

General Chemistry II – Chem132 Sections 1 and 2 Fall 2024

Dr. Yvette Yang

Chem 132-001: MWF 9:10-10.00 am in SRF 307

Chem 132-002: MWF 12:40-1:30 pm in BUE 555

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Office: Buehler 414

Office Hours: Tuesday 10-11am, 12:30-2:30pm in Strong 308

Friday 10:30-11:30am in Buehler 414

Other time by appointment

Module	Week of	Monday	Wednesday	Friday	Work on Workshops
1	Aug 19-25	Ch 9 (9.1-4)	Ch 9	Ch 9	WS 0 – review
2	Aug 26-Sep 1	Ch 9	Ch 10	Ch 10	WS 1 - Ch 9
3	Sep 2-8	No class Labor Day	Ch 10	Ch 11	WS 2 - Ch 10
4	Sep 9-15	Ch 11	Ch 11	Exam review	WS 3 - Ch 11
5	Sep 16-22 Exam 1: Tue, Sep 17, 7-8:30pm	Ch 11	Ch 12	Ch 12	WS 3 - Ch 11
6	Sep 23-29	Ch 12	Ch 12	Ch 13	WS 4 - Ch 12
7	Sep 30-Oct 6	Ch 13	Ch 13	Ch 13	WS 5 - Ch 13
8	Oct 7-13	No class Full break	Ch 13	Exam review	WS 5 - Ch 13
9	Oct 14-20 Exam 2: Tue, Oct 15, 7-8:30pm	Ch 13, Ch 14	Ch 14	Ch 14	WS 6 - Ch 14
10	Oct 21-27	Ch 14	Ch 15(15.1-2)	Ch 15	WS 6 - Ch 14
11	Oct 28-Nov 3	Ch 15	Ch 16	Ch 16	WS 7 - Ch 15
12	Nov 4-10	Ch 16	Ch 16	Exam Review	WS 8 - Ch 16
13	Nov 11-17 Exam 3: Tue, Nov 12 7-8:30pm	Ch 17(17.1-5)	Ch 17	Ch 17	WS 9 - Ch 17
14	Nov 18-24	Ch 17	Ch 17, Ch 20	Ch 20	WS 9 - Ch 17
15	Nov 25-Dec 1	Ch 20	No class Thanksgiving	No class Thanksgiving	WS 10 - Ch 20
16	Dec 2-3 Final: Thu, Dec 5 1:00-3:15pm	Final Exam Review	Study Day		

Course Description: A general course in theoretical and descriptive chemistry covering quantitative treatment of concentrations, acid base chemistry and equilibrium, fundamentals of kinetics, chemical thermodynamics, and electrochemistry.

Required Course Packet:

Textbook and Online Homework System (OWLv2): The textbook we are using is “*Chemistry: An Atoms First Approach*” by Zumdahl and Zumdahl 3rd Ed. A package of the digital format of the textbook, student solution manual and online homework materials (OWLv2) from Cengage is provided through the Total Access program. Students will have access to course materials now through Canvas and be charged for the materials directly on their student accounts. The e-book is available under “Online Homework and eBook” module after you register to Cengage. The student solutions manual will be on the Cengage dashboard. There will be an optional loose-leaf textbook available in the VolShop.

Clicker: Clicker from Point Solutions is used in the class. A physical clicker is not needed. You can use your phone or laptop. This link (<https://oit.utk.edu/teachingtools/clickers/clickers-for-students/>) gives you all the information about the clicker. Please use that link to create your account and register your clicker. You also need connect your clicker to Canvas using a link called “PointSolutions Registration” in “Course Intro: Getting Started” module on Canvas. For questions about clicker registration, please contact OIT at 865-974-9900. Get your device ready at the beginning of each lecture.

Canvas: Class announcements, lecture notes, course information, course documents, and grades will be on Canvas. Students are responsible for monitoring their UTK e-mail account and the course site on Canvas. It is very important to get familiar with the Canvas course structure and content.

