

CHEM 108 – General Chemistry Lab Recitation

Section 002

Spring 2023

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Office Hours: Mon. & Wed. 10:00-11:30, Thur. 1:30-3:00

Lecture/Recitation: Fridays 12:30-1:20 in Sims 113B

Course Credit Hours: 2 credit hour for lab and recitation

Required Materials:

- Textbook: *Chemistry Atoms First 2nd Edition*. You can access this textbook free online at [OpenStax](#).
- A **laboratory notebook that has carbonless, duplicate pages** and a pair of **chemical splash goggles** are required for lab
- Scientific calculator (You may **not** use your phone or tablet as a calculator.)

COVID-19 Statement:

The health and safety of the campus community is Winthrop's top priority. As socially responsible members of this community, everyone is expected to engage in daily health self-monitoring and to stay home (residence hall or off-campus housing) from on-campus class, work, or activities if they begin experiencing any COVID-related symptoms. Please do not attend class if you have a fever or any signs of the COVID virus, do not attend class if your roommate or someone you have close contact with acquires the virus, and be respectful of others' desire to remain COVID-free. Masking on campus remains optional but strongly encouraged, especially in indoor settings around others. Use the Patient Portal COVID-19 form to report illness or exposure and upload the positive test, if relevant. Students who violate WU guidelines will be asked to comply. Continued failure to comply may result in referral to the Dean of Students Office as a student conduct violation.

COVID-Related Absence

Students should contact Health Services regarding a positive test, close contact, or enhanced COVID-like symptoms. Any student who has either tested positive, has COVID-like symptoms, or has close contact with someone who has COVID, must contact Health Services. Students should log in to the [Patient Portal](#) to complete a C19 form and upload the positive test, if relevant. Health Services will communicate with the student on what steps to take next, and if need be, the Dean of Students Office will receive absence verification for required isolation and quarantine. Students who verify their absences through the Dean of Students Office often minimize any academic impact caused by missed class time. Students retain a responsibility to communicate with instructors regarding missed work, and complete assignments in a timely manner as they are able. Regular communication with faculty is expected so that student progress in the course is not negatively impacted. Health Services will only provide dates of absence, not medical information. Please note, residential students who test positive must follow their personal COVID Quarantine and Isolation Plan.

Course Goals:

- In this lab recitation course, we will review the necessary information needed to successfully complete each of the experiments scheduled in CHEM 108. Many of the laboratory skills learned in CHEM 108 will be used in upper level chemistry labs.
- Develop problem-solving and critical thinking skills.
- Demonstrate an understanding of the fundamental principles presented in each of the laboratory experiments conducted in CHEM 108.

Course Outline:

- Physical properties, analytical balances, typical glassware, volumetric glassware, data analysis, graphing using Excel
- Qualitative solubility, stoichiometry, volumetric glassware, burets, pH meters, writing chemical equations
- Calorimetry, heats of reactions, endothermic/exothermic reactions, writing chemical equations, Excel
- Introduction to organic chemistry, identifying an unknown, functional group testing, infrared spectroscopy,
- NMR
- Visible spectroscopy, Beer's Law, calibration curves, graphing with Excel

Exams and Grading:

1. There will be two recitation exams, each worth 60 points. **No make-up exams will be given.** Tentative exam dates are noted below.
2. Recitation Exam 2 will be a cumulative exam given during the last week of classes. There is no recitation exam during final-exam week; instead, there is a Final Skills Exam in the lab, scheduled for 3:00 Wednesday, April 26.
3. Your final grade in lab recitation will be factored into your final CHEM 108 grade. Recitation will account for about 20% of your final course grade. See the CHEM 108 Grading page for letter grade assignments.
4. You have one week from the time a graded assignment is returned to question its grading. After a week, I will not change any grade.
5. You should carefully read the Winthrop University Student Conduct Code printed in the Winthrop University Student Handbook. As noted in the Student Conduct Code: "Responsibility for good conduct rests with students as adult individuals." This policy on student academic misconduct is outlined in the "Student Conduct Code Academic Misconduct Policy" in the online Student Handbook (<http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf>)<http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf>

Total Possible Points

Recitation Exams	120 pts (20%)
<u>Laboratory Grade</u>	<u>480 pts (80%)</u>
Total points Chem 108	600 pts

Exams: You will need a scientific calculator for exams. Cell phones and other personal electronic devices are strictly prohibited during exams. You cannot use a cell phone as a calculator during exams.

