

**University of North Texas
Syllabus for CHEM 1410
General Chemistry I**

Fall 2018

MWF 11:00 – 11:50 am, LIFE A117

W 4:00 – 4:50 pm, LIFE A117 (Recitation)

Instructor: Dr. Timothy Stephens
Office: Chemistry 264
Email: Timothy.Stephens@unt.edu (best contact method, do not use the Blackboard message feature. To avoid having your email filtered as "spam", **use your UNT account and/or use CHEM 1410 as the subject line of all messages.**)
Office Hours: MW 9:45 – 10:45 am, F 2:00 – 3:00 pm, or by appointment. It is best to make an appointment with me by email.

Required Text: Principles of General Chemistry, Third Edition by Silberberg. ISBN: 9780073402697. You must also purchase a current subscription to the online homework through Sapling Learning.

Natural Sciences Exemplary Educational Objectives:

1. To understand and apply method and appropriate technology to the study of natural sciences.
2. To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
3. To identify and recognize the differences among competing scientific theories.
4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
5. To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Student Disabilities and ODA

The University of North Texas makes reasonable academic accommodation for students with disabilities. **Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility.** If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, **ODA notices of accommodation should be provided as early as possible in the semester** to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at 940.565.4323.

Academic Integrity

Obtaining information inappropriately when taking a test, or presenting false information to the instructor regarding grades, tests, written assignments, or absences, is grounds for dismissal from the course with an "F" and referral to the Dean. At minimum, cheating on a test automatically results in a zero for that test. Please refer to the UNT Student Handbook for more information.

Student Learning Outcomes: Upon successful completion of this course, students should be able to: At the end of the course, one should be able to:

- State the law of conservation of mass
- Use significant figures in calculations
- Convert from one temperature scale to another
- Determine atomic weight from isotopic masses and fractional abundances
- Write an ionic formula, given the ions
- Write the name of a compound from its formula, or vice versa
- Write the name of a binary molecular compound from its molecular formula
- Write the name and formula of an anion from the acid
- Balance simple equations
- Convert moles of substance to grams, and vice versa
- Calculate the percentage composition from the formula
- Determine the empirical formula from percentage composition
- Calculate products based on a limiting reactant
- Write net ionic equations
- Assign oxidation numbers
- Use molarity as a conversion factor
- Calculate the volume of reactant solution needed
- Calculate the quantity of substance in a titrated solution
- Convert units of pressure and use the empirical gas laws
- Solve stoichiometry problems involving gas volumes
- Calculate the amount of gas collected over water
- Calculate kinetic energy
- Write thermochemical equations
- Apply Hess' Law
- Calculate the heat of phase transition from standard enthalpies of formation
- Relate wavelength and frequency of light
- Use the rules for quantum numbers
- Determine the electronic configuration of an atom using the Aufbau principle, and by using the period and group numbers
- Apply periodic trends to element properties

Each of the above student learning outcomes must be performed at an appropriate level as stated in each course assignment requirements, grading scale or rubric.

University Closing: Should the university announce that it will close, due to inclement weather, national emergency, etc., on a day on which an exam is scheduled; the exam will be given on the next class day on which the university is open. If the university closes on or during a recitation day, all students will receive full credit for that week's quiz.

Sapling Electronic Homework: This homework is delivered, graded, and recorded using the Sapling Learning software. You will need to purchase an ACCESS CODE in order to access the homework. You may purchase the access code at the Bookstore or by accessing the Sapling website (where it is cheaper @ \$42) and paying by credit card. Then go to www.saplinglearning.com/login to log in or create an account. The following link includes detailed instructions on how to register for our course: <https://community.macmillan.com/docs/DOC-5972-sapling-learning-registering-for-courses>. You must do this homework every week. This system is nice because you can work the lessons several times to improve your score. The lessons cover the basics of the material in the class text. For technical assistance go to: <https://community.macmillan.com/docs/DOC-6915-students-still-need-help>.

There will be five (5) homework assignments given through Sapling. These will total 260 points.

Quizzes: Quizzes will be given during each Recitation period. There will be no make-ups of the quizzes except for an Official University Activity excuse. There will be 14 quizzes worth 10 points each for a total of 140 points. THERE WILL BE RECITATION AND QUIZ ON WEDNESDAY NOVEMBER 21!!

Exam Administration: Students are expected to be on time for announced exams. While there are instances when one may be unavoidably late, no over-time will be permitted in test taking. All test papers must be handed in at the end of the scheduled testing time. Exam grades will not be dropped for missed exams. *No tests will be distributed to latecomers after the first person that finishes a test leaves the classroom. Cell phones, laptops, tablets, smartwatches, or anything else that can connect to the internet is not allowed on Exams. If you are caught using any item that connects to the internet during an Exam or the Final Exam, your paper will be confiscated and you will receive zero points for that Exam and that Exam will not be eligible to be replaced by half of the Final Exam. Cheating will result in a zero. Any talking, saved equations on calculators, etc. will result in an automatic F for all students involved.*

Make-up Exams: Make-up Exams will only be given for an Official University Activity upon receipt of proper documentation from the University. All other excuses for missing an exam will result in the Exam being replaced by 50.00% of your Final Exam grade.