Lecture Attendance and Participation: Lecture attendance and participation count for 5% of the total grade and are taken with clicker. There are no make-up points for clickers. The absence from the lectures due to illness, university sponsored activities, death in the immediate family, etc. can be excused with proper documentation.

Online Homework (OWLv2): Online homework counts for 15% of the total grade for the course, and no credit will be received after the due date. The homework is assigned weekly. To access OWLv2, locate and click the VolBooks Course Materials (VitalSource) tool in the left pane in Canvas. You will see the “Launch Course Materials” button/link associated with your course materials. *This link only needs to be used the first time you are attempting to access the Cengage course.* After, you can continue to use this link, or any Cengage link that is showing in the Canvas shell. To access the homework assignments, it is easy to go to the module of the week and look for homework after you register into OWLv2. The four introduction assignments for OWLv2 and chem review assignment are for extra credit. Chem review assignment is a good review to prepare you for the course. All of these assignments can be found under Module 1. Start now!

For each chapter, there will be Math Review, Mastery and EOC (End Of Chapter) assignments for grade and Adaptive Study Plan for optional practice. The Math Review is prerequisite for Mastery and EOC assignments for that chapter. You must score at least 60% on Math Review to do other assignments. You should do the assignments in this order: Math Review, Mastery,

EOC, then Adaptive Study Plan.

Types of homework assignments are described in this table:

Assignment Type	Grade	Given Attempts	Description	Best Time to Do the Assignment
Prerequisite Math Review	Graded	10	Math skills required for the chapter	Before Mastery and EOC. You can't do the Mastery or EOC until you earn 60% in the Math Review Assignment.
Mastery	Graded	10	Single concept questions, comes with group (3 questions per group). Need to answer 2 out of 3 correctly to get credit.	After the concept is covered in each lecture. Don't wait until the chapter is finished and too many concepts are covered.
EOC (End Of Chapter)	Graded	6	Multi-concept questions, applications	After Mastery assignments
Adaptive Study Plan	Not graded		Test and study plan based on your test result	After chapter is finished, preparation for exams

Workshops: Workshops are available on Canvas for every chapter and provide more practice. I will work on some problems with you in lecture if time allows (usually the last lecture of the chapter on the syllabus). It works best if you work on them in advance and bring questions to lectures. The keys with detailed solutions and the videos with step by step explanations are also available on Canvas.

Exams and Quizzes: There are three evening exams given on Tuesdays at 7-8:30 PM. The exam with the lowest score will be replaced by the final exam if the final exam score is higher than the lowest exam score. No make-up exams will be given. If one of the three exams is missed due to an excused absence (for extenuating circumstance only, please see 'Hilltopics' for what qualifies as an extenuating circumstance), then the average of other two exams and the final exam will count as the excused exam grade. There are eight quizzes which are online on OWLv2 through Canvas on Thursdays for the most time with a time window of 8:00 am -11:55 pm. Two quizzes with the lowest grades will be dropped. If you miss a quiz due to excused absence, your missed quiz will be excused. All the excuses for exams and quizzes require written documentation and approval by the instructor. See below for specific instances and documentation required.

Instance	Documentation Required
Illness	Doctor's excuse note
University sanctioned activities	Copy of the official documentation
Death in the immediate family / primary provider or care-giver	Obituary or written documentation from the facilities for the service
Others	Follow the instructions provided by UTK Student Life at https://studentlife.utk.edu/caring-for-all-vols/absence/ . Submit a formal document.

Final Exam: The final exam is comprehensive. This is a departmental exam and will not be

rescheduled for any student scheduled to take more than two exams on this day (see the catalog for more information about final exam policy).

Grading: The course final grade will be calculated as follows:

Lecture attendance and participation: 5%

Online homework: 15%

Online quizzes: 15% (Two quizzes with the lowest scores will be dropped.)

Three exams: 45% (The exam with the lowest score will be replaced by the final exam if the final exam score is higher than the lowest exam score.)

Final exam: 20% (comprehensive)

Tentative Grading Scale: 90 and above: A⁻, A; 77-89: B⁻, B, B⁺; 64-76: C⁻, C, C⁺;
52-63: D⁻, D, D⁺; Below 52: F

These letter grade assignments are subject to change.

