

**1151K Survey of Chemistry I, Fall 2023**  
**University of North Georgia**

**Instructor:** Lori Wilson, Ph.D.

**Email:** [lori.wilson@ung.edu](mailto:lori.wilson@ung.edu)

**Cell Phone:** 859-358-6373

**Student Drop-In Hours:** I am here to help you learn chemistry. Drop-in hours are TR 4-5:30 pm and MWF 2-3 pm. If you can't drop in at those times, please contact me for an appointment. Upon request, we can meet on zoom using this meet anytime link:

<https://ung.zoom.us/j/85388270716?pwd=anJiVHdmbVBjYRjQwS0ZINXY1LzJnUT09.>

**Course Description:** CHEM 1151K is an integrated classroom and laboratory course which is the first course in a two-semester sequence covering the elemental principles of general, organic, and biochemistry designed for allied health majors and non-science majors. Topics to be covered include elements and compounds, chemical reactions, stoichiometry, nomenclature, and molecular structure.

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**Overall course goal:** CHEM 1151K is designed to help students understand matter at the microscopic and macroscopic levels, which is essential for practical problem-solving in healthcare. The course explores the connections between matter's underlying structure, energy in chemical transformations, and observable changes in physical properties. By the end of the course, students will gain valuable insights applicable to healthcare and beyond.

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*After this course, students should be able to:*

1. Understanding the classifications, states and their properties of matter. Explain the scientific method.
2. Essential: Writing and Performing Unit Conversions. Writing the names and abbreviations for the metric and SI units
3. Determine the number of significant figures a number has and how to adjust significant figures in calculated answers.
4. Essential: Describe the structure of the atoms and elements
5. Essential: Naming chemical compounds (ionic and covalent)
6. Essential: Balance and identify different types of chemical reactions
7. Understand Avogadro's number and use it in chemistry calculations.
8. Identify a limiting reagent and calculate the amount of product formed from the limiting reagent. Calculate percent yield.
9. Essential: Describe the kinetic molecular theory of gases and the units of measuring gases
10. Understand and Apply Boyle's Law, Charles's Law, Gay-Lussac's Law, Avogadro's Law, and Dalton's Law
11. Use the combined and ideal gas law to perform calculations in chemical reactions.
12. Understanding energy and energy transfer
13. Describe alpha, beta, positron, and gamma radiation. Write balanced nuclear equations showing mass numbers and atomic numbers.
14. Perform calculations of half-lives of radioisotopes.
15. Describe the energy levels, sublevels and orbitals in an atom and be able to draw electron orbital diagrams.
16. Use the periodic table to identify trend in various properties. Use the electronegativity trend to determine if a chemical bond is polar or non-polar.
17. Predict and describe intermolecular forces and how they correlate to the properties of solids and liquids.
18. Calculate concentrations of solutes in solutions and the dilution of a solution. Describe colligative properties of solutions.

19. Describe chemical equilibrium. Use equilibrium constants in calculations and apply Le Chatelier's principle.
  20. Define pH. Describe buffer systems. Write expressions for the dissociation constant of a weak acid or weak base.
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### Required Resources

1. **Computer or device with camera and internet** to work with the Respondus Lockdown Browser in D2L. The only device that has a known issue is a Chromebook.
  2. **Textbook & Homework:** Use this link to purchase online access to the book and homework. <https://students.flatworldknowledge.com/course/2600670> This material is required. You have options to download or purchase a hard copy version of the book. I recommend trying the online book first. I found it easy to chat with customer support inside my FlatWorld account or visit <https://support.flatworldknowledge.com/en/articles/5268516-customer-support-hours>
  3. **Scientific calculator** with log and scientific notation. For the final exam, programmable graphing calculators are not allowed. Here is a calculator I like from Walmart for just around \$10: <https://www.walmart.com/ip/Texas-Instruments-TI-30XA-Student-Scientific-Calculator/1043441?athbdg=L1103&from=searchResults>
  4. **Safety Glasses or Goggles:** These can purchased at many retail locations including our bookstore. <https://www.walmart.com/ip/Hyper-Tough-Clear-Safety-Glasses-with-Z87-1-Poly-Carbonate-Lens-Fit-Over-HTS-690460/558336181?athbdg=L1200&from=search>
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### Grades

*Grade Calculation:* The total number of assignments may vary, but the grade percentage of each category remains fixed. Student progress will be reported in the D2L gradebook.

