

Course Title/Number	<b>Principles of Chemistry Laboratory II / CHM 218 Sections 205 &amp; 206</b>
Semester/Year	Spring 2017
Days/Time	8:00-10:50 PM Thursday
Location	473 Science Hall (pre-lab lecture), 474/476 (laboratory)
Instructor	Dr. Laura McCunn-Jordan ***PLEASE CALL ME DR. MCCUNN
Office	466 Science Hall; research lab: 404 Science Hall
Phone	(304) 696-2319
E-Mail	<a href="mailto:mccunn@marshall.edu">mccunn@marshall.edu</a>
Office Hours	Mon. and Fri. 9:30-11:30, Wed. 9:30-10:30 in room 466; other times by appointment. I welcome drop-in visits, but cannot guarantee availability outside of office hours. Simple questions can be answered via email. On Mondays at 2:00-3:00 in the Chemistry Library (room 460), I hold an office hour open to any student in CHM 211 or 212.
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 <a href="http://www.marshall.edu/academic-affairs">www.marshall.edu/academic-affairs</a> and clicking on "Marshall University Policies." Or, you can access the policies directly by going to <a href="http://www.marshall.edu/academic-affairs/?page_id=802">http://www.marshall.edu/academic-affairs/?page_id=802</a> Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment

### Course Description

A laboratory course that demonstrates the application of concepts introduced in Chemistry 212. 2.00 credits (CR or PR: CHM 212)

### Required Texts, Additional Reading, and Other Materials

1. CHM 218 Lab Manual
2. access to MU Online and a Marshall email account
3. composition notebook with sewn binding (*not spiral-bound*) and blue/black ink pen
4. indirectly vented chemical safety goggles
5. combination lock for lab drawer
6. roll of paper towels for cleanup
7. non-programmable calculator for tests and exams (it must not have keys for the alphabet)
8. ACS academic lab safety guide (for reference only)  
<http://www.acs.org/content/dam/acsorg/about/governance/committees/chemicalsafety/publications/safety-in-academic-chemistry-laboratories-students.pdf>

<b>Student Learning Outcomes</b>	<b>How students will practice each outcome in this course</b>	<b>How each outcome will be assessed in this course</b>
Students will know and follow safety rules in the chemical laboratory.	<ul style="list-style-type: none"> <li>• safety training at MU Online</li> <li>• reading laboratory manual</li> </ul>	<ul style="list-style-type: none"> <li>• online safety quiz</li> <li>• midterm and final exams</li> <li>• instructor's evaluation</li> </ul>
Students will learn how to properly use and care for laboratory equipment.	<ul style="list-style-type: none"> <li>• reading laboratory manual</li> <li>• prelab lecture</li> <li>• laboratory experiments</li> </ul>	<ul style="list-style-type: none"> <li>• midterm and final exams</li> <li>• instructor's evaluation</li> </ul>
Students will learn how to record and communicate laboratory experiments and results.	<ul style="list-style-type: none"> <li>• reading laboratory manual</li> <li>• prelab lecture</li> <li>• laboratory experiments</li> </ul>	<ul style="list-style-type: none"> <li>• lab notebook</li> <li>• lab reports</li> </ul>
Students will apply concepts introduced in chemistry lecture (CHM 212).	<ul style="list-style-type: none"> <li>• reading laboratory manual</li> <li>• laboratory experiments</li> <li>• laboratory calculations</li> </ul>	<ul style="list-style-type: none"> <li>• pre- and postlab questions</li> <li>• lab reports</li> <li>• midterm and final exams</li> </ul>

### **Grading Policy**

lab notebook	125	points
prelab quizzes*	55	points
lab reports (including postlab questions)*	540	points
checkout (end of semester)	5	points
midterm exam	100	points
final exam	150	points
instructor's evaluation of student performance**	25	points
	<b>1000</b>	<b>TOTAL POINTS</b>

\*Each student's lowest lab report grade and lowest quiz grade of the semester will be dropped, as described in the Attendance Policy. Lab reports are due during prelab lecture. Each student is permitted to submit one late lab report during the semester, but it must be received by 6:00 PM on the due date. The late report can be submitted to Dr. McCunn's office or via email.

\*\*The instructor's evaluation of student performance will be based on observation of safety rules and proper maintenance of laboratory facilities. Students may lose these points for offenses such as, but not limited to: tardiness, improper waste disposal, safety violations, leaving a mess on the balances, failure to return/store lab equipment before leaving lab.

**Grading Scale**     A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: 0-59%

The percentage of total points earned will be rounded to the nearest whole percentage. If you believe there has been an error in the grading of your work, please consult Dr. McCunn.

### **Attendance Policy**

Attendance is required to complete and receive credit for experiments. The Department of Chemistry policy requires that all students complete at least 75% of laboratories. A student will not receive course credit if he/she misses 4 or more laboratories, whether they are excused or unexcused absences. 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. McCunn and the alternate instructor is required.* If class is cancelled unexpectedly, scheduled assignments will be due and scheduled tests will be given during the next class meeting.

Each student's lowest quiz grade and lowest experiment grade will be dropped from their overall grade. For this reason, students with unexcused absences will not be allowed to make up the missed work at a later time. More than one unexcused absence will adversely affect a student's grade.

### **Lab Safety**

The safety rules for the laboratory are outlined in your lab manual. Safety training must be completed at MU Online prior to the given deadline or the student will be denied admission to the lab. Proper clothing is of the utmost importance. Clothing must cover the entire torso and legs down past the knees (pants are best). Shoes must completely cover feet, including the top of the foot. (No ballet flats or sandals.) If your attire is unsafe, points may be deducted from your grade and 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, MP3 players and similar electronic devices should not be used while in the lab. Students who are tardy and miss safety briefings in prelab lecture may be denied entry to lab that day.

### **Intellectual Property Policy**

Students may not share any course materials written by Dr. McCunn in a public forum without her written permission. For example, students may not post online any lecture slides, notes, answer keys, or tests written by Dr. McCunn without her permission. Students may not sell their lecture notes to study services if those notes contain material originally written by Dr. McCunn or any otherwise copyrighted material.

## Miscellaneous Policies

Use of cell phones / PDAs / MP3 players and similar devices during tests and exams will be considered as cheating. The only materials permitted during a test are a non-programmable calculator, pen/pencil, and those provided by the instructor. Class announcements may occasionally be made via email to your university email address. Please check it on a regular basis. Supplemental course materials and assignment due dates will be posted at MU Online.

## Course Schedule

Date	Experiment #	Topic
1/12	1	Check-in and Introduction to graphing
1/19	4	Protein extraction
1/26	2	Beer's Law
2/2	8	Kinetics
2/9	5	Water Hardness
2/16	10	Le Châtelier's principle
2/23	Midterm Exam	
3/2	7	Bonding and acidity
3/9	6	Titration
3/16	9	pH dependence
	3/18 is last day to drop an individual course	
3/23	SPRING BREAK	
3/30	11/12	Qualitative Analysis and Isolation of Cu
4/6	11/12	Qualitative Analysis and Isolation of Cu
4/13	13	Free Energy
4/20	14	Synthesis of a coordination compound
4/27	Final Exam / Lab check-out	