



# General Chemistry I

Chemistry 1110 - 001  
 Dr. Harris  
 Spring 2012 Course Syllabus  
 10:30 – 11:20 a.m., MWF  
 3:30 – 4:20 p.m., T  
 Widtsoe 007  
 4 credits

Dates		MON	TUES	WED	FRI
January	9 <sup>th</sup> – 13 <sup>th</sup>	Introduction	1	1	1
January	16 <sup>th</sup> – 20 <sup>th</sup>	<b>Holiday</b>	1	2	2
January	23 <sup>rd</sup> – 27 <sup>th</sup>	2	2	3	3
January 30 <sup>th</sup> and 31 <sup>st</sup>	February 1 <sup>st</sup> – 3 <sup>rd</sup>	3	3	3	4
February	6 <sup>th</sup> – 10 <sup>th</sup>	4	5	5	5
February	13 <sup>th</sup> – 17 <sup>th</sup>	5	5	5	<b>5 and Extra Credit Information</b>
February	20 <sup>th</sup> – 24 <sup>th</sup>	<b>Holiday</b>	<b>6 (Attend at 10:30 AM)</b>	6	6
February 27 <sup>th</sup> – 29 <sup>th</sup>	March 2 <sup>nd</sup>	6	7	7	7
March	5 <sup>th</sup> – 9 <sup>th</sup>	7	7	8	8
March	12 <sup>th</sup> – 16 <sup>th</sup>	Spring Break	Spring Break	Spring Break	Spring Break
March	19 <sup>th</sup> – 23 <sup>rd</sup>	8	8	8	9
March	26 <sup>th</sup> – 30 <sup>th</sup>	9	9	10	10
April	2 <sup>nd</sup> – 6 <sup>th</sup>	10	10	10	10
April	9 <sup>th</sup> – 13 <sup>th</sup>	11	11	11	11
April	16 <sup>th</sup> – 20 <sup>th</sup>	12	12	12	
April	23 <sup>rd</sup> – 27 <sup>th</sup>	1 – 3 Help Session	4 – 6 Help Session	7 – 9 Help Session	10 – 12 Help Session

Exam Number	Date (ESLC 131 TARLab Hours)	Chapters Included
1	Monday, 6 <sup>th</sup> – Wednesday 8 <sup>th</sup> of February	1 – 3
2	Wednesday, 29 <sup>th</sup> of February – Friday, 2 <sup>nd</sup> of March	4 – 6
3	Friday, 30 <sup>th</sup> of March – Tuesday, 3 <sup>rd</sup> of April	7 – 9
4	Wednesday, 18 <sup>th</sup> – Friday, 20 <sup>th</sup> of April	10 – 12
Final	Monday, 30 <sup>th</sup> of April – Wednesday, 2 <sup>nd</sup> of May	1 - 12

Dr. Doug Harris  
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 Office Hours: 8:30 – 9:15 a.m. MW

## Materials

Karen Timberlake, *General, Organic, and Biological Chemistry: Structures of Life*, 3<sup>rd</sup> edition, Benjamin Cummings, 2010.  
 Scientific Calculator (no cell phone calculators)  
 Course web site: <http://ion.chem.usu.edu/~harrisd/>

**Coursework**

Examinations, 4 @ 100.....	400
Final Exam, comprehensive @ 100.....	100
TOTAL (drop lowest exam score).....	400

**Grades**

100% - 92%	A
91% - 88%	A-
87% - 85%	B+
84% - 81%	B
80% - 77%	B-
76% - 73%	C+
72% - 64%	C
63% - 60%	C-
59% - 57%	D+
56% - 50%	D

Note: Scores rounded to nearest one's place (91.4% = 91% and 91.5% = 92%).

The instructor reserves the right to lower these cutoff scores.

**Policies and Procedures**

1. The administration of Chemistry 1110 will adhere strictly to the policies (including the issuing of incompletes) outlined in the USU 2011 – 2012 General Catalog.
2. Qualified students with disabilities may be eligible for reasonable accommodations. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.
3. There will be four 60-minute exams and one 110-minute comprehensive final exam. Each exam (including the final) is worth 100 points. Each student may drop the lowest of their five exam grades. Students who only take four exams will have all four grades count. Students missing more than one exam will receive a grade of 0 on any missed in excess of 1. Exams will not be rescheduled to an earlier date and time. Make up exams will not be given. Students will be permitted to bring a calculator (no cell phone calculators) to the exam.
4. Keep in mind that the practice exam serves as an assessment of your understanding of concepts presented in lecture. Hopefully you will be diligent about following the suggested study plan outlined at the beginning of the course. Exam questions may be the same or similar to the practice exam problems but may also be completely different. Although exam questions may be completely different from the practice exam problems, all exam questions will focus on the concepts discussed in lecture.
5. Record each of your exam results so that you may track your progress in the course. Due to the confidential nature of grades, Dr. Harris will only provide student grades upon request with photo ID before class begins.
6. Although class attendance will not be officially taken, it will be absolutely essential that every effort is made in attending each lecture. All students will be held responsible for lecture material, worked problems, and/or course announcements that are presented in lecture.
7. If you choose to complete an optional extra-credit molecular modeling exercise, one percentage point (1%) will be added to your final grade percentage. This is helpful to those students who end up with a final borderline grade percentage. The extra-credit submission deadline will be at 9:30 a.m. Friday, March 30<sup>th</sup>. Further information will be given in class on Friday, February 17<sup>th</sup> regarding the specific details in producing the extra-credit assignment.

