Syllabus: CHEM 1442 Spring 2016
Section 001 MWF 11:00 AM – 11:50 AM (SH 100)

Instructor: Dr. Seiichiro Tanizaki (Profile URL: https://www.uta.edu/profiles/seiichiro-tanizaki)
Office Hours: Monday (from 10 AM to 11 AM) or by appointment.
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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). **The textbook is included in the ALEKS online homework system as an e-book, and students are not required to purchase a hard-copy of a textbook.** If you prefer to obtain a hard copy, the textbook "Chemistry: The Molecular Nature of Matter and Change (7/e)" by Silberberg and Amateis (ISBN-13: 9780073511177), which is the same as the e-book, is available at the UT-Arlington bookstore or elsewhere.
2) **CHEM 1442 Lab Manual** (You need the most current edition sold at the UTA bookstore) 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.**
5) i>clicker 2: You can purchase an i>clicker 2 at the UTA bookstore. No other model of clickers will be allowed in this course.

Course Prerequisites: The prerequisite for CHEM 1442 is successful completion of CHEM 1441 or equivalent with a grade of C or better. Furthermore, in order to receive credit for this course, you must also be enrolled in a CHEM 1442 lab.

Course Description and Student Learning Outcomes: Upon completing the course, the student should be able to 1) understand how intermolecular forces are related to physical properties of matter, 2) predict the properties of solutions, 3) understand chemical kinetics and their relationship to reaction mechanisms, and be able to perform calculations related to the rates of chemical reactions, 4) understand chemical equilibrium and its application to gas phase equilibria, heterogeneous equilibria, acid-base equilibria, and solubility and complex ion equilibria, 5) use the concepts of thermodynamics to predict the spontaneity of processes, as well as the changes in free energy, entropy, and enthalpy, 6) understand the basic concepts of electrochemistry and be able to use standard reduction potentials to calculate quantities involved in an electrochemical reaction, and 7) understand nuclear chemistry, including calculations involving the rates of radioactive decay and binding energies of nucleons.

Attendance Policy: 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, […]

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 11, 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 Chemistry 1442, grades earned in the lab cannot be carried over when you re-take Chemistry 1442.**
5) The letter grade is assigned according to the following scale.

Total Numerical Grade	90 and above	80 – less than 90	70 – less than 80	60 – less than 70	Below 60
Letter Grade	A	B	C	D	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 a comprehensive, departmental exam, 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.

Participation
I will be using the i>clicker student response system in class this term. i>clicker 2 helps me to understand what you know and gives everyone a chance to participate in class. Participation with i>clicker 2 will account for 10% of your course grade. I will drop **six** of the lowest scores: This includes a zero score you get when you forget to bring your clicker to class, your clicker is not working, you miss a class, etc. None of the i>clicker scores except **six** lowest scores will be dropped under any circumstances.
You must purchase the model "i>clicker 2". It is sold at the UT Arlington Bookstore (http://www.bkstr.com/texasatarlingtonstore/home). No other models will be allowed in this course.
How to register your i>clicker 2
To receive credit for the responses you submit with i>clicker, you must register by the deadline, **January 24, 2015**. Students who register after this time will not receive credit.
1) Log into Blackboard (https://elearn.uta.edu) and select the course.
2) Click on the "i>clicker 2 Registration" link on the left side of the screen.
3) Enter your i>clicker remote ID (given at the back of your device) and click on "**Submit**".
4) Your clicker is all set to be used in the course.
Cheating
I consider bringing and using a fellow student's i>clicker to class to be cheating and a violation of the University Honor Code. If you are caught with a remote other than your own or have votes in a class that you did not attend, you will forfeit all clicker points and may face additional disciplinary action.
i>clicker Grade Calculation
Each i>clicker score is calculated as the "percentage" by dividing the sum of your i>clicker score (in points) by the maximum possible scores (in points). After the six lowest scores are dropped, participation grade is calculated as the average of i>clicker scores (in percentage).

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) 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.

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.

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 – Seiichiro Tanizaki".*** **Note that the Final Exam is scheduled for Wednesday, May 11 from 5:30 to 8:00 PM. Make sure to save this date because no make-up final exam will be given.**

Date		Lecture Material (Reading Assignments)
January	**18**, 20, 22	Course Orientation. Chapter 12, "Intermolecular Forces."
	25, 27, 29	Chapter 13, "The Properties of Mixtures."
February	1, 3, 5	Continue Chapter 13.
	8, **10**, 12	**Exam 1 on Chapters 12 and 13**. Begin Chapter 16, "Kinetics."
	15, 17, 19	Finish Chapter 16.
	22, 24, 26	Chapter 17, "Equilibrium."
Feb/Mar	29, **2**, 4	**Exam 2 on Chapters 16 and 17**. Begin Chapter 18, "Acid-Base Equilibria."
March	7, 9, 11	Finish Chapter 18.
	14, 16, 18	**Spring Break. Classes do not meet.**
	21, 23, 25	Begin Chapter 19, "Ionic Equilibria in Aqueous Systems."
Mar/Apr	28, 30, 1	Finish Chapter 19.
April	4, **6**, 8	**Exam 3 on Chapters 18 and 19**. Begin Chapter 20, "Thermodynamics."
	11, 13, 15	Finish Chapter 20. Section 4.5, "Oxidation-Reduction (Redox) Reactions."
	18, 20, 22	Chapter 21, "Electrochemistry."
	25, **27**, 29	**Exam 4 on Chapters 20 and 21 (including Section 4.5)**. Begin Chapter 24, "Nuclear Chemistry."
May	2, 4, 6	Finish Chapter 24.
	11	**Comprehensive Departmental Final Examination**.

Important Dates

January 18	Martin Luther King Jr. Day holiday: Classes do not meet.
February 03	Census date.
March 14 – 18	Spring Vacation: Classes do not meet.
April 01	Last day to drop classes: Submit requests to advisor prior to 4:00 pm (CT).
May 06	Last day of classes.
May 11	Final Exam from 5:30 PM to 8:00 PM.

Other Course Policies

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.

Problem-Solving Session: Dr. Rogers will conduct an optional Problem-Solving Session for CHEM 1442 every Thursday afternoon from 3:30-5:00 PM in Science Hall 100. All CHEM 1442 students are welcome 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 during Spring Break, 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 Chemistry 1442 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.

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.

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.

Inclement Weather Protocol: When a class is cancelled due to inclement weather, a lecture content will be supplied in the form of videos and made available in Blackboard. Students will be responsible for watching videos of the cancelled class, and the course will aim to stay on the tentative schedule described in this syllabus.

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.