

# Syllabus Chemistry 1441 Fall 2012

## Instructors:

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**Required Materials:** *Chemistry: A Molecular Approach*, Second Edition, by Nivaldo J. Tro  
Mastering Chemistry Access (available with the Tro textbook and from <http://masteringchemistry.com> )

**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 **Friday, December 7, at 5:30 PM.**

| Week of:         | Lecture Material   |
|------------------|--|
| August 23-24     | Orientation and begin Chapter 1, "Matter, Measurement, and Problem-Solving."   |
| August 27-31     | Continue Chapter 1. Begin Chapter 2, "Atoms and Elements."   |
| September 3      | <i>Labor Day Holiday. Classes do not meet.</i>   |
| September 4-7    | Continue Chapter 2. Chapter 3, sections 3.1-3.6, "Molecules, Compounds, and Chemical Equations."   |
| September 10-14  | <b>Exam 1</b> on Chapters 1, 2, and 3 (sections 3.1-3.6). Finish Chapter 3.  |
| September 17-21  | Chapter 4, "Chemical Quantities and Aqueous Reactions."  |
| September 24-28  | Chapter 5, "Gases."  |
| October 1-5      | Continue Chapter 5.  |
| October 8-12     | <b>Exam 2</b> on Chapters 3 (sections 3.7-3.11), 4, and 5. Begin Chapter 6, "Thermochemistry."   |
| October 15-19    | Continue Chapter 6. Begin Chapter 7, "The Quantum-Mechanical Model of the Atom."   |
| October 22-26    | Continue Chapter 7. Begin Chapter 8, "Periodic Properties of the Elements."  |
| Oct. 29 – Nov. 2 | Continue Chapter 8.  |
| October 31       | <i>Last day to drop a class. Please review UT-Arlington's Drop Policy below.</i>   |
| November 5-9     | <b>Exam 3</b> on Chapters 6, 7, and 8. Begin Chapter 9, "Chemical Bonding I: Lewis Theory."  |
| November 12-16   | Continue Chapter 9. Begin Chapter 10, "Chemical Bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory."  |
| November 19-21   | Continue Chapter 10.   |
| November 22-23   | <i>Thanksgiving Holiday. Classes do not meet.</i>  |
| November 26-30   | Finish Chapter 10. <b>Exam 4</b> on Chapters 9 and 10.   |
| December 3-5     | Chapter 11, "Liquids, Solids, and Intermolecular Forces."  |
| December 7       | <b>Comprehensive Departmental Final Examination</b> , 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/ses/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/Quizzes/Class Attendance and Participation | 10% |   |
| 4 mid-term exams                                    | 40% |   |
| Comprehensive Final Exam                            | 25% | <b>Friday, December 7, 5:30-8:00 PM</b> |

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 **Friday, December 7, 5:30-8:00 PM**. Grades 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                   |

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:** Faithful attendance is mandatory (excessive absences will lower the final grade), but 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:** Web-based homework problems will be assigned. More information will be given in class.

**Chemical Education Research:** In an effort to gather valuable information about the nature of how students learn the concept of stoichiometry, an educational research project will be carried out this semester in conjunction with your General Chemistry course. In the first half of the semester, you will receive instructions by email about how to participate in this on-line study. Completion of the module will be counted as the equivalent of one homework grade (100% if completed; 0% given on the assignment if not completed or partially completed), regardless of whether you consent to allow your data to be used in the study or not. In other words, while you are expected to complete the assignment as part of the course homework, you are not required to give your consent for the data to be used. However, we would sincerely appreciate your full support of the study, as there is no risk of harm in your participation. More details of the study are given on the consent form in the on-line module. For additional questions, please contact Kenneth Abayan ([kenneth.abayan@mavs.uta.edu](mailto:kenneth.abayan@mavs.uta.edu)) or Dr. Kevin Schug ([kschug@uta.edu](mailto:kschug@uta.edu)).

**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](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**Problem-Solving Skills Session:** Dr. Rogers will conduct a “Problem-Solving Skills Session” each Tuesday afternoon, 4:00-5:00 PM in Science Hall 100. Attendance is optional, and students from all Chemistry 1441 sections are invited to attend.

**Supplemental Instruction:** Supplemental Instruction (SI) consists of regularly scheduled study sessions to help students with course content, study skills, and exam preparation. All Chemistry 1441 students are encouraged to participate.

**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.

**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.

**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](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**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.