Learning Chemistry: Learning chemistry has been shown to be an effective method of developing and improving critical thinking and problem solving skills. This is a major objective of the core curriculum at UNT. Success is dependent on a student's ability to learn information and develop skill at applying that information. Lecture is only the part of the process. Students are expected to carefully work through the textbook, thoroughly reading the material, preparing detailed, written answers to questions, and solving example problems at the ends of chapters. Online homework is required to help assist and monitor student progress. Note: Many exam questions and problems will require combining concepts learned in more than one set of homework problems (i.e. harder questions!). Memorizing how to do a certain type of problem will not be as useful as understanding the concept. The cumulative skills problems at the end of each chapter are more typical of exam questions.

Students can improve their chances to be successful if they allocate some study time to their Chemistry class each and every day. Successful students use lectures to direct and supplement their individual study and skill development. Students who use the lecture as their main source of information, and then try to develop skill at applying that information a day or two before an exam, are usually not successful in Chemistry classes.

Chemistry Resource Center: UNT provides assistance in chemistry classes through the Chemistry Resource Center (CRC) located in Chemistry 231. The CRC is staffed by chemistry graduate students who are there to help tutor you in chemistry. However, the tutors are instructed to only help students to understand the concepts – not to do your homework.

Computational Chemistry Instructional Laboratory: UNT also provides assistance for chemistry courses through the Computational Chemistry Instructional Laboratory (CCIL) located in Chemistry 232. Like the CRC, CCIL is staffed by chemistry graduate students. You will need to show your UNT ID card in order to access the computers in CCIL. Since CCIL is an instructional laboratory, there may be classes meeting in CCIL. If a class is meeting in CCIL, you will not be allowed access.

Recommended Supplies: Students should have a scientific calculator, capable of displaying numbers in scientific notation, and should know how to use it with ease. Since some calculator manufacturers (Casio, Texas Instruments, Hewlett-Packard, etc.) design keys, key labels, and keystrokes differently from other manufacturers' calculators, students should be thoroughly familiar with the instruction manuals that accompany their calculators. A non-programmable scientific calculator (such as a TI 30 or Casio fx-260) appropriate for this class can be purchased for about \$10 at discount stores such as WalMart, Target, etc. Students using beaming devices, cell phone pictures, digital messages, calculators with stored formulae or text, etc are guilty of academic dishonesty and will be dealt with to the maximum penalty allowed.

Grading:	Exams (4)	400 points
	Quizzes	140 points
	Homework	260 points
	<u>Final Exam</u>	<u>200 points</u>
	Total	1000 points

Letter Grade Distribution:

895 – 1000 points	Grade = A
795 – 894 points	Grade = B
695 – 794 points	Grade = C
595 – 694 points	Grade = D
0 – 594 points	Grade = F

Tentative Class Schedule: (SUBJECT TO CHANGE)

Week of	Chapters to be covered
August 27	Chapter 1
September 3	Chapter 1, 2.1 – 2.6, and 3.1 Algebra Skills Homework due Thursday September 6 at 11:55 pm NOTE: No Class on Monday September 3 due to Labor Day Holiday
September 10	Chapter 7
September 17	Chapter 8 Homework for Exam 1 due Thursday September 20 at 11:55 pm Exam 1: Friday September 21
September 24	Chapter 8, 9.1, 9.2, 9.5, 2.7, 2.8
October 1	Chapter 9.3, 2.8, 3.1, 3.2
October 8	Chapter 3.1, 3.2 Homework for Exam 2 due Thursday October 11 at 11:55 pm Exam 2: Friday October 12
October 15	Chapter 10.1, 10.2, 11.1
October 22	Chapter 10.3, 11.2, 3.3, 3.4
October 29	Chapter 3.3, 3.4 Homework for Exam 3 due Thursday November 1 at 11:55 pm Exam 3: Friday November 2
November 5	Chapter 4.1 – 4.4, 2.8, 3.5
November 12	Chapter 4.5, 4.6, 6.1 – 6.4
November 19	Chapter 6.5, 6.6, 9.4, 5 NOTE: No Class on Friday November 23 due to Thanksgiving Holiday NOTE: There WILL BE Recitation on Wednesday November 21 complete with Quiz
November 26	Chapter 5 Homework for Exam 4 due Thursday November 29 at 11:55 pm Exam 4: Friday November 30
December 3	Chapter 12 NOTE: There is NO QUIZ during Recitation this week. Recitation will be devoted to review for the Final Exam.
December 10	Final Exam Monday December 10, 10:30 am – 12:30 pm