Any request for regrading must be made in email to me within one week of receiving the graded exam. We reserve the right to regrade the entire exam. Clicker grades are posted on Canvas periodically. Any discrepancies about clicker grades must be discussed with the instructor within two weeks of the grade posting.

Calculator Policy: All students must have a non-graphing, scientific calculator with exponential and logarithm capability and without Internet capability. Graphic calculators and any electronic device with internet capability are prohibited during quizzes and exams. Use of these devices during a quiz or exam will be considered as a form of academic dishonesty. You should use your non-graphing calculator for homework, so you feel comfortable using it during the exams.

Extra Help: The following resources are available to you.

- **Dr. Yang's Office Hours:**
Tuesday 10-11am and 12:30-2:30pm in Strong 308
Friday 10:30-11:30am in Buehler 414
Other time by appointment
- **Course TA's Office Hours:** will be listed on Canvas.
- **Chemistry Learning Center (Buehler 513 and Strong 303):** It is staffed by TAs from various general chemistry courses, and all of them can answer questions about the topics covered in this course as well as Chem 133 lab. The Chemistry Learning Center offers in-person office hours during the weekdays and zoom office hours during some nights and weekend. No appointment is needed! The schedule will be available on Canvas.
- **Student Success Center:** A supplemental Instruction (SI) at Student Success Center is free for all the students who want to improve their understanding of the course content. You can also get individual assistant there. For more information, please see <https://studentsuccess.utk.edu/academic-success-center/>

Learning Objectives:

1. Learn the fundamentals of liquids, and intermolecular forces.
2. Become familiar with reactions in aqueous solution, expressions of solution concentration, and properties of solutions.

3. Learn the fundamentals of chemical kinetics, including basic reaction mechanisms.
4. Acquire a thorough understanding of chemical equilibrium, including acid-base equilibrium and aqueous solubility equilibria, and become competent in the related calculations.
5. Obtain knowledge of the basics of chemical thermodynamics, including the concepts of enthalpy, entropy, and free energy.
6. Learn the basics of electrochemistry.
7. Have a good understanding of transition metals and their basic coordination chemistry.
8. Develop analytical reasoning and mathematical problem solving skills in chemistry.

Onter General Policies: All the emails to me or the course TA must include “Chem 132, section number and subject” in the email subject (eg. “Chem 132, Section 2, a question about Chapter 12”). Always bring your student ID to all lectures and exams.

Academic Dishonesty: An act of academic dishonesty may lead to such penalties as reduction of grade, probation, suspension, or expulsion from the University.

Honor Statement: “An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.”

Academic dishonesty takes on several forms including: copying or sharing answers on tests or assignments, using someone else’s lab data, changing answers prior to a re-grade, plagiarism, having someone else do your academic work, and letting someone else copy your work. It is also considered violating the honor code if you upload copyrighted materials (lecture notes, assessment questions) to online platforms such as Chegg, Studyblue, CorseHeroetc.

Depending on the act, a student could receive a grade of “0” on the assignment, a grade of “F” for the course, and be suspended or expelled from the University. Please do not make me go through this painful process of reporting academic dishonesty.

Generative AI Tools: In this course, it is expected that all submitted work will be produced by the students themselves. Students must not seek the assistance of Generative AI Tools like ChatGPT. Use of a Generative AI Tool to complete an assignment constitutes academic dishonesty.

Disability Services: The University of Tennessee, Knoxville, is committed to providing an inclusive learning environment for all students. If you anticipate or experience a barrier in this course due to a chronic health condition, a learning, hearing, neurological, mental health, vision, physical, or other kind of disability, or a temporary injury, you are encouraged to contact Student Disability Services (SDS) at 865-974-6087 or sds@utk.edu. An SDS Coordinator will meet with you to develop a plan to ensure you have equitable access to this course. If you are already registered with SDS, please contact your instructor to discuss implementing accommodations included in your course access letter.

The instructor reserves the right to revise this syllabus as necessary. Students will be notified by email of any changes.