CHEM 1312.002: GENERAL CHEMISTRY 2 - Mr. Lewis

Syllabus Spring 2026

University of Texas at Tyler

RBS 2024 2:00 PM - 3:20 PM TuTh

Instructor Contact	Office	Drop By Hours	Email	Phone
Mr. Jerome Lewis	RBS 3013	Tu & Th, 3:30 - 5:30 pm, F, 10:00 - 11:00 am Or by appt (email)	jeromelewis@uttyler.edu	566-7206

Welcome to General Chemistry II

Course Description

This course is designed for STEM majors and is a continuation - builds upon - what was learned in general chemistry 1. The course will cover many topics first introduced in Gen Chem 1 in more detail (e.g. acids/bases, redox, and solubility). New topics introduced will include intermolecular forces, phase changes, liquids and solutions, kinetics, and nuclear chemistry. The material spans Chapters 10-17 and 19-21 in the textbook. Some of the course content will be presented using online lectures, quizzes and other online practice tools that will be available through the Canvas course. Students in this course are responsible for all of the content and material included in and required by this course. The development of the subject presupposes a basic background in algebra at the college level and previous information from General Chemistry 1.

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Important Dates

Class will meet in RBN 3035 Tuesday and Thursday January 13 - April 29 from 2:00 - 3:20 PM.

- Midterm Exams: Feb 12 (Th), Mar 19 (Th), Apr 16 (Th); dates subject to change
- Census date - last day to file for grade replacement: January 27 (Mon)
- Spring Break: March 9 - 13 (M-F; No class)
- Last day to drop or withdraw from courses with a W: March 30
- Apr 28 (Tue) - Final Exam from 2:00 - 4:00 pm in RBN 2024

Student Learning Outcomes

Throughout the semester you will be required to demonstrate a working knowledge of general chemistry using Critical Thinking skills (CT), and EMpirical and Quantitative skills (EQs). Students will also need to be able to apply and incorporate previous knowledge from General Chemistry 1. By the end of the course, successful students should be able to: 1. Apply the scientific method to analyze items or problems and se original thinking and chemical knowledge to synthesize solutions (CT), 2. Manipulate and analyze data embedded in word problems found on homework, quizzes, and test (EQs), 3. Employ logic and critical thinking in order to solve a wide variety of problems, 4. Identify how chemistry topics are related and interconnected.

Additional Learning Outcomes

1) Apply the ideal gas equation to calculate changes in pressure, volume, temperature as well as stoichiometric quantities
2) Predict trends in physical properties based on the strengths of intermolecular interactions
3) Calculate rates of reactions and their dependence on concentration, time, and temperature
4) Propose reaction mechanisms consistent with rate dat
5) Calculate equilibrium constants or equilibrium amounts of products or reactants (ICE method)
6) Apply Le Chatelier's Principle to determine if changes to the system will impact the equilibrium amounts of reactants and products
7) Apply equilibrium principles to aqueous and electrochemical systems
8) Calculate and/or convert between thermodynamic quantities (e.g. entropy, free energy and equilibrium constants, electrochemical potentials)
9) Identify the parts of an electrochemical cell and where specific processes take place
10) Calculate cell potentials
11) Balance nuclear chemical equations

Required Materials

Achieve
macmillan learning

Achieve Online Homework is REQUIRED for homework assignments

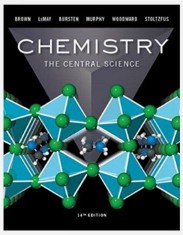
Achieve Access Code Options

- Bookstore, ISBN: 9781319399900
- Purchase online (easier/cheaper) when you register for Achieve through this class's Canvas course

Scientific calculator capable of exponents and logarithms. ***Get one you are comfortable / familiar with.***

You **CANNOT** use smart/graphing calculators on Midterm exams.

Recommended Materials

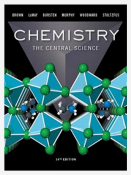


Chemistry: The Central Science, 14th Ed by Brown, Lemay, and Bursten

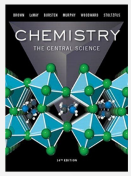
Textbook options:

- Hardcover ISBN: 9780134414232
- 3-ring binder ISBN: 9780134555638
- E-book ISBN: 9780314554570

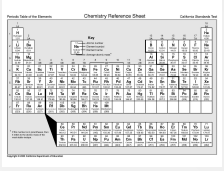
(Note: The 13th ed of textbook is fine. Only significant changes were in the Gen Chem 1 material.)



