

CHEMISTRY 212 - LABORATORY SCHEDULE
Spring 2015

TEXT/MATERIALS: Laboratory worksheets and POGIL handouts are available on the Blackboard website. Lab manual: *CHEM 212*, Fountainhead Press (2014); ISBN 978-1-59871-9239.

REQUIRED EYE PROTECTION: Students must wear the approved goggles issued by the department *at all times in the laboratory—NO EXCEPTIONS.*

Week of:	EXPERIMENT
1. Jan. 12 th	CHECK-IN / SAFETY ORIENTATION : Safety in the Laboratory; Glassware & Equipment/Data Representation and Recording
2. Jan. 19 th	MARTIN LUTHER KING DAY (Holiday – no lab meetings for the week.)
3. Jan. 26 th	Separation and Recovery of Components in a Ternary Mixture
4. Feb. 2 nd	Determining the Empirical Formula of Magnesium Oxide
5. Feb. 9 th	Stoichiometry - A Mole Ratio Study
6. Feb. 16 th	Classifying Chemical Reactions
7. Feb. 23 rd	Redox Chemistry - Activity of Metals
8. March 2 nd	LAB MIDTERM EXAM
9. March 9 th	SPRING BREAK
10. March 16 th	Determination of the Universal Gas Constant, R
11. March 23 rd	Calorimetry and Hess's Law
12. March 30 th	The Bohr Model and Spectroscopy of the Hydrogen Atom
13. Apr. 6 th	Periodic Properties of Some Elements
14. Apr. 13 th	Lewis Structures and Molecular Shape / CHECK OUT
15. Apr. 20 th	LAB FINAL EXAM

***FAILURE TO CHECK OUT MAY RESULT IN A FAILING GRADE FOR THE ENTIRE SEMESTER.**

Grading: The overall lab grade is a weighted average, and is calculated using the formula below:

$$(\text{Lab average} \times 0.70) + (\text{Midterm Exam} \times 0.15) + (\text{Final Exam} \times 0.15) = \text{lab grade}$$

Letter grades are assigned based on the overall lab grade compared to the following cutoffs:

$$90\% = \text{A}; \quad 80\% = \text{B}; \quad 70\% = \text{C}; \quad 60\% = \text{D}; \quad <60\% = \text{F}$$

LABORATORY DIRECTIONS AND COURSE OBJECTIVES

* **Attendance at all lab exercises, including check-in, is mandatory. If you have a legitimate reason for missing a lab, contact your lab TA as soon as possible to make arrangements to make up any missed work.**

1. **APPROVED EYE PROTECTION IS REQUIRED IN THE LABORATORY AT ALL TIMES BY ILLINOIS LAW.** Shorts, skirts, and open-toe shoes or shoes without socks are *not* permitted (i.e., no bare skin below the waist). Shirts covering the entire torso and having sleeves are also required. Students *will not be permitted* in the laboratory without eye protection and proper clothing in place.
2. If you are injured in *any* way during the laboratory, immediately report it to your lab instructor.
3. The laboratory is to be conducted in a quiet and orderly manner.
4. Do your laboratory work and your report independently unless otherwise instructed. Laboratory questions should be directed to your laboratory instructor.
5. Use only designated chemicals. Read labels and follow directions carefully. Do *not* do unauthorized experiments.
6. (a) **USE AS LITTLE REAGENT AS NEEDED TO PERFORM YOUR EXPERIMENT.**
(b) Avoid contamination of the reagents! Never return unused chemicals to the stock bottles, as this may cause other students' experiments to suffer.
(c) The reagent bottles should not be carried to your bench. Use clean test tubes or beakers for carrying liquids. Use beakers, watch glasses, or small squares of paper for carrying solids.
(d) Pour the reagent solutions into your own containers, in order to avoid contamination of the stock solutions. Do not insert your own pipettes or medicine droppers into the reagent bottles.
(e) Hold bottle stoppers in your hand to avoid picking up any impurities from the bench and thus contaminating the solution when the stopper is put back on the bottle.
(f) Replace stopper or cap tightly to avoid evaporation or spillage.
7. Clean up and properly dispose of all spills—liquids or solids—***immediately***. This is especially important in and around the balances. Some corrosive chemicals may permanently damage equipment or laboratory fixtures.
8. Throw all chemicals to be discarded into the waste containers and record them on the waste inventory sheet. Wastepaper belongs in the wastebaskets. Broken glass should ***only*** be discarded in the glass containers.
9. At the close of each laboratory period, leave your glassware clean and dry. Wash and wipe off the bench top.
10. If you withdraw from the course before the end of the semester you must still check out of the laboratory, or your withdrawal cannot be completed. At the end of the semester, failure to check out during the assigned time may result in a ***failing grade*** for the lab.

