Syllabus
Chemistry 1441
Summer I 5-week, 2016
Mo, Tue, Wed, Thu 10:30 am – 12:30 pm

Instructor:
Dr. Peter Kroll
Office hours: Mon-Thu, 12:45-1:30 pm, directly after lecture, and upon appointment
353 Chemistry and Physics Building / check room 315 CRB (Computational Lab)
817-272-3814
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Required Materials:
- A textbook
recommended: "Chemistry: The Molecular Nature of Matter and Change (7/e)" by Silberberg and Amateis, a good alternative is the OpenStax College Chemistry resource
available to download for free at https://cnx.org/content/col11760/1.9
- 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).
- 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 Prerequisites: This course is intended for science majors. All students should have completed MATH 1302 (College Algebra) or its equivalent. Proficiency with numbers, algebraic equations, solving simultaneous equations is necessary to succeed in this class. 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.
Students pursuing a career in nursing should take CHEM 1451 instead of CHEM 1441.
All other non-science majors should take CHEM 1445 and CHEM 1446 instead of CHEM 1441 and CHEM 1442.

Please note that the level of expectation and difficulty of CHEM 1441 exceeds that of CHEM 1465, 1451, or 1445. If CHEM 1441 is not a requisite of your degree plan, you should consult again with your undergraduate advisor to see, if there are other options.

Tentative Lecture Schedule: The following represents a tentative schedule of lecture and examination material for this semester. Chapter titles follow Silberberg and Amateis. *The exact dates of the four major exams will be announced in class.*

Week of	Lecture Material
June 6	Tuesday, July 10: classes start. Chapter 1, "Keys to the Study of Chemistry" Chapter 2, "The components of Matter" Begin Chapter 3, "Stoichiometry of Formulas and Equations" June 9 is Census date
June 13	**Exam 1.** Finish Chapter 3 Chapter 4, "Three Major Classes of Chemical Reactions" Chapter 5, "Gases …"
June 20	**Exam 2.** Finish Chapter 5. Chapter 6, "Thermochemistry." Chapter 7, "Quantum Theory …" Chapter 8, "Electron Configuration …"
June 27	**Exam 3** *June 27 is the last day that you can drop a class.* Chapter 9, "Models of Chemical Bonding" Chapter 10, "The Shapes of Molecules."
July 5 (4)	**Exam 4.** Note that July 4th is a Holiday — No classes! Finish Chapter 10 Chapter 11, "Theories of Covalent Bonding" Chapter 12, "Intermolecular Forces…."
July 7	Thursday, July 7, Last day of Class
July 11	**Comprehensive Final Exam.**

Dropping the Course:

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. Contact the Financial Aid Office for more information.
Paperwork: When dropping the course, *you* are responsible for seeing that all of the proper paperwork is completed and submitted to the appropriate university officials. If this paperwork is not completed, you will receive a letter grade corresponding to your earned grade, including zeros for all missed work.

Grading:		
	Lab Average	25%
	Lab Problem Session Average	5%
	Course Participation /Attendance	5%
	4 one-hour exams	40%
	Comprehensive Final	25%

Four one-hour exams and one 2 ½ hour final exam will be given. In short exams, given the first lecture hour every week, expect 25-30 questions to be answered in 50-60 minutes. The exams will contain essay/work-out questions similar to end-of-chapter problems you find in the book. There will NOT be multiple-choice questions. These exams will cover the reading, lecture material, and indicated problems. Each exam will cover the material acquired so far in the course, with an emphasis on course content covered since the previous exam. Nevertheless, their nature is always comprehensive; thus, expect questions addressing material already covered in previous exams (about 20%) as well.
The final exam will be comprehensive and cover the entire course. It will be given on Monday, July 11. Grades will be assigned according to the following scale:

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

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 one-hour exam score if it is to the student's benefit.

Lab Problem Sessions
Lab Problem Sessions will be conducted during the first few minutes of most labs. These sessions are intended to provide a setting for students to work additional problems based on current lecture topics. During these sessions, students are encouraged to work in groups so that the immediate feedback from their peers and from the laboratory teaching assistant can help dispel common chemistry misconceptions. At the end of each session students will show mastery through a graded quiz, contributing 5% to the each student's overall average in the course.

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.

If you drop or fail Chemistry 1441, grades earned in the lab cannot be carried over when you re-take Chemistry 1441.