Student Guide ISBN: 9780134554075



Solutions to Red Exercises ISBN: 9780134552231



Access on Canvas. Digital or printed

Course Requirements

CHEM 1311 (General Chemistry 1) is required. If it has been a while since Gen Chem 1, you should budget extra study time to avoid falling behind. You can also send me an email to get access to the CHEM 1311 Toolkit page for review.

- General Chemistry 2 Lab (CHEM 1112) is a separate course. If CHEM 1312 is a degree requirement for you then you must take both lecture and lab. Students taking CHEM 1312 to satisfy the CORE do NOT have to take the lab. However the lab does satisfy 1 hour of the STEM Core requirement
- Your lab instructor is not responsible for catching you up on lecture material you missed.
    - If you are unsure about dropping the lab then please speak with you laboratory instructor.

The course **meets every Tuesday and Thursday from January 12 to April 28** except as noted on page 1 of this syllabus.

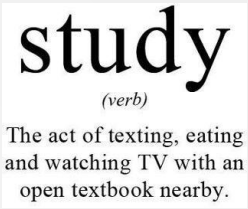
To receive a passing grade for the course, you must take the comprehensive final exam; otherwise, you will fail the course regardless of your other exam and assignment scores

- **Final Exam: Day, Apr 28 from 2:00 pm - 4:00 pm in RBN 3035**

The last day to withdraw from the course with a "W" is Monday, March 31. **IT is your responsibility to withdraw from the course.** If you are withdrawing from this course, you are encouraged, but not required to, withdraw from the laboratory course (CHEM 1112) and vice versa.

- If you drop the lecture, please let me know

Study Tips



Form Study Groups: By teaching others, you will learn the material quicker and get help in areas you are weak in.
*Ask people in lab to form a group

Don't "brain-dump" after chapter quizzes: You will continue to build upon and use information throughout the semester

Do the online homework: it is a big part of your grade and prepares you for exams. I would not wait until the last minute though! Then it is not helpful.

Study, Study, Study: At least 30-45 minutes a day; helps reinforce the material and identify weak areas

Attend Drop-By hours: You and a friend come and ask questions about what you DO and DO NOT understand

Do not be afraid to get help!: Take advantage of PASS tutoring, **Up-Swing's tutoring services**, drop-by hours, help sessions, exam reviews, and/or tutors.

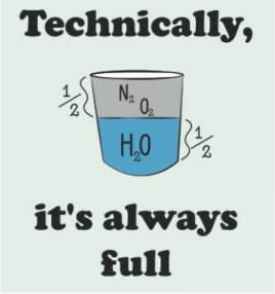
Upswing is a FREE 24/7 online tutoring service!

Online Content

I will primarily communicate with you through Canvas. I will post

- Lecture notes, both the full notes and practice problem only slides
- Lecture quizzes
- Dates for exams and review sessions as well as homework due dates
- Links to toolkit tutorial videos for selected topics

Please make sure you are set to receive notifications to your email and/or your phone/tablet/etc. from Canvas at least daily.



Online Homework (20% of Total Grade)

Homework will be assigned for each chapter and will be due 7 days after we finish that chapter's material. This class meets Tuesdays and Thursdays so if we finish a chapter on Tuesday it will be due next Tuesday.
All assignment notices will be posted on Canvas as well as announcement slides in lecture. Please try to complete homework assignments on time.

- Microsoft Edge may not work with Achieve, you may want to use another browser instead (Chrome, Firefox, Safari). Mobile devices do not play well with Achieve; so using a desktop computer, laptop, or tablet is recommended
- Do not buy 'USED' Achieve access codes, they probably will not work.

Enrolling in Achieve section for this course follow steps below:

- Navigate to the Achieve Access Module on Canvas and click on Achieve Home to connect your Canvas and Achieve Accounts. If at all possible use your UT Tyler Patriots email.
- Follow these instructions for hep connecting your Canvas and Achieve accounts.

Other helpful links:

- Disable browser pop-up blockers and refer to the troubleshooting guide if you experience any difficulty accessing Achieve.
- Browse Achieve: Getting Started Guide for Students
- Contact Macmillan Customer Support

You have a 2-week grace period when Achieve is free in case you decide to drop the course. It costs $50 per semester.

Homework counts for 20% of the course. It can make or break your grade.

Don't put off homework until the due date. When everyone tries to access Achieve at the same time, bad things can and do happen.

Lowest homework grade is dropped.

Midterm Exams (45% of Total Grade)

Tentative Midterm Exam dates: February 12 (Thu), March 19(Tue), and April 16 (Thu) At least one week's notice will be given prior to the exam. The exams will be 26 multiple-choice and short-answer questions. They cover material discussed in lecture and homework assigned in Achieve.

