## General Chemistry II – Chem132 Sections 2 and 4 Spring 2024

Dr. Yvette Yang Chem 132-002: TR 9:45-11:00 am in Buehler 555 Chem 132-004: TR 12:55-2:10 pm in Buehler 555

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Module	Week of	Tuesday	Thursday	Work on Workshops
1	Jan 22-28	Ch 9 (9.1-4)	Ch 9	WS 0 – review
2	Jan 29-Feb 4	Ch 9, Ch 10	Ch 10	WS 1 - Ch 9
3	Feb 5-11	Ch 10	Exam review Ch 11	WS 2 - Ch 10
4	Feb 12-18 Exam 1: Tue, Feb 13 7-8:30pm	Ch 11	Ch 11	WS 3 - Ch 11
5	Feb 19-25	Ch 11, Ch 12	Ch 12	WS 4 - Ch 11
6	Feb 26-Mar 3	Ch 12	Ch 12 Exam review	WS 4 - Ch 12
7	Mar 4-10 Exam 2: Tue, Mar 5 7-8:30pm	Ch 13	Ch 13	WS 5 - Ch 13
8	Mar 11-17 Spring Break	No class	No class	
9	Mar 18-24	Ch 13	Ch 14	WS 6 - Ch 14
10	Mar 25-31	Ch 14,	No class	WS 6 - Ch 14
11	Apr 1-7	Ch 15 (15.1-2)	Ch 15	WS 7 - Ch 15
12	Apr 8-14	Ch 16	Exam Review	WS 8 - Ch 16
13	Apr 15-21 Exam 3: Tue, Apr 16 7-8:30pm	Ch 16	Ch 16 Ch 17 (17.1-5)	WS 8 - Ch 16
14	Apr 22-28	Ch 17	Ch 17	WS 9 - Ch 17
15	Apr 29-May 5	Ch 17, Ch 20	Ch 20 (20.1-4)	WS 10 - Ch 20
16	May 6-8 Final: Fri, May 10, 10:30am-12:45pm	Final Exam Review		

**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 3<sup>rd</sup> Ed. A package of the digital format of the textbook, student solution manual and online homework materials (OWLv2) from Cengage is provided through the Inclusive Access program. Students will have access to course materials now through Canvas and be charged for the materials directly on their student accounts. There will be an optional loose-leaf textbook available in the VolShop. To register to Cengage, go to your Canvas course and click the link "Homework-Yang Chem132 Sections 2 & 4 Spring 2024" under "Online Homework and eBook" module. The e-book and student solutions manual are available under "Online Homework and eBook" module.

<u>Clicker</u>: Clicker from Point Solutions is used in the class. A physical clicker is not needed. You can use your phone or laptop. This link (<u>https://oit.utk.edu/teachingtools/clickers/clickers-for-students/</u>) 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. Watch a video to learn how to register into OWLv2 through Canvas using the link "How to register into OWLv2 through Canvas (Video)" under "Online Homework and eBook" module in your Canvas course. To register to OWLv2, click the link "Homework-Yang Chem132 Sections 2 & 4 Spring 2024". To access the homework assignments, go to the module of the week and look for homework after you register into OWLv2. The four introduction assignments are for extra credit. The chem review and math review assignments are required. All of these assignments can be found under Module 1. Start now! Chem review and math review assignments are good reviews to prepare you for the course.

Assignment Type	Grade	Given Attempts	Description	Best Time to Do the Assignment
Mastery	Graded	10	Single concept questions,	After the concept is

Three types of homework assignments are described in this table:

			comes with group (3	covered in each lecture.
			questions per group).	Don't wait until the chapter
			Need to answer 2 out of 3	is finished and too many
			correctly to get credit.	concepts are covered.
EOC (End	Graded	6	Multi-concept questions,	After Mastery assignments
Of Chapter)			applications	
Adaptive	Not		Test and study plan	After chapter is finished,
Study Plan	graded		based on your test result	preparation for exams

For chapter assignments, you should always do Mastery assignment first, then EOC assignment.

- **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. If you miss an exam for an extenuating circumstance (please see 'Hilltopics' for what qualifies as an extenuating circumstance), then the exam must be made up on Thursday following the exam date 4:00-5:30pm. If the make-up exam cannot be taken on the make-up date, the missing exam grade will be replaced by the final exam. Quizzes are online on OWLv2 through Canvas on Tuesdays 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 for an extenuating circumstance, your missed quiz can be made up. 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 /	Obituary or written documentation from the facilities for the	
primary provider or care-giver	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<sup>-</sup>, A; 77-89: B<sup>-</sup>, B, B<sup>+</sup>; 64-76: C<sup>-</sup>, C, C<sup>+</sup>; 52-63: D<sup>-</sup>, D, D<sup>+</sup>; 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 calculator 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: Monday 10-11am and 1-3pm in Strong 308 Wednesday 10-11am in Strong 308 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 inperson 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 <a href="https://studentsuccess.utk.edu/academic-success-center/">https://studentsuccess.utk.edu/academic-success-center/</a>

## 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 Al 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 in email of any changes.