



THE UNIVERSITY OF  
**TENNESSEE**  
KNOXVILLE  
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## **Chemistry 132 - 003, General Chemistry II, Spring 2024**

**Dr. Nahla A. Hatab**

[nabuhata@utk.edu](mailto:nabuhata@utk.edu).

***Lectures:***

11:20 – 12:35 PM (TR) Buehler Hall 555

**Office:** 305 Strong Hall

**Office Hours:** 11:00 – 2:00 PM (M), 10:30 – 2:30 PM (W), or by appointment, please send me an email to schedule an appointment.

**Email:** [nabuhata@utk.edu](mailto:nabuhata@utk.edu). Given the massive amount of email I receive, you must include a subject that is informative and your name with course number. Please don't hesitate to email me with updates, questions, or concerns. I will respond to all emails usually in no more than 24 hours.

**Lecture TA:** Aleksandra Antevska, [aantevsk@vols.utk.edu](mailto:aantevsk@vols.utk.edu).

**Textbook:** Zumdahl/Zumdahl/DeCoste's Chemistry: An Atoms First Approach, 3rd Edition, (ISBN 9798214192451). Publisher: Cengage. A package of the digital format of the textbook and online homework materials is provided through the **Inclusive Access program**. OWLv2 and the e-text are included with your Inclusive Access purchase. There will be an optional loose-leaf textbook available in the VolShop for \$31.25 for any student in the Inclusive Access Program. You do not need to purchase a hard copy unless you wish to.

**Canvas:** Class announcements, lecture notes, course documents, and grades will be posted on Canvas ([utk.instructure.com](https://utk.instructure.com)). Students are responsible for monitoring their UTK e-mail account and the course site.

**Clicker:** A clicker is required for the course. There will be clicker questions in many lectures. I will count the clickers two different ways: 1) Attendance 2) As participation points. All questions will be worth 2 points for the correct answer and 1 point for the incorrect answer. You do not need to purchase a physical clicker since you can use a laptop or your mobile device as a clicker. Please register your clicker online (<https://oit.utk.edu/teachingtools/clickers/>). There are no make-up points for clickers.

**Technical Support:** For technical issues, contact the OIT HelpDesk by phone at (865) 974-9900 or at the [Walk-in HelpDesk](#). For IT and Computing issues, use the online [Contact Form](#)

**Course Description:** Second course in a two-semester sequence covering quantitative treatment of concentrations, acid base chemistry and equilibrium, fundamentals of kinetics, chemical thermodynamics, and electrochemistry.

**I expect from you the following:**

- Be prepared for all classes
- Be respectful of others
- Actively contribute to the learning activities in class
- Abide by the UT Honor Code

**Grading:**

Three exams:	45% (Exam 1: 15% - Exam 2: 15% - Exam 3: 15%)
Online Homework assignments	15%
Quizzes	15%
Participation (Clicker& Attendance)	5%
Final Exam (comprehensive)	20%

**Grading Scale:**

• 94 and above:	A
• 88.0 – 93.9	A-
• 84.0 – 87.9	B+
• 80.0 – 83.9	B
• 76.0 – 79.9	B-
• 72.0 – 75.9	C+
• 68.0 – 71.9	C
• 64.0 – 67.9	C-
• 60.0 – 63.9	D+
• 56.0 - 59.9	D
• 52.0 - 55.9	D-
• 51.9 and below	F

Note: These letter grade assignments are subject to change, but only in the direction beneficial to the students.

**Exams:** There will be three (3) 90 minutes evening exams and one (1) two hours Final exam. The three exams will be given on the selected days (see below) at 7:00 – 8:30 pm. The final exam will be given during the final exam period. No make-up exams will be given. If one of the three exams is missed due to excused absence, then the final exam will count as the excused exam grade. An excused of missed exam or absence will only be considered with the support of written documentation. **The re-grading of an exam** must be requested within 5 school days of receiving the graded exam. To request a regrade,

you will need to staple the regrade form (found online) with your name and a brief description of what the issue is to your exam and turn it into me. With regrades, the entire exam will be regraded. The final exam will be comprehensive and will count for 20% of the final grade and will be given during final exam week. The room will be announced later in the semester via Canvas and email. Every student is required to take a comprehensive final exam during the schedule exam period. *If the final exam is a higher grade than the lowest exam grade then the final exam grade will replace the lowest exam grade as long as all 3 regular exams are taken.*

**Exam Schedule** (All locations are TBA)

Exam 1: Tuesday February 13<sup>th</sup> from 7:00-8:30 pm

Exam 2: Tuesday March 5<sup>th</sup> from 7:00-8:30 pm

Exam 3: Tuesday April 16<sup>th</sup> from 7:00-8:30 pm

Final Exam: Friday May 10<sup>th</sup> from 10:30-12:30 pm

**Quizzes:** We will be having announced OWLv2 quizzes online. These quizzes will cover material from lecture notes, workshops, and reviews. These will count for 15% of your final grade. No makeup quizzes are given. If you miss a quiz due to a university approved excuse you will need to present official documentation to me; the missed quiz will be left out of your grade and the remaining quizzes will be used. The lowest two quizzes grade will be dropped at the end of the semester.

