

# Chemistry 10123

Spring 2020

(for **Gen Chem Lab** issues, please see Dr. Conrad, [H.Conrad@tcu.edu](mailto:H.Conrad@tcu.edu))

## Instructor

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"Dr. Bob" Neilson

Office: SWR 438

817-257-7345

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**Class Web Site:** <http://personal.tcu.edu/rneilson/Chem10123/10123.htm>

### Office Hours:

Monday ..... 12:00 - 1:30 PM

Tuesday ..... 12:30 - 2:30 PM

Other times as announced (in-class or by e-mail) and/or by appointment.

## Course Policies

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- MAKE-UP EXAMS** will be given only in cases of **absences** due to one of the following reasons. **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.*
  - student's name on the **List of Official University Absences**,
  - a **written medical excuse** that includes the doctor's name, phone number, and a **clear statement that the illness requires absence from class(es)**,
  - a **written notice** from the Dean of Campus Life indicating that a student is dealing with a major personal and/or family problem.

*There are no make-up quizzes! If a short quiz is missed for one of the above reasons, the score for that quiz will be replaced by a prorated value based on the next hour exam.*
- 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, it probably will not be allowed.)
- 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.**
- DON'T FALL BEHIND!** (Even more important than 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.
- Most importantly**, take advantage of the office hours and **ASK FOR HELP!**

## Lecture, Exam, and Grading Information

### Textbook, Lectures, and "Homework"

**Chemistry: A Molecular Approach, 4th Ed, by N. J. Tro**

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

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

The classes preceding each of the 4 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 cumulative 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

<b>Exam 1</b>	<b>Wednesday, February 5</b>
<b>Exam 2</b>	<b>Wednesday, February 26</b>
<b>Exam 3</b>	<b>Wednesday, March 25</b>
<b>Exam 4</b>	<b>Wednesday, April 22</b>
<b>10-minute Quiz Dates</b>	<b>Jan 22   Jan 29   Feb 12   Feb 19   Mar 4 Mar 18   Apr 1   Apr 8   Apr 15   Apr 29</b>
<b>Final Exam</b>	<b>Wednesday, May 6 (11:00 AM - 1:30 PM)</b>

### Other Important Dates

Monday, Jan 20 ..... MLK Holiday - no class

March 9-13 ..... Spring Break

Friday, April 10 ..... Good Friday - no class

**Monday, April 13 ..... Last day to drop a course -- See note below!!!**

Monday, April 27..... Last day to select P/NC option

### Withdrawal from lecture **REQUIRES** simultaneous withdrawal from lab!

If a student is enrolled in both CHEM 10123 (lecture) and CHEM 10122 (lab) in the same semester, a withdrawal from CHEM 10123 (lecture) **REQUIRES** simultaneous withdrawal from CHEM 10122 (lab). This will be done automatically by the Registrar's software.

## Grading Scheme

Item	Option 1	Option 2
Average of 4 Hour Exams	60 %	56 %
Average of 10 Short Quizzes	15 %	14 %
Final Exam	25 %	30 %

**You do not need to select an option. Both averages will be determined and the best one will be used to determine the final letter grade.**

Approximate grading scale: A (88-100), B (76-87), C (64-75), D (52-63), F (0-51)

**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.
8. Systematically balance oxidation-reduction reactions.
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**

### **Statement of Disability Services at TCU**

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](http://www.acs.tcu.edu/disability_services.asp) located in Sadler Hall, room 1010 or [http://www.acs.tcu.edu/disability\\_services.asp](http://www.acs.tcu.edu/disability_services.asp). 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.

### **Statement on TCU's Discrimination Policy**

TCU prohibits discrimination and harassment based on age, race, color, religion, sex, sexual orientation, gender, gender identity, gender expression, national origin, ethnic origin, disability, predisposing genetic information, covered veteran status, and any other basis protected by law, except as permitted by law. TCU also prohibits unlawful sexual and gender-based harassment and violence, sexual assault, incest, statutory rape, sexual exploitation, intimate partner violence, bullying, stalking, and retaliation. We understand that discrimination, harassment, and sexual violence can undermine students' academic success and we encourage students who have experienced any of these issues to talk to someone about their experience, so they can get the support they need. [Review TCU's Policy on Prohibited Discrimination, Harassment and Related Conduct or to file a complaint: https://titleix.tcu.edu/title-ix/](https://titleix.tcu.edu/title-ix/).

### **Statement on Title IX at TCU**

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep any information you share private to the greatest extent possible. However, I have a mandatory reporting responsibility under TCU policy and federal law and I am required to share any information I receive regarding sexual harassment, discrimination, and related conduct with TCU's Title IX Coordinator. Students can receive confidential support and academic advocacy by contacting TCU's Confidential Advocate in the Campus Advocacy, Resources & Education office at (817) 257-5225 or the [Counseling & Mental Health Center](https://counseling.tcu.edu/) at <https://counseling.tcu.edu/> or by calling (817) 257-7863. [Alleged violations can be reported to the Title IX Office](https://titleix.tcu.edu/student-toolkit/) at <https://titleix.tcu.edu/student-toolkit/> or by calling (817) 257-8228. Should you wish to make a confidential report, the Title IX Office will seek to maintain your privacy to the greatest extent possible, but cannot guarantee confidentiality. Reports to law enforcement can be made to the Fort Worth Police Department at 911 for an emergency and (817) 335-4222 for non-emergency or TCU Police at (817) 257-7777.

### **Student Support – Campus Offices**

- Brown-Lupton Health Center (817-257-7863)
- Campus Life (817-257-7926, Sadler Hall 2006)
- Center for Academic Services (817-257-7486, Sadler Hall 1022)
- Center for Digital Expression (CDeX) (817-257-7350, Scharbauer 2003)
- Mary Coats Burnett Library (817-257-7117)
- Office of Religious & Spiritual Life (817-257-7830, Jarvis Hall 1st floor)
- Student Development Services (817-257-7855, BLUU 2003)
- TCU Center for Writing (817-257-7221, Reed Hall 419)
- Transfer Student Center (817-257-7855, BLUU 2003)
- Veterans Services (817-257-5557, Jarvis Hall 219)