

Course Title/Number	Principles of Chemistry I Laboratory / CHM 217 (Sections 111 & 112)
Semester/Year	Fall / 2018
Days/Time	R / 2:00pm – 4:50pm
Location	473 Science Building (prelab); 474/476 Science Building (lab)
Instructor	John Rakus, Ph.D
E-Mail	rakus@marshall.edu
Class Website	http://www.marshall.edu/muonline/
Teaching Assistants	Tempany Arbogast (arbogast29@marshall.edu) Justin Grant (grant74@marshall.edu) Bethany Koontz (koontz30@marshall.edu) Kristen Mullins (mullins374@marshall.edu) Carleigh Napier (napier194@marshall.edu)
Office	478 Science Building (lab: 480 Science Building)
Phone	304-696-6627
Office Hours	MTW: 12:00pm – 2:00pm and RF: 12:30pm – 1:30pm
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 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/ . 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: From Catalog

A laboratory course that demonstrates the application of concepts introduced in Chemistry 211. 2.0 credit hours. (CR or PR: CHM 211)

Required Texts, Additional Reading, and Other Materials

Text: Principles of Chemistry I Laboratory Manual, Van-Griner.

Additional: Scientific calculator (non-graphing). Bound notebook. Lab goggles. Pen.

Course student learning outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
Develop proper laboratory safety behavior.	-Lecture -Lab manual -Online safety course -Laboratory experiments	-Exams -Online safety course -Conduct assessment
Students will learn correct use and maintenance for laboratory equipment.	-Lecture -Lab manual -Laboratory experiments	-Exams -Lab reports -Conduct assessment
Correctly record and communicate experimental procedures, findings and interpretations.	-Lecture -Lab manual -Laboratory experiments -Lab notebooks	-Experiments -Exams -Lab reports -Notebook evaluations
Application of concepts introduced in CHM 211.	-Lecture -Lab experiments	-Experiments -Exams -Lab reports -Notebook evaluations

Attendance and Missed Lab Policy

Attendance is a necessity. If you miss a lab for a University-excused reason, please contact me as soon as possible to arrange a makeup of that week's experiment. In general, if you have an excused absence and do not wish to drop that experiment, you will have three options to select from:

1. You may make the lab up in another CHM 217 class with permission from both myself **and** the instructor of that section. If you select this option, any graded assignments from that lab will still be due with your regular section.
2. You may arrange with me to make up the lab at a point at the end of the semester.
3. You may choose to not make up the experiment and keep a drop. If you do this, the 600 points of lab report assignment for your total grade (see below) will be calculated from 11 reports instead of 12.

If you miss a lab for an unexcused reason, you may not make it up during a different section or on a different date. Assignments that were due on the date of an unexcused absence will not be accepted. It is departmental policy that missing more than 25% of the assigned labs will result in an automatic F for this course.

Conduct Policy

I hold my students to the same expectations about conduct and behavior while in class that I have for myself. It is my responsibility to you to provide the best learning environment of which I am capable and, in return, I believe everyone in this classroom deserves the right to be treated with dignity and respect. I encourage questions, interaction and curiosity but I also implore you to consider your classmates' interests in class.

This is a chemistry lab class and, although we will adhere to proper safety protocol, your behavior in lab is your responsibility. You are expected to be punctual and properly attired in the lab which includes: refraining from loose/baggy clothing, wearing closed-toe shoes at all times, minimizing exposed skin on arms and legs, tying back long hair, removing loose jewelry and wearing proper lab goggles.

Misbehavior includes running/jumping and general horseplay. You are expected to utilize common sense at all times and request advice from the instructor or TA in the event of confusion. You must also complete all assignments yourself; plagiarism and freeloading will not be accepted.

Technology Policy

Cell phones, tablets and other digital devices are not allowed to be accessed while in the laboratory. They may be used during pre-lab lecture if they are set to silent and are not disruptive to the class. If there is a long period of inactivity during an experiment, you may quietly use your devices in the hallway if they do not disrupt other classes. Devices are expressly forbidden during examinations and their use will be considered a violation of the Academic Integrity Policy.

