

# CHEM 108 – General Chemistry Lab Recitation Syllabus

## Section 004

Spring 2023

**Instructor:** Dr. Dammann

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**Office:** Sims 115

**Office Hours:** Monday 3:00 pm - 5:00 pm, or by appointment

**Lecture:** Monday 2:00 pm - 2:50 pm, Sims 105

**Course Credit Hours:** 2 credit hours for lab and recitation

**Course Pre-requisite:** You must successfully complete CHEM 105.

### Required:

Textbook: ***Chemistry: An Atoms-Focused Approach*** by Gilbert, Kirss and Foster, 3<sup>rd</sup> edition

(A copy of the textbook has been placed on reserve at the Reference Desk in The Winthrop Dacus Library.)

### 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, dimensional analysis
- Calorimetry, heats of reactions, endothermic/exothermic reactions, writing balanced chemical equations
- Introduction to organic chemistry, identifying an unknown, functional group testing, infrared spectroscopy, NMR
- Visible spectroscopy, Beer's Law, calibration curves, graphing with Excel

### 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.

## Exams and Grading:

1. There will be two exams each worth 60 points. **No make-up exams will be given**. Tentative exam dates are noted below.
2. Your final grade in lab recitation will be factored into your final CHEM 108 grade. Recitation will account for about 20% of your final lab grade. See the CHEM 108 GRADING webpage for letter grade assignments.
3. There will not be a final exam during final exam time in CHEM 108 recitation. There will be a cumulative exam (Exam 2) for recitation during the last week of classes.
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 in CHEM 108: 600 pts

Recitation Exams: 120 pts (20%)

Laboratory grade: 480 pts (80%)

**Grades:** I will not discuss grades through e-mail. If you have a question about your grade, please stop by my office.

**Exams:** You will need a calculator for exams. Cell phones and pagers are strictly prohibited during exams. You cannot use a cell phone as a calculator during exams. Bring your calculator to recitation each week.

**Course Withdrawal:** Tuesday, March 21<sup>st</sup> is the last day to withdraw from a full spring 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:** If you have any questions, please stop by and see me during office hours. If these hours are not convenient, see me in class or e-mail me to set up an appointment.

**Attendance:** You are expected to attend all class meetings. You are responsible for all announcements and lecture material covered in class. Absence or lateness does not excuse you from this responsibility.

**Homework:** You are expected to complete each reading assignment and all assigned homework problems. End of chapter homework problems from the textbook will not be collected or graded, but will be good practice for preparing for exams.

**E-mail:** It is important to check your e-mail regularly. If you registered for the course late, you will need to manually subscribe to the listserv. If you drop the course, you will need to unsubscribe to the list or you will continue to receive all e-mails I send. You can find directions at <http://www.winthrop.edu/acc/classlist.htm>

**Syllabus:** **Mistakes to this syllabus will be corrected as necessary.**

**Blackboard:** Some course materials, such as online quizzes and prelab assignments, can be accessed on Blackboard.

**Students with Disabilities/Need of Accommodations for Access:** **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, contact the Office of Accessibility (OA) at 803-323-3290, or, [accessibility@winthrop.edu](mailto:accessibility@winthrop.edu), as early as possible to discuss your concerns.**

This is a tentative schedule and will be modified as needed.

Date	Exams	Prelab Topics	Reading Assignments and Homework Problems (End of Chapter Exercises)
1/9 1/23		Quantitative and Qualitative Analysis, Density, Units of Measurement, Making Measurements: Precision, Accuracy, Experimental Error, Standard Deviation, Significant Figures	<p><b>Chemistry: An Atoms-Focused Approach:</b>            ~Read Section 1-4, Density; Sections 1-8 and 1-9            ~Complete the following problems:</p> <ul style="list-style-type: none"> <li>• End of Chapter Problems 40, 44, 48, 54, 60, 69, 71</li> <li>• End of Chapter Problems 16, 30, 32, 59 (do not calculate %error, calculate standard deviation), 61, 64</li> </ul> <p>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.</p> <p><b>Blackboard assignments:</b>            ~Watch 2 sig figs videos (access in BB Videos)            ~Quiz 1a (access in BB Quizzes)  <b>In-class assignment:</b> Quiz 1b</p>
1/16		No Class- Martin Luther King Day	
1/30		Ions, Ionic compounds, Precipitation reactions, Solubility rules, Qualitative analysis	<p><b>Chemistry: An Atoms-Focused Approach:</b>            ~ Ions, Ionic Compounds: Read pages 43, 50-53, 139-142            ~Reactions: Read Section 8.5 including Sample Exercise 8.6. Complete Practice Exercise on page 328 and End of Chapter Problems 8.65, 8.66  <b>In-class assignment:</b> Quiz 2</p>
2/6, 2/13		Writing balanced 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	<p><b>Chemistry: An Atoms-Focused Approach:</b>            ~ Molarity: Read Section 8.1 (312-315); Complete End of Chapter Problems 8.11a; 8.14a,b;15a,b            ~Acids and Bases: Read Section 8.4 (320-326) including Sample Exercise on page 324; Complete End of Chapter Problems 8.51b, 8.53b            ~Reaction Stoichiometry: Read Section 8.5, (326-330); Read Section 8.5 including Sample Exercise 8.7 and 8.8, complete Practice Exercises on page 330 and 331 and End of Chapter Problems 8.68, 8.69, 9.72  <b>In-class assignments:</b> Quiz 3a, Quiz 3b</p>
2/20, 2/27		Calorimetry, Heats of Reactions  Precipitation Reactions, Acid/Base Reactions, Oxidation-Reduction Reactions  Review for Recitation Exam 1	<p><b>Chemistry: An Atoms-Focused Approach:</b>            ~ Calorimetry: Read Section 9.5, (382-384) including sample Exercise (384); Complete Practice Exercise on page 384 and End of Chapter Problems 9.65, 9.66            ~Precipitation Reactions: Read Section 8.5            ~ Acids and Bases: Read Section 8.4            ~Oxidation-Reduction Reactions: Read Section 8.6, (332-338); Complete End of Chapter Problems 8.83, 8.89  <b>Blackboard assignments:</b> Quiz 4a, Quiz 4b, Quiz 4c (access in BB Quizzes)</p>
3/6	<b>Exam 1</b>	Be sure to bring your <b>Calculator</b> to Sims 105	

3/13	<b>No Class</b>	Spring Break	
3/20, 3/27		Organic Nomenclature, Functional Groups, NMR and IR Spectroscopy	<b>In-class assignment:</b> Quiz 5a <b>Blackboard assignment:</b> Quiz 5b (access in BB Quizzes)
4/3, 4/10, 4/17		Analysis of Cola, Visible Spectrometry, Beer's Law, Calibration Curve, Dilution Calculations  Review for Exam 2 and Skills Exam	<b>In-class assignment:</b> Quiz 6a <b>Blackboard assignments:</b> ~Read Spectrophotometry and Beer's Law pdf (access in BB Content) ~Quiz 6b (access in BB Quizzes)
<b>4/24</b>	<b>EXAM 2</b>	Be sure to bring your <b>Calculator</b> to Sims 105	