents a *tentative* schedule of lectures and examination material for this semester. Tentative exam weeks 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 Wednesday, May 9 from 5:30 to 8:00 PM. Make sure to save this date because no make-up final exam will be given.**

Week of:	Lecture Material
January 16-19	Chapter 1, "Introduction to the Study of Chemistry."
January 22-26	Chapter 2, "Atoms, Molecules, and Ions."
Jan. 29 – Feb. 2	Chapter 3, "Stoichiometry."
February 5-9	Finish Chapter 3. Exam 1 on Chapters 1, 2, and 3.
February 12-16	Chapter 4, "Reactions in Aqueous Solutions."
February 19-23	Chapter 5, "Gases."
Feb. 26 – Mar. 2	Finish Chapter 5.
March 5-9	Exam 2 on Chapters 4 and 5. Chapter 6, "Thermochemistry."
March 12-16	<i>Spring Break: Classes Do Not Meet</i>
March 19-23	Chapter 7, "The Electronic Structure of Atoms."
March 26-30	Finish Chapter 7.
March 30	<i>Last Day to Drop Classes: submit requests to advisor prior to 4:00 PM.</i>
April 2-6	Exam 3 on Chapters 6 and 7. Chapter 8, "Introduction to Chemical Bonding."
April 9-13	Finish Chapter 8.
April 16-20	Chapter 9, "Molecular Shapes and Polarity."
April 23-27	Finish Chapter 9. Exam 4 on Chapters 8 and 9.
April 30 – May 4	Chapter 10, "Valence Bond Theory and Molecular Orbital Theory."
May 9	Comprehensive Departmental Final Examination, 5:30-8:00 PM. Room locations for the final exam will be announced in class shortly before the end of the semester.

Important Dates

January 16	First Day of Classes
January 31	Census Date
March 30	Last Day to Drop Classes: submit requests to advisor prior to 4:00 PM.
May 4	Last Day of Classes
May 9	Final Exam from 5:30 PM to 8:00 PM.

Cell Phones and Pagers (or any un-necessary electronic gadgets): Please silence all cell phones and pagers prior to class.

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, 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 during the Labor Day and Thanksgiving holidays, 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 or call 817-272-2617.

The IDEAS Center: (2nd 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, or call (817) 272-6593.

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/>).

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 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.

Counseling and Psychological Services (CAPS) 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.*

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 or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or 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., Fall through Summer II) 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.

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.

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381.

This course satisfies the University of Texas at Arlington core curriculum requirement in life and physical sciences. The italicized student learning outcomes required of core courses below will be assessed for each student in the laboratory portion of the course. The final lab report will be assessed to determine how a student has mastered critical thinking, communication, and empirical and quantitative skills. A teamwork assessment (peer evaluation) will be completed by each student in lab to determine how students work together in lab groups to achieve the student learning outcomes described below.

Student Learning Outcomes:

- understand fundamental chemical concepts, including atomic and molecular structure, chemical bonding, some chemical reactions, the relationship of the electronic structure of elements to the periodic table, and periodic physical and chemical properties of elements and compounds.
- perform quantitative calculations related to chemical stoichiometry, the behavior of gases, and enthalpy changes (empirical and quantitative skills)
- learn the scientific process by designing and conducting experiments, collecting and analyzing data, and presenting results, in both written and oral formats (critical thinking, communication)
- learn essential laboratory procedures and protocols (teamwork)
- *Critical Thinking Skills:* to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information;
- *Communication Skills:* to include effective development, interpretation and expression of ideas through written, oral and visual communication
- *Empirical and Quantitative Skills:* to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- *Teamwork:* to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

The Signature Assignment for satisfying the Core Curriculum Requirement in CHEM 1441 will be "Experiment UTA-509: Spectrophotometric Determination of Purity and Concentration".