Chemistry 1441 – General Chemistry 1
Fall 2014

Instructor:
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Required Materials:

Chemistry: The Molecular Nature of Matter and Change, 7th Edition, by Silberberg and Amateis
Access to ALEKS online assessment and learning (more information to be given in class and/or on Blackboard)

Course Prerequisites: This course is intended for science majors, and all students should have completed MATH 1302 or its equivalent. 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 1445 and CHEM 1446 instead of CHEM 1441 and CHEM 1442.

Tentative Lecture Schedule: The following represents a tentative schedule of lecture and examination material for this semester. *The exact dates of the four major exams will be announced in class.* Note that the Comprehensive Departmental Final Exam is scheduled for ***Wednesday, December 10, at 5:30 PM***.

Week of:	**Lecture Material**
August 21-22	Orientation and begin Chapter 1, "Keys to the Study of Chemistry."
August 25-29	Chapter 2, "The Components of Matter."
September 1	*Labor Day Holiday. Classes do not meet.*
September 2-5	Chapter 3, "Stoichiometry of Formulas and Equations."
September 8-12	Continue Chapter 3.
September 15-19	**Exam 1 on Chapters 1, 2, and 3.** Chapter 4, "Three Major Classes of Chemical Reactions."
September 22-26	Finish Chapter 4. Begin Chapter 5, "Gases and the Kinetic Molecular Theory."
Sept. 29 – Oct. 3	Continue Chapter 5.
October 6-10	**Exam 2 on Chapters 4 and 5.** Begin Chapter 6, "Thermochemistry: Energy Flow and Chemical Change."
October 13-17	Continue Chapter 6. Begin Chapter 7, "Quantum Theory and Atomic Structure."
October 20-24	Continue Chapter 7. Begin Chapter 8, "Electron Configuration and Chemical Periodicity."
October 27-31	Continue Chapter 8.
October 29	*Last day to drop a class. Please review UT-Arlington's Drop Policy below.*
November 3-7	**Exam 3** on Chapters 6, 7, and 8. Begin Chapter 9, "Models of Chemical Bonding."
November 10-14	Continue Chapter 9. Begin Chapter 10, "The Shapes of Molecules."
November 17-21	Continue Chapter 10.
November 24-26	Finish Chapter 10. **Exam 4** on Chapters 9 and 10.
November 27-28	*Thanksgiving Holiday. Classes do not meet.*
December 1-3	Chapter 11, "Theories of Covalent Bonding."
December 10	**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.

Dropping the Course:
Students may drop or swap (i.e., add/drop simultaneously) 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/).

Paperwork: When dropping the course, *you* are responsible for seeing that all of the proper paperwork is completed and submitted to your academic advisor. If this paperwork is not completed, you will receive a letter grade corresponding to your earned grade, including zeros for all missed work.

Grading: Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance falls below satisfactory levels.

Lab Average	25%	
Homework	10%	
4 mid-term exams	40%	
Comprehensive Final Exam	25%	***Wednesday, December 10, 5:30-8:00 PM***

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, December 10, 5:30-8:00 PM***. 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.

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

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, attendance alone is not sufficient. In order to succeed in the course, you must master the material, and this requires active participation. Participation includes advance preparation of reading assignments, working online homework problems as well as end-of-chapter problems in the textbook, and involvement with classroom discussions. You are responsible for all of the material covered in the lectures, the assigned text, and the problems.

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.

Homework: The ALEKS online learning and assessment system will be used as the homework grade in this class. More information will be given in class and/or posted on Blackboard.

Electronic Communication Policy: 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.

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
NCS Answer Sheet 4521, or answer sheet specified by your instructor (available at the UTA Bookstore)
Photo ID, such as UT-Arlington Student ID card or valid Driver's License
Students are not allowed to have access to cell phones during any exam.

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

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.

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 www.uta.edu/resources.

Problem-Solving Skills Session: Dr. Rogers will conduct a "Problem-Solving Skills Session" each Thursday afternoon, 3:30-5:00 PM in CRB 114. Attendance is optional, and students from all Chemistry 1441 sections are invited to attend.

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 Chemistry 1441 and 1442. Unless otherwise posted, the Chemistry Clinic will be open the following hours:

Monday – Thursday, 9:00 AM – 7:00 PM
Friday, 9:00 AM – 5:00 PM
Saturday, 11:00 AM – 4:00 PM

(Note: The Chemistry Clinic will be closed on Labor Day and Thanksgiving holidays, as well as any day that the University is closed due to inclement weather.)

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.

UTSI: The University Tutorial and Supplemental Instruction office provides tutoring services for this class. Supplemental Instruction, or SI, is a free service that helps students from this class work in groups to understand class concepts. Tutoring helps students develop and grow strong study habits by working one-on-one with a tutor. To find out when and where your class's SI sessions are, check the SI schedule at www.uta.edu/utsi. To register for tutoring services, visit the UTSI Office in Ransom Hall Room 205. For more information, visit www.uta.edu/utsi or call 817-272-2617.

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. Please follow the instructions listed on the *Chemistry 1441 Laboratory Syllabus*.

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 note 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 hours of study for every hour of credit earned. This means that at a minimum you should plan to study Chemistry 12 hours each week.
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.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a 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.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: All students enrolled in this course 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.*

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.

Americans with Disabilities Act: The University of Texas at 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)*. 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 that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. 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.

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. 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.

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.

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
- 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*.

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.