Course Requirements/Due Dates

September 6, 2018 – Lab Report Experiment 1	September 13, 2018 – Lab Report Experiment 2	September 20, 2018 – Lab Report Experiment 3
September 27, 2018 – Lab Report Experiment 4	October 4, 2018 – Lab Report Experiment 5 October 4, 2018 – Midterm Exam	October 11, 2018 – Lab Report Experiment 6
October 18, 2018 – Lab Report Experiment 7	October 25, 2018 – Lab Report Experiment 9	November 1, 2018 – Lab Report Experiment 10
November 8, 2018 – Lab Report Experiment 11	November 15, 2018 – Lab Report Experiment 12	November 29, 2018 – Lab Report Experiment 13
	December 6, 2018 – Lab Report Experiment 8 December 6, 2018 – Final Exam	

Grading Policy

Value	Category	Grade Scale
600 points –	sum of 12 best lab reports (lowest dropped)	A: 895-1000
100 points –	midterm exam (October 4)	B: 795-894
100 points –	final exam (December 6)	C: 695-794
75 points –	sum of 3 notebook evaluations	D: 595-694
50 points –	prelab quizzes	F: 0-594
50 points –	lab conduct	
25 points –	lab safety quiz	
1000 points – total		

Description of Graded Assignments

Lab Safety Quiz:	The quiz is available on the course's Blackboard page. It must be completed prior to 2:00pm on Thursday, August 30, 2018. Students will not be allowed to participate in lab until the safety quiz is completed and passed.
Prelab Quizzes:	Starting on September 13, 2018, you will be assigned a short quiz at the beginning of each class for a total of 12 quizzes during the semester. Quizzes will be distributed promptly at 2:00pm and collected at 2:10pm. Each quiz will be graded on a scale of 0, 1, 3 or 5 points and you can collect up to 50 cumulative points from quizzes towards your overall class grade.
Lab Reports:	We will conduct 13 experiments this semester. One week after each experiment, you will be required to submit a report on the outcome of that experiment. The reports will be graded on a scale of 0-50 points with the lowest graded report being dropped. For further details on format and expectations of these reports, please review the information available on the course's Blackboard page.
Midterm and Final Exam:	There will be one-hour exams on October 4, 2018 (<u>before lab</u>) and December 6, 2018. Exams will include multiple-choice, short-answer and problem-solving questions. Exam content could be derived from experiments, experiment background, safe lab practices, proper operation of laboratory equipment and other topics relevant to class. Exams will not include content covered in CHM 211 but not CHM 217. The final exam is not comprehensive.
Notebook Evaluations:	Your notebook will be evaluated at random three times by teaching assistants (TAs) this semester beginning on September 13, 2018. The entry for the previous week's assignment will be evaluated (<i>i.e.</i> , if you are selected for evaluation on September 13, you will be graded based on your September 6 entry). Each notebook evaluation is worth a total of 25 points. For further details on the format and expectations for your lab notebook, please review the information available on the course's Blackboard page.
Lab Conduct:	Your behavior in lab will be under constant evaluation. Your conduct grade begins with 50 points and you will be deducted points for any violation which could include, but not be limited to: improper attire, tardiness, unsafe lab practices, egregious lab behavior <i>etc.</i>

Schedule of Experiments

Week	Class Date	Lab #	Experiment	Report Due	Other
1	August 23, 2018	1	Lab Check-in; Methods of Measurement		
2	August 30, 2018	1, cont.	Determination of Sugar in Soft Drinks and Graphing with Excel		Aug 27: W period begins
3	September 6, 2018	2	Separating Components of a Heterogeneous Mixture	Experiment 1	
4	September 13, 2018	3	Determination of the Percent Oxygen in Air	Experiment 2	
5	September 20, 2018	4	Determination of an Empirical Formula	Experiment 3	
6	September 27, 2018	5	Determination of Avogadro's Number	Experiment 4	
7	October 4, 2018	6	Synthesis of an Alum	Experiment 5	Midterm Exam
8	October 11, 2018	7	Reactions	Experiment 6	
9	October 18, 2018	9	Heat of Reaction and Heat of Solution	Experiment 7	
10	October 25, 2018	10	The Titration of Vinegar	Experiment 9	Oct 26: W period ends
11	November 1, 2018	11	Combustion! – Synthesis and Reactions of Oxygen	Experiment 10	
12	November 8, 2018	12	Energy in a Peanut: Calorimetry	Experiment 11	
13	November 15, 2018	13	Molecular Architecture	Experiment 12	
14	November 22, 2018	NO CLASS: Thanksgiving Break			
15	November 29, 2018	8	Determination of Molar Mass	Experiment 13	
16	December 6, 2018	DEAD WEEK		Experiment 8	Final Exam
Finals	December 13, 2018	NO CLASS			