**Online Homework:** Online homework counts for 15% of the final grade, and no credit will be given after the due date. To access your course materials, you must first login to your Canvas account and click the link for Chem 122 course. Please use your vols account to login. If you see a message saying “you already have an account”, then click “forgot password” and reset your account. If you are still having problems then email Ms. Jennifer McCown, [Jennifer.mccown@cengage.com](mailto:Jennifer.mccown@cengage.com). We will be using OWLv2 electronic homework system. Once you get access to the online homework course, you will do the following assignments:

- (1) Four short introduction assignments
- (2) Math review assignment
- (3) Quick Prep assignment

These assignments will introduce you to OWLv2 system, and prepare you for the course. Finish these assignments as early as possible so you can focus on the course material we will cover.

You will have four types of homework assignments for each chapter. They are described in the following table

Assignment Type	Grade	Given Attempts	Description	Best Time to Do the Assignment
Mastery	Graded	10	Single concept questions, comes with group (3 questions per group).	After the concept is covered in each lecture. Don't wait until the

			Need to answer 2 out of 3 correctly to get credit.	chapter is finished and too many concepts are covered.
EOC (End Of Chapter)	Graded	6	Multi-concept questions, applications	After Mastery assignments and after the chapter is finished.
Multimedia Activity	Not graded		Short videos, simulations	Before lecture, get some ideas what will be covered in lecture
Adaptive Study Plan	Not graded		Test and study plan based on your test result	After chapter is finished, preparation for exams

**Extra Help:** In addition to my office hours, two other resources are available for you:

1) TAs will have office hours that will be announced during the first week of class. All TA office hours will be in the Chemistry Learning Centers (Buehler 513 & Strong Hall 303). It's free and staffed by Graduate teaching assistants from Monday to Friday.

2) Student Success Center. A supplemental Instruction (SI) is also free for all the students who who want to improve their understanding of the course content. For more information please see <https://studentsuccess.utk.edu>

**Calculator policy:** Non-programmable scientific calculators such as TI 30 are allowed. No graphing calculators. Bring a calculator to lecture, and exam.

**ACADEMIC DISHONESTY:** An act of academic dishonesty may lead to such penalties as reduction of grade, probation, suspension, or expulsion from the University. I reserve the right to assign a grade of zero for actions involving violations of the following University of Tennessee Honor Code:

*"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."*

IN summary, this course has a zero tolerance policy on cheating. Individual cases will be prosecuted to the full extent possible.

**Generative AI Tools:** In this course, it is expected that all submitted work is 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:** please contact the Office of Disability Services (ODS) at 2227 Dunford Hall, phone 974-6087 or use <http://ods.utk.edu>, if you require course adaptations or accommodations due to a

disability, or if you have emergency information to share. The disability must be documented. ODS will work with the students and the faculty to coordinate reasonable accommodations for students with documented disabilities.

**Learning Objectives for General Chemistry 132:**

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.

Always bring your student ID to all lectures, and exams. Keep your cell phone off during lectures, and exams.

Week	Lecture (TR)	Workshop/Exams
January 22 – January 26	CHEM 122 Review and Chapter 9 (9.1,2,8-10)	CHEM 122 Review Workshop
January 29 – February 2	Chapter 9 and 10	Chapter 9 Workshop
February 5 – February 9	Chapter 10 and 11	Chapter 10 Workshop
February 12 – February 16	Chapter 11	Chapter 11 Workshop <b>Exam 1 (2/13: 7:00-8:30 pm)</b>
February 19 – February 23	Chapter 11 and 12	Chapter 11 Workshop
February 26 – March 1	Chapter 12	Chapter 12 Workshop
March 4 – March 8	Chapter 12 and 13	Chapter 13 Workshop <b>Exam 2 (3/5: 7:00-8:30 pm)</b>
March 11 – March 15	No Classes	Spring Break (No Classes)

March 18 – March 22	Chapter 13	Chapter 13 Workshop
March 25 – March 29 (3/28 & 3/29) No Class – Spring Recess)	Chapter 13 and 14	Chapter 14 Workshop
April 1 – April 5	Chapter 14 and 15 (15.1-2)	Chapter 14 Workshop
April 8 – April 12	Chapter 15	Chapter 15 Workshop
April 15 – April 19	Chapter 16	Chapter 16 Workshop <b>Exam 3 (4/16: 7:00-8:30)</b>
April 22 – April 26	Chapter 17	Chapter 17 Workshop
April 29 – May 3	Chapter 17 and 20	Chapter 20 Workshops
May 6 – May 10 Study day (5/8)	Chapter 20 and Review <b>Final Exam (Friday 5/10: 10:30-12:30 PM)</b>	Chapter 20 Workshop

**Each Chapter Coverage:**

Chapter 9 – Sections 1, 2, 3, and 4

Chapter 10 – All sections

Chapter 11 – All sections

Chapter 12 – All sections

Chapter 13 – All sections

Chapter 14 – Sections 1-4 and 5 (just introduction of A/B indicator

Chapter 15 – Sections 1 and 2

Chapter 16 – All sections

Chapter 17 – Sections 1 – 5

Chapter 20 – Sections 1, 3, and 4

**The instructor reserves the right to revise, alter, or amend this syllabus as necessary. Students will be notified in writing / email of any such changes.**