Course Objectives

On completion of this course, students are expected:

1. To have learned how to write chemical formulas, name compounds, perform chemical calculations, make observations and record the data from those observations appropriately.
2. To be familiar with the chemical and physical properties of gases, liquids, solids, and aqueous solutions.
3. To have learned how to work safely in a chemistry laboratory.
4. To have learned how to manipulate scientific equipment and to carry out laboratory experiments.

Course Grades

Laboratory grades will be determined using a weighted average as follows:

Lab grade = (avg. on lab exercises x 0.70) + (lab midterm exam x 0.15) + (lab final exam x 0.15). Final grades will be assigned based on location of weighted average in the following distribution:

A = 90%

B = 80%

C = 70%

D = 60%

F < 60%

ACADEMIC POLICIES

1. Academic Integrity. Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are responsible for plagiarism, intentional or not, if they copy material from books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university.

A faculty member has original jurisdiction over any instances of academic misconduct that occur in a course which the faculty member is teaching. The student shall be given the opportunity to resolve the matter in meetings with the faculty member and the department chair. If the facts of the incident are not disputed by the student, the faculty member may elect to resolve the matter at that level by levying a sanction no greater than an F for that course. The faculty member shall notify the student in writing whenever such action is taken, and the Office of Community Standards and Student Conduct shall receive a copy of the Academic Misconduct Incident Report indicating final disposition of the case, which will be placed in the student's judicial file. In all matters where the charge of academic misconduct is disputed by the student or if the faculty member feels a sanction greater than an F in the course is appropriate (such as repeated offenses or flagrant violations), the faculty member shall refer the matter to the Office of Community Standards and Student Conduct making use of the Academic Misconduct Incident Report. Additional sanctions greater than an F in a course can be levied only through the University Judicial System. With regards to finding the student either responsible or not responsible for his or her action, the ruling of the Judicial Hearing Board shall be binding. In cases where there is either a finding of responsibility or an admission of responsibility by the student, any recommendations by the hearing board regarding course grades are non-binding on the instructor, who retains sole responsibility for assigning grades, consistent with policies set forth in the syllabus.

2. Attendance. Details regarding the departmental attendance policies are included in the lab manual. If a student will be absent from classes for a week or more because of an accident, illness, or other emergency, instructors will be notified of the absence only if students or their parents request it through the Division of Student Affairs. Health Services will not release information about students unless they provide a written request. Leaves of absence will be granted for volunteer services related to disaster relief in accordance with applicable Illinois statutes or executive orders issued by the State of Illinois in response to emergency situations. To initiate a leave of absence, students should contact their College Dean's office, or the vice provost (or the vice provost's delegate) for any student who has no college affiliation. Following the period of volunteer service, Registration and Records will facilitate reenrollment of the student.

In the case of an absence due to required attendance at a university-sponsored event such as a department trip, performing arts activity, ROTC function, or athletic competition, reasonable attempts shall be made by faculty members to allow the student to make up missed work. Students are responsible for completing the work assigned and/or due on the days they are absent for university-sponsored events. Both the sponsoring unit and the student should inform the faculty member as soon as possible in the semester in order for arrangements to be made for completing missed assignments, examinations or other required course work. The student is required to provide the instructor with an official notification in advance of an absence (e.g., a letter from the chair of the sponsoring department, the head of the sponsoring unit, or the coach).

3. Accommodations for Students with Disabilities. A student who believes that reasonable accommodations with respect to course work or other academic requirements may be appropriate in consideration of a disability must (1) provide the required verification of the disability to the Disabilities Resource Center, (2) meet with the Disabilities Resource Center to determine appropriate accommodations, and (3) inform the faculty in charge of the academic activity of the need for accommodation. Students are encouraged to inform the faculty of their requests for accommodations as early as possible in the semester, but must make the requests in a timely enough manner for accommodations to be appropriately considered and reviewed by the university. If contacted by the faculty member, the staff of the Disabilities Resource Center will provide advice about accommodations that may be indicated in the particular case. Students who make requests for reasonable accommodations are expected to follow the policies and procedures of the Disabilities Resource Center in this process, including but not limited to the Student Handbook. A wide range of services can be obtained by students with disabilities, including housing, transportation, adaptation of printed materials, and advocacy with faculty and staff. Students with disabilities who need such services or want more information should contact the Disabilities Resource Center (815-753-1303).