Course Syllabus Spring 2017
Chemistry 218: Principles of Chemistry Lab II

(CRN:5473 – CHM 218 – Section 231)
Department of Chemistry, Marshall University

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Office Hours: By appointment
Credit Hours: 2.00 hours
Course Time and Location: Tuesday, 2:00-4:50, TPB 740 Room #3122

University Policies: By enrolling in this course, you agree to the University Policies. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to www.marshall.edu/academic-affairs/policies/.

Purpose of Course:

1. To introduce you to the basic laboratory skills of careful measurements and handling of experimental data.
2. To provide laboratory experience which emphasizes and reinforces the principles and concepts of chemistry introduced in your CHM 212 course.
3. To acquaint you with the quantitative thinking and procedures encountered in elementary physical chemistry and analytical chemistry with emphasis on the interplay between theory and experiment.

The table below shows how each student learning outcome will be practiced and assessed in this course:

Student Learning Outcome	How students will practice each outcome in this course	How achievement of each outcome will be assessed
Students will learn and follow safety rules in the lab.	-Safety training at MUOnline -reading lab manual	-online safety course -midterm/final exams
Students will learn to properly use and care for lab equipment.	-reading lab manual -prelab lecture -lab experiments	-lab reports -quizzes/exams
Students will learn how to record and communicate procedures and findings.	-reading lab manual -prelab lecture -lab experiments	-lab notebooks -lab reports
Students will apply concepts introduced in CHM 212	-quizzes -homework	-pre/post lab questions -midterm/final exams

Materials Needed:

1. Laboratory manual available at MU Bookstore.
2. A bound (sewn, not a spiral bound or taped notebook) laboratory notebook. All experimental data must be recorded directly in this notebook during your laboratory period. This need not be a specialized "laboratory" notebook, only a sewn composition book.
3. Black or blue ink pens and a ruler.
4. Safety goggles. Full-coverage goggles are required. Contact lenses should not be worn in the chemistry laboratory. If contact lenses are absolutely necessary, a good set of safety goggles must be worn at all times while in the laboratory. If you wear contact lenses, you must notify your instructor.
5. An apron, or other covering for your clothes, is optional, but desirable.
6. The ACS academic lab safety guide is needed. This is available to download at http://portal.acs.org/portal/PublicWebSite/about/governance/committees/chemicalsafety/publications/WPCP_012294
7. Access to a textbook in order to read about experimental concepts.
8. A simple calculator. Those with alphanumeric and/or graphing capabilities are **not permitted** during quizzes or exams.

Conduct of Course:

1. Attendance is required in this course and tardiness will not be tolerated. Failure to complete greater than 75% of the laboratory experiments will automatically result in a grade of "F," regardless of the reason for the absences.
2. At the beginning of each lab period (first 10-15 minutes), expect to take a short quiz pertaining to the day's laboratory experiment. If you're late, you will not be allowed to take the quiz.
3. The bound notebook is for the *immediate* recording of all experiment operations and observations made during the laboratory period and will be checked periodically throughout the semester.
4. Lab reports are due at the beginning of the period following completion of the experiment.
5. Prelab questions are to be completed *before* coming to lab and not during pre-lab lecture. Completion of these questions will be inspected each lab period.
6. Students must complete the departmental safety training and safety quiz before the second lab period. At that time, the form should be turned into your instructor.
7. Plagiarism is a University offense. You must write your own laboratory report and not submit the same report as your partner. Doing so will result in a grade of "zero."
8. Makeup lab work must be completed in the current week only unless other arrangements have been made prior to an excused absence.

Safety Measures:

1. Anyone who has not signed the statement acknowledging one's full understanding of the required safety measures will not be permitted to work in the laboratory.
2. Use care in following the directions of your instructor and laboratory text. Do not carry out any unauthorized experiments.
3. Know the location of all safety equipment in the laboratory. You will be quizzed on this.
4. All injuries, no matter how trivial, must be reported to the instructor immediately.
5. Safety goggles **must** be worn at all times in the laboratory. Since the department does not have the proper facilities to sterilize safety goggles between uses, we are prohibited from loaning safety goggles to students. It is your responsibility to have your goggles in the laboratory. If you do not have your goggles, you will not be permitted to perform the experiment. We strongly urge you not to wear contact lenses. If contract lenses must be worn, a Contact Lens Waver Form must be signed and given to the instructor.
6. Attire: Shoes must cover the feet entirely; no sandals, flip-flops, etc. Legs must be completely covered. Shirts that show the mid-drift and sleeveless shirts are prohibited. Students not dressed properly for lab will be sent home.
7. The effects on human gestation of all of the chemicals used in the laboratory have not been determined. It may be advisable for pregnant students to avoid prenatal exposure by postponing this laboratory to a later date.

Important Dates:

1/10 First Lab (Come prepared)	3/17 Last day to drop individual courses
1/16 Holiday	3/20-25 Spring Break
2/27 Midterm grades due	4/25 Final Exam

Grading:

The grade in this lab will be based on a wide variety of evaluation tools including exams, quizzes, laboratory experiment results and reports, homework assignments, notebooks, and evaluation by the instructor. The weight for each component is as follows:

Quizzes (lowest score dropped)	20%
Midterm exam (approx. 1 hour in length)	20%
Final exam (approx. 1 hour in length)	20%
Post-lab report and experimental results (Drop the lowest)	25%
Instructor evaluation	5%
Notebook	5%
Pre-lab Questions	5%

The letter grades will then be assigned based on the average computed using the above weights. You may estimate your letter grade using the following scale:

Grading Scale: A > 90%, **B** 80 to 89%, **C** 70 to 79%, **D** 60 to 69%, and **F** < 60%.

Date	Experiment #	Topic	Reports Due
1/10	1	Introduction to Graphing	1/17
1/17	4	Protein Extraction	1/24
1/24	2	Beer's Law	1/31
1/31	8	Kinetics of the Decomposition of H_2O_2	2/7
2/7	5	Determination of Water Hardness	2/14
2/14	10	Studying Le Chatelier's Principle	2/21
2/21	**Midterm Exam**		
2/28	7	Bonding and Acidity	3/7
3/7	6	Qualitative Analysis	3/14
3/14	9	pH Dependence of Drug Absorption	3/28
3/21	**Spring Break**		
3/28	11/12	Qualitative Analysis/Isolation of Copper	4/11
4/4	11/12	Qualitative Analysis/Isolation of Copper	4/11
4/11	13	Gibbs Free Energy	4/18
4/18	14	Synthesis of a Coordination Compound	4/25
4/25	**Final Exam**		