Activities	10% (5% Lab + 5% Lecture)
Learning Objective Quizzes	40%
Exams	30%
Laboratory Experiments	<u>20%</u>
Total:	100%

#### *Grading Scale*

- A:  $\geq 90\%$   
B:  $\geq 80\%$   
C:  $\geq 70\%$   
D:  $\geq 60\%$   
F: Below 60%

Course Requirements: It is crucial to fulfill all mandatory assignments to ensure successful completion of the course and avoid negative outcomes, such as course failure, incomplete grades, or removal as per the first-day drop policy.

1. **Mandatory Attendance Activities**
2. **Learning Objective Time Quizzes:** Completion of the Learning Objective Time Quizzes is required, as skipping them may lead to receiving an incomplete (I) or failing (F) grade.
3. **In-Class Midterm and Final Exams:** Taking both the in-class Midterm and Final Exam is compulsory. Failure to participate in these exams may result in an incomplete (I) grade or an F grade.

## CHEM 1151K Learning Process:

*Learn (Lecture, Activities, Homework) -> Test your learning & review as needed (Practice Quiz) -> Demonstrate Mastery (LO Quizzes) -> Retain for your future (midterm and final).*

### 1. The Activities:

- **Mandatory Attendance Activities:** Ensure you complete the attendance activities, which can be accessed under Content → Start Here. One of these activities involves attending the first day of class which is the first day drop policy.
- **Collaborative in-class and in-lab assignments:** Working together during class we will complete activities. Due at the end of the class they are assigned, these assignments prioritize the development of problem-solving skills and critical thinking.

### 2. The Learning Objective Quizzes:

- **Time Quiz:** Your first attempt at the Time Quiz will take place in class on the date specified in the D2L calendar. In case you don't achieve mastery on the initial try, a retake opportunity will be provided. A detailed key will be made available in D2L after the quiz, offering insights into areas that require improvement. Recognizing your strengths and growth areas is essential for excelling in chemistry. Please note that these quizzes are timed to ensure prompt completion.
- **Retake Quizzes:** You have two additional attempts to pass a retake quiz during or after class. These quizzes have a specific deadline in D2L, after which they will no longer be accessible, making the date a firm deadline.

Please be aware that the use of the Respondus Lockdown Browser during class is required for these quizzes. Students must bring a device to class that is compatible.

### 3. The Exams:

- **Mid-term Exam:** The mid-term exam will be administered in class and is a timed assessment. To aid in preparation, a study guide and practice midterm will be available in the Midterm Exam folder on D2L. These resources are designed to assist students in reviewing the material and gaining familiarity with the exam format.
- **Final Exam:** The comprehensive final exam will be conducted in class, covering all Learning Objectives. This assessment is a standardized exam from the American Chemical Society. Students will find a study guide and practice final exam in the Final Exam folder on D2L, providing valuable tools for effective exam preparation and ensuring a thorough understanding of the course material.

Practice quizzes, homework and exams are provided to help you adequately prepare for timed assessments. While these practices are essential for learning and skill-building, they will not count toward your final grade. The practice quiz becomes available only after achieving a grade of 80% on the homework. This approach encourages learning during the homework stage without any penalty, allowing you to test your knowledge through practice quizzes. By doing so, you can identify areas for improvement and achieve full mastery during the quizzes. Also, a detailed key will be released only after the Time Quiz has been attempted.

## Laboratory

This is a K course that consists of both lecture and laboratory component. The topics covered in the lecture will be directly applied in the lab sessions and vice versa. The primary focus of laboratory is to cultivate a strong understanding of safe laboratory practices and provide students with hands-on laboratory experiences related to key concepts in chemistry covered in the lecture component, including physical properties, moles, and solutions. The laboratory portion places significant emphasis on thorough analysis and interpretation of data and results.

