

Chemistry 10123  
Spring 2017  
(for Gen Chem Lab issues, please see Dr. Green, Kayla.Green@tcu.edu)  

Instructor  

"Dr. Bob" Neilson  
Office: SWR 437  
R.Neilson@tcu.edu  
http://personal.tcu.edu/RNeilson  

Office Hours:  
Monday ........................................ 12:00 - 1:30 PM  
Tuesday .........................................  8:30 - 9:30 and 1:30 - 3:00 PM  
Other times as announced (in-class or by e-mail) and/or by appointment.  

Course Policies  

1. MAKE-UP EXAMS will be given only in cases of absences due to one of the following reasons:  
   (a) student's name on the List of Official University Absences,  
   (b) a written medical excuse that includes the doctor's name, phone number, and a clear statement that the illness requires absence from class(es),  
   (c) a written notice from the Dean of Campus Life indicating that a student is dealing with a major personal and/or family problem.  
   All make-up exams will be given at the end of the semester on a date to be announced. The same exam may be used regardless of which hour exam was excused.  

2. CALCULATORS - You will need a simple, scientific calculator capable of doing logarithms for the exams. Sharing of calculators during exams is not permitted. PROGRAMMABLE OR GRAPHING CALCULATORS, CELL PHONES, HANDHELD OR LAPTOP COMPUTERS, OR ANY OTHER DEVICES WITH SIGNIFICANT MEMORY CAPABILITY ARE NOT PERMITTED. (If it cost more than $10-15, it probably will not be allowed.)  

3. On the exams, "SHOW ALL WORK" means show a clear logical method for solving the problem. In such cases, the right answer is worth nothing unless your work is clearly shown, including proper units.  

4. DON'T FALL BEHIND! (Even more important that last semester!) This course requires good study habits which means keeping up with the material on a day-by-day basis. Work all of the assigned problems with the objective of understanding the concept not just getting the right answer.  

5. Most importantly, take advantage of the office hours and ASK FOR HELP!
Lecture, Exam, and Grading Information

Textbook, Lectures, and "Homework"


This semester, we will cover approximately chapters 13 - 25 in the following order.

Chapters: 13, 14, 15, 16, 17, 18, 19, 21, 25

The classes preceding each of the 5 hour exams will typically cover about 2 chapters.

Without question, the best way to study for this course is to WORK PROBLEMS! At the very least, do the "blue-numbered" problems at the end of each chapter, with emphasis on those that illustrate topics covered in class. Many of the "challenge" and/or "conceptual" problems in the book are especially good for testing your true understanding of the important concepts. Check the class web site for a list of recommended problems in each chapter. These "homework" problems are for your own study benefit; they will not be collected or graded.

Exam and Quiz Schedule

<table>
<thead>
<tr>
<th>Exam 1</th>
<th>Wednesday, February 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 2</td>
<td>Wednesday, February 22</td>
</tr>
<tr>
<td>Exam 3</td>
<td>Wednesday, March 22</td>
</tr>
<tr>
<td>Exam 4</td>
<td>Wednesday, April 12</td>
</tr>
<tr>
<td>Exam 5</td>
<td>Wednesday, May 3</td>
</tr>
<tr>
<td>Final Exam</td>
<td>Wednesday, May 10 (11:30 AM - 2:00 PM)</td>
</tr>
</tbody>
</table>

Other Important Dates

Monday, Jan 16 ................. MLK Holiday - no class
March 13 - 17 .................... Spring Break
Monday, April 10............... Last day to drop a course
Friday, April 14 ............... Good Friday - no class

Grading Scheme

5 Hour Exams: 70 % (14 % each) or 75 % (15 % each)
Final exam: 25 % or 30 %

If the final exam score is higher than the hour exam average, it counts 30 %. Otherwise, the final counts 25 %. In either case, all 5 hour exams count!

Plus-Minus letter grades will be used in borderline cases, i.e., within 1-2 points of letter grade cut lines (e.g., the highest B's may be B+ and the lowest B's may be B-). An approximate grade distribution for the class will be presented after each major exam.
Learning Objectives

Upon successful completion of this course, students will be able to:

1. Understand colligative properties, their use in determining the characteristic of solutions, and the related concentration methods.
2. Determine the rate of a reaction and its dependence on concentration, time, and temperature.
3. Understand reaction mechanisms and how they relate to rate laws.
4. Determine whether equilibrium has been established and calculate equilibrium concentrations.
5. Use LeChâtelier’s Principle to predict the effects of concentration, pressure and temperature changes on equilibrium systems.
6. Apply principles of equilibrium to acids, bases, salts, buffer solutions, solubility, and complex ion formation.
7. Understand the three laws of thermodynamics and perform calculations with the relevant functions, including enthalpy, entropy, and free energy.
9. Understand the construction and operation of galvanic and electrolytic electrochemical cells.
10. Determine standard and non-standard cell potentials.
11. Describe the structure, bonding and related properties of transition metal coordination compounds.
12. Understand relationships of structure, bonding, and reactivity within classes of organic compounds and polymers.
**Additional Information**

**Disabilities Statement**

Texas Christian University complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 regarding students with disabilities. Eligible students seeking accommodations should contact the Coordinator of Student Disabilities Services in the Center for Academic Services located in Sadler Hall, 1010. Accommodations are not retroactive, therefore, students should contact the Coordinator as soon as possible in the term for which they are seeking accommodations. Further information can be obtained from the Center for Academic Services, TCU Box 297710, Fort Worth, TX 76129, or at (817) 257-6567.

Adequate time must be allowed to arrange accommodations and accommodations are not retroactive; therefore, students should contact the Coordinator as soon as possible in the academic term for which they are seeking accommodations. Each eligible student is responsible for presenting relevant, verifiable, professional documentation and/or assessment reports to the Coordinator. Guidelines for documentation may be found at [http://www.acs.tcu.edu/disability_documentation.asp](http://www.acs.tcu.edu/disability_documentation.asp).

Students with emergency medical information or needing special arrangements in case a building must be evacuated should discuss this information with their instructor/professor as soon as possible.

**Academic Misconduct (See pages 18-19 in the Student Handbook)**

Any act that violates the academic integrity of the institution is considered academic misconduct. The procedures used to resolve suspected acts of academic misconduct are available in the offices of Academic Deans and the Office of Campus Life. Specific examples include, but are not limited to:

1. **Cheating:** copying from another student’s test paper; using programmable calculators, portable computers and cell phones during the test without permission; collaborating with or seeking aid from another student during a test or laboratory without permission; substituting for another student or permitting another student to substitute for oneself.

2. **Plagiarism:** the appropriation, theft, purchase or obtaining by any means another’s work, and the unacknowledged submission or incorporation of that work as one’s own offered for credit.

3. **Collusion:** the unauthorized collaboration with another in preparing work offered for credit.