- Each question is worth 3.5 points for a total of 105 points. Your score will be taken out of 100 so it is possible to get over 100 on the midterm exams
- You are required to bring a pencil and non-programmable scientific calculator. One hand-written $3^{1/2}$" x 5" note card, both sides is permitted (no photocopies or printed materials)
- I will provide scantrons and scratch paper for calculations.
- Midterm Exams start at 10:10 am and end by 11:05 am. When finished please turn in your exam, scantron, notecard, and scratch paper.
- I will do my best to return everything by the next class

Exam make-up days: April 22 (Wed) from 1:30 pm - 3:30 pm or Apr 24 (Fri) from 10:30 am - 12:30 pm

You will have to fill out a google form with what test you are needing to make up, day and time you are coming to make up the exam.

- If you miss these days to makeup an exam then the final will replace the 0 for the missed exam
- Can schedule to makeup exam earlier, but will need to email me to arrange a day and time.

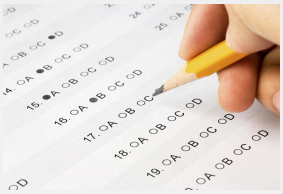
I do sometimes make mistakes (as does the scantron reader). If you find a mistake, please see me as quickly as possible - within 1 week - after the exam is returned; otherwise, that exam score will be considered final

There will be a practice quiz for each chapter posted on Canvas.

Make sure you are studying 15-30 minutes a day. The day/night before the exam is a bad time to start

Exam Review Dates

- Feb 9 (Mon) 4-6 PM
- Mar 16 (Wed) 4-6 pm
- Apr 20 (Mon) 4-6 pm



Cellphones, smart watches, and any similar electronic devices must be turned off and put away during exams. If they are observed out in a visually accessible place (i.e. between legs, on the floor, etc.), it will be assumed that they are being used to cheat; your exam will be taken away, you will receive a zero score (0 points) for the test, and you will be referred to the Office of Judicial Affairs.

Final Exam (25% of Total Grade)

The final examination will be given on (and only on) day, April ##, from Time to Time in BRB 1030. You are REQUIRED to take the final examination in order to receive a passing grade in the course. There will be no make-up of the final exam, no exceptions. This will be an in-person exam

- The final examination is a nationally standardized exam written by the American Chemical Society (ACS) and is comprehensive over **both semesters** of general chemistry (70 multiple-choice questions). The questions are not particularly hard, but there are A LOT of them.
- A study guide to help you prepare for the final exam can be purchased. See your instructor for more details later this semester.

Do not brain dump after each exam. The material builds on itself and gets used over and over again.

You must take the final exam to pass the class

Midterm Exam Grade Replacement

I will replace your lowest midterm exam score with your final exam score if your final exam score is higher **and you have a C or higher average midterm exam grade**. (If the final exam score is the lowest score, then no grades will be replaced.)

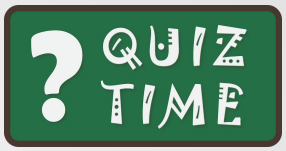
- Canvas does not have a good way to do this so this will be determined using a separate gradebook (Excel spreadsheet).
- If you have questions about this policy, please ask.

Weekly Quizzes (10% of Total Grade)

I will assign a quiz over each week's lecture material - except on exam days. It will be due by 11:59 pm on Sundays

- You can use textbook, notes, and a calculator
- Some question may be more like survey questions
- These quizzes represent 10% of the overall course grade.
- Total of 14 and will drop 1at the end of the semester

Ex: Assigned on Thursday, due on Sunday at 11:59 pm



Grading Scale

Grades will tentatively be assigned on a 90/80/70/60 scale, but may be adjusted based upon my evaluation of the overall class performance. Attendance, class participation, and initiative will be considered for borderline grades. Grades will be posted on Canvas and weighted as follows:

Online Homework	20%
Midterm Exams	45%
Final Exam	25%
Daily Quizzes	10%
Total	100%*

* The OFFICIAL grade book is on a separate grade book on my computer (in case of mistakes)

Email Policy (jeromelewis@uttyler.edu)

Contrary to popular thought, instructors do have lives outside. Saying that: I will try to respond to email regularly throughout normal business hours (8:30 am - 5:30 pm). After hours and weekends, I will respond as my life activities allow. Please do not expect responses to emails sent after 6:30 pm until the next day.

Attendance Policy

Experience has shown that course grades are directly proportional to lecture attendance. Therefore, attendance is expected. Class participation is a significant measure of performance. Not attending lecture may not only cause you to become behind in the understanding of the course but it may also negatively affect your grade. If you are unable to attend a class meeting, all discussed material and all assignments are your responsibility.