**Laboratory Learning Objectives:** By the end of this course, students are expected to:

1. Safely perform basic scientific experiments in the laboratory setting.
2. Demonstrate meticulous and comprehensive recording, analysis, and interpretation of experimental data.
3. Apply and further develop the concepts introduced in the lecture component through practical laboratory work.

**Lab Report Format:** There are two distinct parts associated with the lab report grade:

1. Part one will be submitted through D2L. This part will include answers to the Prelab Assignment and questions related to different sections of the lab, such as the introduction, methods, data, and result analysis. The deadline for the Prelab Assignment is 15 minutes prior to the start of the lab (subject to change). These components typically account for 60% of your lab grade.
2. The second major part of your lab report is the Data and Results section, which you will complete on paper and turn in the day of the lab. The Data and Results sheet counts as 40% of your lab grade.

**Lab Safety:** For specific issues regarding lab safety, please refer to the "Safety First" chapter in your lab manual. It is crucial to come to the lab prepared and on time as a matter of safety. Your laboratory instructor has the authority to dismiss any student who is deemed unprepared for the lab. In such cases, the student will receive a zero for the lab and will not be given the opportunity to make it up.

Additional lab safety measures to keep in mind:

1. Ensure your legs and feet are properly covered while working in the lab.
2. Face shields must be always worn during lab sessions.
3. Eating, drinking, smoking, snorting, or dipping is strictly prohibited in the lab. All food and beverages, including closed containers, should be left outside the lab.
4. Sitting on the lab bench is not allowed as it is an unsafe practice.
5. Using electronic devices for non-academic purposes during lab sessions is prohibited and considered disrespectful.
6. Weapons, whether legal or otherwise, are strictly prohibited in the lab.
7. It is mandatory to wash your hands at the conclusion of each wet lab.

**UNG Chemical Hygiene Plan:** UNG (University of North Georgia) has implemented a Chemical Hygiene Plan (CHP) to ensure the safety of faculty, staff, and students while working in UNG laboratories. The CHP includes Standard Operating Procedures (SOPs) and guidelines for safe handling and storage of hazardous chemicals. These measures are in place to protect the well-being of everyone involved. For more detailed information on the UNG Chemical Hygiene Plan, including standard laboratory safe handling and storage requirements, please refer to the following document: [UNG Chemical Hygiene Plan](#)

**Course Calendar:** Also check the D2L calendar for deadlines & holidays.

Course previews in D2L	Friday, August 18 @ 11:59PM
First day of class (visit D2L)	Monday, August 21
Mandatory Attendance Activities	Wednesday, August 23 @ 11:59PM
First quiz due:	Monday, August 28 @ 11:59PM
<b>August 30</b>	<b>Meet President Shannon – cookout at noon</b>
Labor Day	Monday, September 4
Midterm exam	October 11 in class
Midpoint Grade in D2L	October 13
Course withdrawal deadline	October 13, 3PM
Thanksgiving Break	Friday, Nov 17 (no class) to Friday Nov 24
Final exam	Monday, December 11, 10:20PM – 12:30PM

### **Late Submission Policy**

Requests for late submissions after the deadline will be considered under specific circumstances. Generally, only those due to excused absences will be accommodated. Excused absences encompass a range of situations beyond the student's control, including:

- Illness
- Serious emergencies
- Special curricular requirements (e.g., field trips, professional conferences)
- Military obligations
- Inclement weather conditions
- Religious holidays
- Court-imposed legal obligations
- Approved accommodations
- Medically necessary absences due to pregnancy or childbirth
- The unfortunate event of a death in the immediate family
- Participation in official university-sponsored activities

#### **Deadline Considerations:**

- We will use the D2L calendar and the schedule in the D2L course Nav Bar for assignment due dates. Please check it every day.
- Requests for late submissions for LO1 to LO9 and Lab 1-3, will be considered until **October 13, 2023, 3:00 PM.**
- After the midpoint grade is issued on **October 13, 2023, 3:00 PM**, late submissions for LO1 to LO9 and Lab 1-3 will not be accepted.