### **Main Course Objectives and Assessment**

1. Prepare students for careers in health-related professions.
2. "Relate the structure and behavior of matter to its functions in health and life" (see text preface).
3. Lecture learning checks will be used as a means of assessing student comprehension. These student-centered learning strategies have previously proven successful in this chemistry course.

### **Some Learning Objectives:**

- Review math and learn to do calculations while working everyday examples of problems in health and medicine using metric units.
- Understand the relationship of isotopes to the atomic mass of an element on the periodic table.
- Understand the relationship between electron arrangement, group number, and periodic law.
- Understand different types of radiation, radiation protection, balancing of nuclear equations, and the fusion and fission processes.
- Learn the relationship between group numbers, valence electrons, and the formation of ionic and covalent compounds.
- Write ionic formulas and names of compounds with polyatomic ions.
- Use VSEPR theory to determine the shape, bond angles, and polarity of a molecule.
- Classify an equation as a combination, decomposition, replacement, combustion, and/or oxidation-reduction.
- For a given mass of a substance in a reaction, use the appropriate mole factors and molar masses to calculate the mass of a reactant, product/percent yield.
- Determine the energy lost or gained during a change of state/temperature.
- Use the ideal gas law to calculate an unknown pressure, volume, moles, and/or temperature of a gas.
- Understand solubility and determine whether a salt will dissolve in water.
- Calculate the percent concentrations and molarity of a solution.
- Describe the behavior of a red blood cell in hypotonic, isotonic, and hypertonic solutions.
- Understand and write the equilibrium constant for an equation.
- Describe the characteristics of acids and bases.
- Classify bases/acids as strong or weak.
- Predict whether a salt will form an acidic, basic, or neutral solution.
- Describe the function of a buffer.
- Describe the properties and functional groups found in organic compounds.
- Describe the physical properties and write the IUPAC names of alkanes and cycloalkanes.
- Describe the properties, reactions, and IUPAC names of alkenes and alkynes.

## Taking a computer-based test in the TARLab (ESLC 131)

Taking a computer-based test is actually simpler than filling out a scantron sheet for a True/False/Multiple Choice test. However, there are a few logistical issues that distinguish this testing format from scantron tests. The following are the procedures for taking such a test. The actual testing software that you will be using is called iNetTest. Remember, there are proctors in the testing lab to answer questions about test procedures; however, they are not able to answer specific questions about the material.

1. Although three days are given to take each test, it is best not to wait until the last hour on the third day to go to the lab to take your test. Seating is limited.
2. When you go to the lab to take the test (ESLC 131 – Eccles Science Learning Center) you **MUST** have your current student id and you **MUST** be registered for the class.
3. When you enter ESLC 131 (south door, near the elevator) present your student id to the proctor, and indicate for which class you wish to take a test. After validating your id, the proctor will unlock your test. The test will remain unlocked for five minutes.
4. You may use any vacant computer system in the lab to take the test. You begin by starting a browser (Firefox is the preferred browser) and going to the web site **tarlabtest.usu.edu**. This will bring up the test software called iNetTest.
5. Click on the START button and log in using your student A# for your username and your Banner password for your password.
6. Once logged in, you will see some windows and buttons. You need only be concerned with the window (My Tests) listing the groups (classes) for which you have tests. Within this window, click on the class/button (CHEM1010 or CHEM1110) for which you are registered.
7. You will then see a list (initially only one) of the tests you have taken or can take. For example, for the first midterm for CHEM 1010 you will see three buttons labeled “CHEM1010Sp12 T1”, “Take Test” and “View Results.” Clicking on the test label button or on the Take Test button will start your test.
8. Good luck and beware that the test is timed and at the end of the time period you will be logged out.

After the testing period is ended or you have exited the test, if enabled by the instructor, you can log back into **tarlabtest.usu.edu** and by clicking on the “View Results” button see the results for your test.

Remember, if you have any questions, please ask the proctor.