Course Withdrawal: Tuesday, March 21, is the last day to withdraw from a full-semester course with an automatic N grade issued. Students may not withdraw from a course after this date without documented extenuating circumstances, as determined by the University.

Communication: I'm always happy to answer questions! I have listed specific office hours above, but you're welcome to come by any time. You can also see me before or after class or e-mail me to make an appointment to meet.

Attendance: You are expected to attend all class meetings and are responsible for all announcements made in class, even if you are absent or arrive late.

Homework: You are expected to complete all reading assignments and all assigned homework problems. End-of-chapter homework problems from the textbook will not be collected or graded, but will provide important preparation for lab work and for recitation exams.

E-mail and Blackboard: It is important to check your Winthrop e-mail regularly, and to keep up with course announcements, etc., in Blackboard.

Students with Disabilities: Winthrop University is committed to providing access to education. If you have a condition which may adversely impact your ability to access academics and/or campus life, and you require specific accommodations to complete this course, please contact the Office of Accessibility (OA) at 803-323-3290 or accessibility@winthrop.edu. Please inform me as soon as possible after you receive your official notice of accommodations from OA, so that we may implement accommodations promptly.

Syllabus: Corrections and updates to this syllabus will be made as necessary, with notification provided.

Recitation Schedule

Note: This schedule is tentative and may be modified as needed. You will be informed of any changes.

Date (Fri.)	Exams	Prelab Topics	Reading Assignments and Homework Problems (End of Chapter Exercises; answers provided)
1/13		No Recitation Meeting	Note: You may want to review material and complete the Safety/Webpage Quiz this week (Due by 2 pm Monday, 1/23)
1/20		Quantitative and Qualitative Analysis, Density, Units of Measurement, Making Measurements: Precision, Accuracy, Experimental Error, Standard Deviation, Significant Figures	Chemistry Atoms First OpenStax ~Read Chapter 1 ~Complete the following problems: <ul style="list-style-type: none">• End of Chapter Exercises 55, 81, 87, 89• A sample of an unknown metal was placed in a graduated cylinder containing water. The mass of the sample was 23.5 g and the water level rose from 47.5 ml to 52.2 ml. Calculate the density of this unknown metal.
1/27		Ions, Ionic compounds, Precipitation reactions, Solubility rules, Qualitative analysis	Chemistry Atoms First OpenStax ~ Ions, Ionic Compounds: Read Section 3.7 ~Reactions: Read Section 7.2, Precipitation Reactions ~Complete the following problems: <ul style="list-style-type: none">• Section 7.2 Example Problem 7.3• End of Chapter Exercises: 11
2/3, 2/10		Writing chemical equations for precipitation reactions (complete balanced equations, complete ionic equations, and net ionic equations), Acid/Base reactions, Molarity, Dilutions, Using burets, Using pH meters Stoichiometry	Chemistry Atoms First OpenStax ~ Molarity: Read Section 6.3; Complete End of Chapter Problem 22 ~Acids and Bases: Read Section 7.2 ~Reaction Stoichiometry: Read Section 7.3; including Examples 7.10 and 7.11, 7.13 and End of Chapter Exercises 7.50, 7.63, 7.64

2/17 2/24 3/3		Calorimetry, Heats of Reactions Precipitation Reactions, Acid/Base Reactions, Oxidation-Reduction Reactions	<i>Chemistry Atoms First</i> <u>OpenStax</u> ~ Calorimetry: Read Section 9.2 including examples 9.5 and 9.6; Complete End of Chapter Problem 24, 25, 26.
3/10	Exam 1		
3/17	No Class	Spring Break	
3/24		Organic Nomenclature and Functional Groups NMR and IR	
3/31 4/7		Analysis of Cola	
4/14		Review	
4/21	Exam 2		