

Course Title/Number	Principles of Chemistry Laboratory II/CHM 218 Sections 101 & 102
Semester/Year	Fall 2018
Days/Time	Tuesday 5:30-8:20 PM
Location	473 Science Hall (pre-lab lecture), 474/476 (laboratory)
Instructor	Dr. Bin Wang
Office	241L Byrd Biotechnology Science Center
Phone	(304) 696-3456
E-Mail	wangb@marshall.edu
Office Hours	Wednesday 2:00-3:30 PM (BBSC 241L) and Thursday 2:00-3:30 PM (S 460)
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to http://www.marshall.edu/academic-affairs/policies/ Academic Dishonesty/Academic Dismissal/Academic Forgiveness/ Academic Probation and Suspension/Affirmative Action/Dead Week/ D/F Repeat Rule/Excused Absences/Inclement Weather/Sexual Harassment/Students with Disabilities/University Computing Services' Acceptable Use

Course Description:

A laboratory course that demonstrates the application of concepts introduced in CHM 212.
2 credit hours. Corequisite or prerequisite: CHM 212

Required Texts, Additional Reading, and Other Materials:

1. CHM 218 Lab Manual
2. access to MUOnLine and a Marshall email account
3. composition notebook (*not spiral-bound*) and blue/black ink pen
4. non-programmable calculator
5. indirectly vented chemical safety goggles
6. roll of paper towels for cleanup
7. combination lock for lab drawer (optional)

Student Learning Outcomes	How students will practice each outcome in this course	How each outcome will be assessed in this course
Students will know and follow safety rules in the chemical laboratory.	<ul style="list-style-type: none"> • safety training at MUOnLine • reading laboratory manual 	<ul style="list-style-type: none"> • online safety quiz • midterm and final exams • instructor's evaluation
Students will learn how to properly use and care for laboratory equipment.	<ul style="list-style-type: none"> • reading laboratory manual • prelab lecture • laboratory experiments 	<ul style="list-style-type: none"> • lab reports • instructor's evaluation
Students will learn how to record and communicate laboratory experiments and results.	<ul style="list-style-type: none"> • reading laboratory manual • prelab lecture • laboratory experiments 	<ul style="list-style-type: none"> • lab notebook • lab reports

Students will apply concepts introduced in chemistry lecture (CHM 212).	<ul style="list-style-type: none"> • reading laboratory manual • laboratory experiments • laboratory calculations 	<ul style="list-style-type: none"> • pre- and post-lab questions • lab reports • midterm and final exams
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Grading Policies:

lab reports (including post-lab questions)	55	points
quizzes (5 during the semester)	10	points
midterm exam	13	points
final exam	15	points
lab notebook & pre-lab questions	5	points
instructor's evaluation of student performance	2	points
	100	TOTAL POINTS

Grading Scale: A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: < 60

Attendance Policy:

Attendance is required to complete and receive credit for experiments. The Department of Chemistry policy requires that students complete at least 75% of laboratories to receive course credit. Students will receive a grade of "F" for missing 4 or more laboratories, whether the absences are excused or unexcused. Students with excused absences must contact the instructor as soon as they are permitted to return to campus in order to schedule a make-up lab. Do not wait until the following week's lab to make arrangements. If you anticipate missing a lab, notify the instructor as soon as possible. It may be possible to make *prior arrangements* to complete the lab in the same week with a different section and instructor. *Permission from Dr. Wang and the alternate instructor is required.* If class is cancelled unexpectedly, scheduled assignments will be due and scheduled exam will be given during the next class meeting.

Lab Safety:

The safety rules for the laboratory are outlined in your lab manual. Safety training must be completed at MUOnline prior to the given deadline or the student will be denied admission to the lab. Proper clothing is of the utmost importance. This means that legs should be covered down past the knees (pants are best) and the entire torso should be covered. Shoes must completely cover feet, including the tops of the feet. (No ballet flats or sandals.) If your attire is unsafe, you must change before entering the lab. Any reckless disregard for safety (horseplay, frequent/willful lapses in wearing of goggles, etc.) may result in dismissal from the lab and failure of the course. Cell phones and similar electronic devices should not be used while in the lab except as calculators and timing devices. Misuse of electronics may result in dismissal from lab for the day and a failing grade for the experiment. The ACS academic lab safety guide is available to download at <http://www.acs.org/content/dam/acsorg/about/governance/committees/chemicalsafety/publications/safety-in-academic-chemistry-laboratories-students.pdf>

Miscellaneous Policies:

Please silence cell phone ringers during class or exams. Use of cell phones/PDAs/MP3 players and similar devices during exams will be considered academic dishonesty. Class announcements may occasionally be made via email to your university email address. Please check it on a regular basis. Lecture slides will be posted at MUOnline.

Tentative Schedule:

	Pre-lab Lectures	Lab Activities
Week 1 8/20–8/24	Syllabus Exp. 1	Lab Check-In Introduction to Graphing
Week 2 8/27–8/31	Exp. 2	Absorption Spectroscopy
Week 3 9/3–9/7	Exp. 3 Quiz 1	Beer's Law
Week 4 9/10–9/14	Exp. 8	Kinetics
Week 5 9/17–9/21	Exp. 4 Quiz 2	Protein Extraction and Folding
Week 6 9/24–9/28	Exp. 10	Le Châtelier's Principle
Week 7 10/1–10/5	Midterm Exam	
Week 8 10/8–10/12	Exp. 7	Bonding and Acidity
Week 9 10/15–10/19	Exp. 6 Quiz 3	Quantitative Analysis–Titration
Week 10 10/22–10/26	Exp. 9	pH Dependence of Drug Absorption
<i>10/26 is the last day to drop a full semester individual course</i>		
Week 11 10/29–11/2	Exp. 11/12 Quiz 4	Qualitative Analysis and Isolation of Copper Metal
Week 12 11/5–11/9	Exp. 11/12	Qualitative Analysis and Isolation of Copper Metal
Week 13 11/12–11/16	Exp. 13 Quiz 5	Gibbs Free Energy
Week 14 11/19–11/23	<i>Thanksgiving Break</i>	
Week 15 11/26–11/30	Exp. 14 Review	Synthesis of a Coordination Compound Lab Check-Out
Week 16 12/3–12/7	Final Exam	