



Marshall University Syllabus
College of Science
Chemistry

Course

CHM 217: Principles of Chemistry Lab I

Course Description

An undergraduate laboratory course that demonstrates the application of concepts introduced in CHM 211
2 hours Credits

Prerequisites

CR or PR: CHM 211

Term/Year

Fall 2018

Class Meeting Days/Times

Wednesday, 3:30 to 6:15 PM

Location

South Charleston Campus, TPB 740 Room #3122

Academic Calendar

For beginning, ending, and add/drop dates, see the [Marshall University Academic Calendar](http://www.marshall.edu/academic-calendar/) (URL: <http://www.marshall.edu/academic-calendar/>).

Instructor

Dr. Manjira Kumar (PhD)

Contact Information

- Office: #3202 TPB (WVRTP)

- Office Hours: by appointment
- Office Phone: 304-720-4001 ext. 3611
- Marshall Email: ghoshkumar@marshall.edu

Required and/or Recommended Texts and Materials

Required Texts and Materials

1. Laboratory manual available at MU Bookstore.
2. A bound composition book (sewn; not a spiral bound or taped notebook). All experimental data must be recorded directly in this notebook during the laboratory period.
3. Black or blue ink pens.
4. Safety goggles. Full-coverage goggles are required and must be worn at all times while in the laboratory. Use of contact lenses is highly discouraged. Please inform the instructor if you plan to wear contact lenses, as you will need to sign a waiver.
5. (Optional) An apron, or other covering for your clothes.
6. The ACS academic lab safety guide. This is available to download at:
https://www.acs.org/content/dam/acsorg/about/governance/committees/chemicalsafety/publications/safety-in-academic-chemistry-laboratories-students.pdf?_ga=2.86932824.1516164305.1514648080-18257841.1514648080
7. Access to a textbook in order to read about experimental concepts.
8. A simple, nonprogrammable calculator. Those with alphanumeric and/or graphing capabilities are not permitted during quizzes or exams.

Course Student Learning Outcomes

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 211 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 211	-quizzes -homework	-pre/post lab questions -midterm/final exams

Course Requirements/Due Dates

First day of classes: August 20, **Labor Day Holiday:** Sept 3, **Freshman/Sophomore Midterm grades due:** Oct 8, **Last Day to Drop:** Oct 26 **Thanksgiving:** Nov 19 – 23, **Dead Week:** Dec 3 – 7, **Last day of class:** Nov 26, **Final grades due:** Dec 17

The final exam will be given to all CHM 217 students on **Wednesday Dec 5th (3:30 to 4:30 PM)**

Grading Policy

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 (1-7)	7X10 = 70 points
Midterm exam (approx. 1 hour in length)	100 points
Final exam (approx. 1 hour in length)	100 points
Lab reports (1-13)	130 points
Total	400 points

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

Attendance/Participation Policy

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. (I would not grant permission to write the lab report unless you physically performed the experiment)
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.
For the due dates, please see the table provided below. I prefer neatly printed hard copies, however, if you must submit an electronic copy, I will deduct 10% off the top. Furthermore, late submissions are accepted for a penalty of 10% for each day the report is late.
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 beginning of the second lab period. At that time, the associated 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. You need to show proper documentation for absences before make-up labs.
9. A make-up exam for either the mid-term exam or the final exam will only be given if a university excused absence has been established.

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 when following the instructions outlined in your laboratory text. Modifications to the procedures are only permissible if they've been expressly cleared/directed by the instructor.
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. You are strongly urged not to wear contact lenses. If contract lenses must be worn, a Contact Lens Waiver 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/or shoulders as well as sleeveless shirts are prohibited. Students not dressed properly for lab will be sent home.
7. The effects on human gestation of all 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.

University Policies

By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to [MU Academic Affairs: University Policies](http://www.marshall.edu/academic-affairs/policies/). (URL: <http://www.marshall.edu/academic-affairs/policies/>)

- Academic Dishonesty Policy
- Academic Dismissal Policy
- Academic Forgiveness Policy
- Academic Probation and Suspension Policy
- Affirmative Action Policy
- Dead Week Policy
- D/F Repeat Rule
- Excused Absence Policy for Undergraduates
- Inclement Weather Policy
- Sexual Harassment Policy
- Students with Disabilities (Policies and Procedures)
- University Computing Services Acceptable Use Policy

Course Schedule

Week	Experiment No.	Topics:
08/22	1 Part 1	Lab check-in & Density of Water
08/29	1 Part 2	Density of Solutions
09/05	2	Separating Mixture Components (LR1)
09/12	3	Determination of the Percent Oxygen in Air (LR2)
09/19	4	Determination of an Empirical Formula (LR3)
09/26	5	Determination of Avogadro's Number (LR4)
10/03	6 / Midterm Exam	Synthesis of an Alum (LR6)
10/10	7	Reactions (LR7)
10/17	9	Heat of Reaction and Heat of Solution (LR8)
10/24	10	Titration of Vinegar (LR9)
10/31	11	Combustion – Synthesis and Reactions of Oxygen (LR10)

11/07	12	Energy of a Peanut: Calorimetry (LR11)
11/14	13	Molecular Architecture (LR12)
11/21	Thanksgiving	
11/28	8	Determination of Molar Mass (LR13)
12/05	Final Exam	

- *Instructor reserves the right to change the syllabus if needed for the fulfillment of the course objective and outcome*
- *Use of cell phone is not allowed during class lecture and lab*