CHEM 204 – General Chemistry Lab Recitation

Section 005

Spring 2024

Instructor:	**Mrs. Kristen Kull**
Lab Meeting Time:	Thursday 2:00-4:50 pm Sims 103
Prelab:	Thursday 2:00 Sims 105
Recitation:	Monday 5:00 – 5:50 pm Zoom (reference Blackboard for updates)
Course Credit Hours:	2
E-mail:	kullk@winthrop.edu
Office:	Sims 107B
Office Hours:	Virtual BB Mon 6:00-7:00 pm, Tues 11:00-1:30, Thurs 5:00-6:00 pm Physical Sims 103/107B Thurs 5:00-6:00 pm Times are subject to change to align with student preferences OR By appointment; send request via BB email with phone number and 3 dates/times available to meet; messages sent via WU email are not guaranteed a response

Course Pre-requisite(s): You must successfully complete CHEM 105, CHEM 201 or CHEM 211.

Required Books:

- Textbook: **Chemistry: An Atoms-Focused Approach** by Gilbert, Kirss and Foster, 3rd edition. The library has a copy of this textbook on reserve at the Textbook Reserve Desk.
- *Lab Notebook: Carbonless, dual page (spiral bound preferred)*

Course Goals:

- In this lab recitation course, we will review the necessary information needed to successfully complete each of the experiments scheduled in CHEM 204. Many of the laboratory skills learned in CHEM 204 will be used in upper-level chemistry labs.
- Develop problem-solving and critical thinking skills.
- Show an understanding of the fundamental principles presented in each laboratory experiment conducted in CHEM 204.

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 exams in recitation, Exam 1 and Exam 2. **No make-up exams will be given**. If you miss an exam with a validated excuse, your other exam grade will be scaled. Tentative exam dates are noted below.
2. **The recitation exam 2 will be cumulative and will be given during the last week of classes. The class will also meet during finals time to complete the skills exam, a culmination of techniques utilized in the laboratory.**
3. Your total grade in lab recitation will be factored into your final CHEM 204 grade. Recitation will account for 20% of your final lab grade. See the CHEM 204 GRADING webpage 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 (**https://www.winthrop.edu/uploadedFiles/studentconduct/StudentConductCode.pdf) in the online *Student Handbook* https://www.winthrop.edu/studentconduct/winthrop-university-student-handbook.aspx

Total Possible Points

Recitation Exams	120 pts (20%)
Laboratory grade	480 pts (80%)
Total points Chem 204	600 pts

Preparation for the lesson: Resource material for the lab comes from the Cooperative Project instructions found on Blackboard or on the Chem204 web page AND the associated lab instruction from the course Lab Manual. Your Lab Notebook is a duplicate page resource. **It will be available for your reference on any graded assignment.** I strongly recommend taking all of your recitation notes in this. Calculations for assignments should also be completed here. If buying or using a used Notebook, show it to me for signature and page recording.

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.

Course Withdraw: Tuesday, March 19th 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: If you have any questions, please contact me and/or see me during office hours. If these hours are not convenient, see me in class or e-mail me to set up an appointment. Due to increased message traffic in my kullk@winthrop.edu account, communication will come through the Blackboard e-mail system. I will send messages and provide updates via the Announcements, Discussion Boards, and Bb e-mail system. You are responsible for checking these at least once a day. This manner of operation ensures a record of our communication. Make sure Bb origin messages are not blocked in your Winthrop account.

Homework: Each reading assignment and assigned homework problem will give you background instruction for the techniques and calculations used in the Cooperative Project. End of chapter homework problems from the textbook will not be collected or graded but will be good practice for preparing for exams. They may be used as a template for quiz and test questions.

E-mail: It is important to check your e-mail (Blackboard and WU) regularly. If you registered for the course late, you will need to manually subscribe to the listserv, the class master enrollment list for messages. If you drop the course, you must unsubscribe to the list or continue to receive all e-mails I send. You can find directions at http://www.winthrop.edu/acc/classlist.htm

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. Please inform me as early as possible once you have your official notice of accommodation from the Office of Accessibility.

Attendance: You are expected to attend all class meetings, virtual or in person. You are responsible for all announcements made in class. Absence or lateness does not excuse you from this responsibility. If you know there is an approved activity for class absence, you must coordinate prior with me to arrange attendance in another section. If the absence is unplanned, and I receive authorized documentation from the Dean of Students, or a medical doctor or their representative, you will be allowed to proceed with activities at a maximum of 80% credit. You **will always** be responsible for your group data and analysis as used in additional course evaluation.

COVID-19 Statement:
Although COVID-19 has reached an endemic phase it is still important to remain vigilant as we face a recent rise in positive cases. As socially responsible members of this community, everyone is expected to engage in daily health self-monitoring, to stay home (residence hall or off-campus housing) from on-campus class, work, or activities if they begin experiencing any COVID-related symptoms.
When experiencing any COVID-related symptoms, students are expected to contact Health Services by completing the QI form in the Patient Portal and respond to the nurse who will contact them with instructions. COVID positive residential students are required to follow their QI plan for 5 days of isolation off campus so be prepared with a back-up plan as well.
By acknowledgement, you agree to Winthrop's expectations of you regarding health monitoring and reporting. For documented COVID cases, **Attendance policy**, as stated above, will be handled on a case by case basis.
Syllabus: This is a tentative schedule. Modifications and mistake correction will be announced and made as necessary.

Date	Exams	Prelab Topics	Reading Assignments and Homework Problems (End of Chapter Exercises)
1/8, 1/22		Lab, Recitation Introduction Quantitative and Qualitative Analysis, Density, Units of Measurement, Making Measurements: Precision, Accuracy, Experimental Error, Standard Deviation, Significant Figures	**Chemistry: An Atoms-Focused Approach:** ~Read Section 1-4, Density; Sections 1-8 and 1-9 ~Complete the following problems: • End of Chapter Problems 40, 44, 48, 54, 60, 69, 71 • End of Chapter Problems 16, 30, 32, 59 (instead of calculating percent error, calculate the standard deviation), 61, 64 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.
			Chemistry: An Atoms-Focused Approach: ~ 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
1/15	**No Class**		
1/29		Ions, Ionic compounds, Precipitation reactions, Solubility rules, Qualitative analysis	***Chemistry: An Atoms-Focused Approach:*** ~ 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
2/5, 2/12		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: An Atoms-Focused Approach:*** ~ 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
2/19, 2/26		Calorimetry, Heats of Reactions Precipitation Reactions, Acid/Base Reactions, Oxidation-Reduction Reactions	
3/4	**EXAM 1**		
3/11-15	**no class**	**Spring Break**	
3/18, 3/25		Organic Nomenclature and Functional Groups NMR and IR	
4/1, 4/8		Analysis of Cola	
4/15		CPIV Oral Presentation guidelines	
4/22	**EXAM 2**		