Classroom Courtesy

I expect students to behave with respect and courtesy to both the instructor and fellow students by:

1) Deactivating/silencing all phones, laptops, smart watches, and/or other electronic devices
2) Not texting or calling during class. If you absolutely must take a call, please leave class.
3) Use electronic devices responsibly. Make sure you are not distracting others
4) Not talking during class presentations or over top of another person during discussion. A quiet discussion about the material is fine (Make sure to whisper)
5) If you enter late or leave early make sure to do with minimal disruption. Sometime you cannot avoid late arrival or early exiting, but please do not make it a habit.
6) Do not be offended when I repeat your question so that others may hear what you are asking
7) If you have a question, respectfully interrupt me. I sometimes do not see people's hands raised.

Do not brain dump after each exam. The material builds on itself and gets used over and over again.

You must take the final exam to pass the class

In Case of illness

Students who are feeling ill or experiencing symptoms such as sneezing, coughing, digestive issues (e.g. nausea, diarrhea), or a higher than normal temperature should stay at home.

If you choose to attend class while sick a communicable disease please make an effort to distance yourself from others or wear a mask. **This is one case where sharing is not caring.**

Be proactive in taking care of yourself and your health by practicing good self-care .

Academic Integrity & Cheating Policy

The value of any academic degree depends upon the integrity of the work done in earning that degree. Academic misconduct includes, but is not limited to cheating, plagiarism, collusion and/or falsification of records (including data collection). Students are expected to assume full responsibility for the content and integrity of all academic work submitted as homework, projects and examinations. University policy obliges instructors to report cases of academic misconduct to the Dean of Students; it also obligates students to report observed instances of academic dishonesty to the instructor. I expect a high level of responsibility and academic honesty from my students.

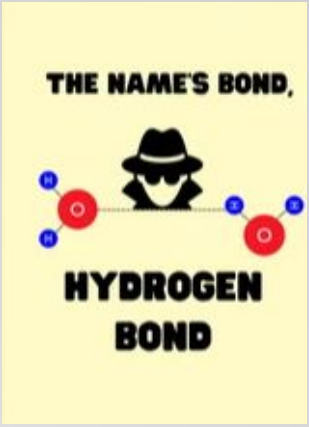
On each test you will be required to sign the UT Tyler Honor Code. By signing, you agree that if you are caught teaching on a test, you understand that you will receive a zero on the test and be reported to the judicial committee for academic dishonesty.

UTTyler
The University of Texas at Tyler

Honor and integrity that will not allow me to lie, cheat, or steal, nor accept the action of those who do.
- **UT Tyler Honor Code**

Course Topics

- Chapter 10 - Gases (*Week 1 - 2)
- Chapter 11 - Liquids and Intermolecular Forces (*Week 2 - 3)
- Chapter 12 - Solids and Modern Materials (*Week 4)
- **Exam 1 - Chapters 10-12**
- Chapter 13 - Properties of Solutions (*Week 5 - 6)
- Chapter 14 - Chemical Kinetics (*Week 6 - 7)
- Chapter 15 - Chemical Equilibrium (*Week 7 - 8)
- **Exam 2 - Chapters 13-15**
- Chapter 16 - Acid-Base Equilibrium (*Week 9 - 11)
- Chapter 17 - Additional Aspects of Aqueous Equilibria (*Week 12)
- Chapter 19 - Chemical Thermodynamics (*Week 13)
- **Exam 3 - Chapters 16-19**
- Chapter 20 - Electrochemistry (*Week 14 - 15)
- Chapter 21 - Nuclear Chemistry (time permitting)



* Tentative schedule of what will be covered in class. There may be times when material begins and ends on a different day.

Student Resources

- Enrollment Services Center is where you add/change majors, add or drop classes or get financial aid help. (They are very busy during the first couple of weeks of the semester and around the "drop date" so please cut them some slack during those times.)
- Student Counseling Center
  - Dealing with stress/anxiety, improving studying skills, time management, etc. (all confidential)
- UT Tyler Student Health and Wellness
  - Substance abuse, household violence, good eating habits, etc.
- Academic Success
  - Student Learning Communities (SLC), PASS Tutoring Center, and Upswing 24/7 online tutoring
- Mathematics Learning Center (RBN 4021)
  - Open access computer lab with tutors on duty to assist students enrolled in early-career courses
- The Writing Center
  - They will help you learn how to ~~right rite~~ write ~~gooder~~ better.
- Student Life
  - Clubs, Greek System, recreational sports, service opportunities, etc.
- Patriot Engage
  - See what activities are being held and coming up on campus