#### **Lecture Component:**

- Active participation in course activities is crucial for effective learning in chemistry. Makeup options are unavailable for missed lecture assignments (such as activity worksheets), leading to a forfeiture of points for these activities, which directly relate to your attendance and participation.
- With specifications grading, you possess the flexibility to choose which quizzes you wish to retake. First attempts must be completed on the specified dates on the D2L course schedule. Retakes are permitted with two additional attempts until the firm retake deadline where the retake quiz goes unavailable. After this deadline, retake requests will be considered only for excused absences, which must be supported by documentation.
- Retakes are not offered for the midterm and final exam.

**Laboratory Component:** Laboratory experiments involve complex setup procedures, making

makeup arrangements challenging. To address this, the lab schedule has been thoughtfully designed to incorporate two designated make-up days. These days are reserved for students with excused absences, supported by appropriate documentation. You must email your instructor about your intention to attend the make-up lab, so the material can be setup.

I value your commitment to your education and understand that unforeseen circumstances can arise. It is important to communicate and provide documentation to ensure fair consideration of late submissions.

**Class Evaluations:** Class evaluations at UNG are conducted online through Banner. Evaluation of a class is considered an essential component of the course, so a student will not be permitted to access their course grade until the evaluation has been completed. The evaluations will be accessible beginning one week prior to Final Exam week.

**Supplemental Syllabus:** For further information about UNG policy about Academic Exchange, Academic Integrity Policy, Academic Success Plan Program, Class Evaluations, Course Grades, and Withdrawal Process, Disruptive Behavior Policy, Inclement Weather, Smoking Policy, COVID-19, and Students with Disabilities please refer to the UNG supplemental syllabus:

<http://ung.edu/academic-affairs/policies-and-guidelines/supplemental-syllabus.php>

**Academic Dishonesty:** As members of the academic community, all students are expected to recognize and uphold standards of intellectual and academic integrity.

#### **What Comprises Academic Dishonesty?**

- **Plagiarism** - ALWAYS cite your sources. Plagiarism is using other people's writing or ideas without giving credit. This includes paraphrasing material without citing the source and submission of assignments completed by someone else.
- **Cheating on Exams** - Utilize only authorized materials during proctored exams. Additionally, sharing information with other students before or after an exam is also considered cheating.
- **Unauthorized Collaboration** - Work individually on assignments unless your professor approves group work.
- **Falsification** - It is a violation of academic honesty to misrepresent material or fabricate information in an academic exercise, assignment, or proceeding.
- **Unauthorized Use or Distribution of Copyrighted Material** - Unauthorized distribution of copyrighted material occurs when a student utilizes, reproduces, or distributes copyrighted material without written permission by the copyright owner. The unauthorized use or distribution of this course material is expressly prohibited. This includes sharing any information about this course with websites or any other third party. *Additionally, copying or buying copyrighted course materials is prohibited.*
- **"Tutoring" Services** - If a "tutoring" service provides solutions to course assignments, this is considered cheating. Legitimate tutoring services will never directly give answers to course assignments.

Violation of the Academic Honesty Policy can result in failure of the assignment, failure of the course, and/or dismissal from your institution. Ignorance of this policy is not an excuse or a means to repeal a charge of academic dishonesty.

**Accommodations for Students with Disabilities:** The University of North Georgia is committed to equal access to its programs, services, and activities and welcomes otherwise qualified students with disabilities. Students who require accommodations and services must register with Disability Services and submit supporting documentation. Disability Services provides accommodation memos for eligible students to give to their instructors. Students are responsible for making arrangements with instructors and must provide reasonable prior notice of the need for accommodation. For the Dahlonega campus, please see: Norma Smith, Stewart Center, Academic Advisement Center 235, Phone: 706-867-2857.

If you need this document in an alternate format for accessibility purposes (e.g., Braille, large print, audio, etc.), please contact [Ashley.Garrett@ung.edu](mailto:Ashley.Garrett@ung.edu) or call 706-864-1505.