Homework/Quiz/Class Participation: There will be no graded homework assignments.

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

Electronic Communication Policy: The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. ***Students are responsible for checking their MavMail regularly.*** Information about activating and using MavMail is available at http://www.uta.edu/oit/email/. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.

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

Scientific Calculator (You may not use a graphing calculator or a calculator capable of storing alpha-numeric/textual material.)
No. 2 pencils with eraser
UTA Student ID Card or other valid Government-issued photo ID
Students are not allowed to have access to cell phones or digital pagers during any exam.

Course Goals:
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 Chemistry 1442.

Chemistry Assistance:

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. Hours of the Chemistry Clinic will be announced in class. This service is free for students enrolled in Chemistry 1441 and 1442.

Science Education and Career Center: The Science Education and Career Center, located in Room 105 of the Life Science Building, provides a variety of materials for assisting Chemistry students, including old exams.

SOAR Cost Share Tutoring: SOAR (Students Obtaining Academic Readiness) is located in 132 Hammond Hall and offers free academic support for qualifying students and low-cost services for all students, including Cost Share Tutoring.

Strategies for Succeeding in Chemistry 1441:

1. Attend *every* lecture. A very strong correlation exists between attendance and success in Chemistry 1441. Because the topics covered in this course build on each other, missing even one class can mean the difference between success and failure in the course.
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 identify topics, which require further study or clarification.
4. Work all of the suggested homework problems. Do not look in the solutions manual until you have given your best effort to solve the problem on your own.
5. Use practice tests available from the Science Education and Career Center.
6. Spend the necessary amount of time studying chemistry. The rule of thumb for succeeding in Chemistry is three to four hours of study for every hour of lecture. This means that during a summer 5-week course your entire day will be devoted to your class.
7. 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.
8. Form a study group. This is your first avenue for getting help. Be able to communicate with each other on short notice, not just before class.

Grade Replacement Policy and Taking the Course Pass/Fail

Students enrolling in this course with the intention of replacing a previous grade earned in the same course must declare their intention to do so with the registrar *no later than Census Date* (July 16, 2012). Please consult the Undergraduate Catalog for the university policy regarding grade replacement.

If P or F is a grade option in this class and you intend to take this class for a pass/fail grade instead of a letter grade, you *must* inform the instructor, through the necessary paperwork, of your intentions *before* the census date (July 16, 2012). Please consult the Undergraduate Catalog for the university policy regarding taking a course pass/fail.

Academic Dishonesty:

All students are expected to pursue their scholastic careers with honesty and integrity, and the Department of Chemistry and Biochemistry will not tolerate academic dishonesty in any form. "Scholastic dishonesty includes but is not limited to cheating, 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." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, subsection 3.2, Subdivision 3.22)

Examples of academic dishonesty includes:

- exchanging answers or information during a test or quiz
- looking at another student's paper during a test or quiz
- bringing notes in any form into the test or quiz, including written notes (crib sheets), digitally stored information (including formulas, constants, alpha-numeric material or text), or notes stored in any other medium
- looking at a book or other unauthorized source during the quiz or test

During tests or quizzes, students are not allowed to use any hand-held calculators or computers which possess the capability of storing alpha-numeric or textual material. If the instructor allows the use of calculators on a particular test, then students may only use scientific calculators which are non-programmable. In addition, students are not allowed to have access to cell phones or digital pagers during any test or quiz. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

Americans with Disabilities Act

The University of Texas at Arlington is committed to the spirit and letter of federal equal opportunity legislation. The Americans with Disabilities Act (ADA) provides those with disabilities with the same opportunities as all citizens.

If you require an accommodation based on disability, I would be happy to meet with you in the privacy of my office, during the first week of the semester, to make sure you are appropriately accommodated.

Bomb Threats: In the event of a bomb threat to a specific facility, University Police will evaluate the threat. If required, exams may be moved to an alternate location, but **exams will not be postponed**. UT-Arlington will prosecute those phoning in bomb threats to the fullest extent of the law.

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://wweb.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). 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.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.
Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: 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. For information regarding Title IX, visit uta.edu/titleix.

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 as they see fit in their courses, including (but not limited to) 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. Violations to the academic integrity policy may result in the grade "F" in the course.

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.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be 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 enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week: 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.

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