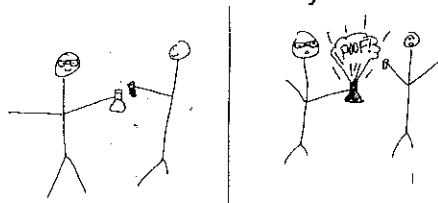


Chem 112- 1, 2, 3 Syllabus Summer 2011
General Chemistry Laboratory B Loyola University Chicago



Instructor of Record: Ms Angela E. Boerger
Office Hours: Tu and Th 11:30 – 12:15 and by appointment
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Put Chem 112 , your section #, and your TA's name in the subject

Welcome to Chem 112. We are looking forward to working with you this semester.

Closed toe and closed heel shoes are required anytime you are in the laboratory for any reason. If you are not wearing proper shoes, you will not be allowed to enter the laboratory or participate in and earn points for the work that is done during that class period. (Crocs type shoes with holes in them are unacceptable.)

Participation is mandatory. You are not allowed to make up a quiz or a lab in another section of Chemistry 112. Missing 2 of the labs, which is over 20% of the lab work, is significant and unacceptable and will result in academic failure, as will missing 1 or both of the Practical Quizzes. Please look at the schedule at the end of this syllabus and consider the negative impact that missing one of the hands on laboratory sessions will have on your educational experience, including your performance on the Practical Quizzes. It is in your best interests to register for a section that does not conflict with other obligations. Students should not enroll in a lab section that they cannot fully attend.

Students who do not have a C- or better in the prerequisite class, General Chemistry Laboratory A (Chem 111), and students who are not concurrently enrolled in or have not completed General Chemistry 102 or 106 with a grade of C- or better will be removed from the class.

Failure to adhere to any lab safety rules can result in expulsion from the lab session and or course with no opportunity for make-ups.

A one point penalty will be assessed for any written work which is not done in non-erasable pen, or if white out is used. 2 points will be deducted from the notebook score for every week that a proper laboratory notebook is not brought to class.

Laboratory work in this second semester of general chemistry lab will be divided into two parts.

- 1) For the qualitative analysis portion, you will prepare and use a formal scientific notebook and write a formal lab report on your unknowns for each group covered. This section will include a qualitative analysis practical. The Qualitative Analysis Practical will be an unknown potentially containing ions from all groups covered. **You may use the lab manual, your formal scientific notebook, and pre-lab lectures from Chem 112 on the Qualitative Analysis Practical.** After each qual group lab, on Blackboard you will take quizzes. The due date for the Qual Homework quizzes is Monday noon of the week following each Qual group.
- 2) The remaining labs cover various topics, and will be followed by a practical quiz. In part, a laboratory practical quiz requires a student to demonstrate knowledge and skills by performing tasks in the laboratory. In this way, a student's ability to use equipment properly and demonstrate correct technique can be evaluated. A practical lab quiz will also cover basic understanding of the fundamental models of chemistry illustrated in the laboratory experiments. Questions of this kind will ask you to analyze data similar to laboratory experiments you performed. **You may use your own graded data sheets, lab manual, syllabus, pre-lab lectures and tutorials from Chem 112 on the Practical Quiz.**

Safety points will be awarded on the basis of safe conduct in the lab. A safe lab environment is essential, and unsafe actions will definitely result in grade degradation. The following is a partial list of ways you can lose safety points:

- Coming late to class, after the pre-lab lecture has started
- Not bringing goggles to lab
- Not wearing your goggles consistently in lab
- Not keeping your equipment drawer locked and/or in good condition
- Not adhering to Disposal Instructions indicated in each lab handout
- The Lab-Pro equipment used is breakable, and requires special care. You and your partner will be assigned a box to use, and if the equipment is found to have been handled negligently, points will be deducted from both your safety points and your lab score.
- Not dressing appropriately for lab

ATTENDANCE

- Labs and quizzes can only be completed in a staffed lab. Participation is mandatory, and every student is expected to attend every scheduled class.
- You must attend the section in which you are enrolled.
- There is a point value associated with the work accomplished in each class, and you will not be able to earn points for classes that you do not attend.
- If the university is open, you are expected to attend class and to be on time.

having earned a specific grade on a particular lab is the presence of that graded lab in your lab folder at the end of the semester.

Each student will be assigned a drawer with glassware and equipment. At the beginning of the semester, the drawer contents will be checked for completeness. It is essential that you clean the equipment used after an experiment is completed. The drawers may be checked sporadically. If glassware is broken, the student is responsible for obtaining a replacement item at the main stockroom, room 120 Flanner Hall. At the end the semester, the drawer will be checked out again for completeness.

ACADEMIC INTEGRITY

We wish to make it clear that the standard of academic integrity and personal honesty delineated in the College of Arts & Sciences Statement on Academic Integrity is expected of every student and will be enforced. Details can be found at <http://www.luc.edu/academics/catalog/undergrad/reg.shtml>

Cheating can take many forms in lab, but the most common form is to copy data and answers to analysis questions, or to share files for homework. The data and analysis as well as the homework you submit for marking must be your own, and if it is not, no credit will be awarded for the entire lab, nor will make-ups be granted. Additionally, findings of dishonest academic behavior are reported to the Chair of the Chemistry Department and to the Dean's Office, and are entered into an individual's record. A copied answer or report will result in penalty for all students involved.

DISABILITIES ACCOMODATIONS

If you have a documented disability and wish to discuss academic accommodations, please see your instructor as soon as possible. (The Coordinator of Services for Students with Disabilities is located in the Sullivan Center for Student Services, Suite 260, 508-7714, and must be contacted independently.)

EDUCATIONAL GOAL

In this second semester of general chemistry laboratory, my purpose as your chemistry instructor is to continue to provide a hands on introduction to experimental methods of scientific investigation in chemistry. The fundamental models of chemistry discussed in lecture will provide the basis for understanding the experimental laboratory work. Each lab will provide a practical opportunity for you to gain competence with the basic techniques of lab work and the practical experience necessary to understand its significance. It is my wish that this laboratory experience will encourage students who are seeking intellectual challenges along with an understanding of the chemical principles in the laboratory.

Conducting experiments and collecting data to test the validity of theories and models requires a different set of skills than those required for success in the lecture part of a general chemistry course. During a laboratory activity, each student's hands, mind, eyes, as well as other senses are focused on the task at hand. Success in the lab involves skills in making perceptive qualitative observations and accurate quantitative measurements.

While it is very important that you do your part to prevent an accident from occurring, it is just as important to know what to do if someone is injured.



Critical Injuries include: glass in his/her eye(s), serious cuts, severe chemical burns, severe fire burns, seizures. **Immediately call for help using either the lab phone (security number is taped to phone handle) or the emergency phone in the hallway directly outside the laboratory.** Anyone with chemicals or foreign objects in his/her eye(s) will be escorted to the Wellness Center or to the hospital.

First Aid Basics

Minor Cuts: Band-Aids are available. If you bleed through one Band-Aid, another should be applied over the first. If you bleed through two Band-Aids in a few minutes, or if there is any possibility of broken glass in a cut, you will be escorted to the Wellness Center.

Minor Burns from Fire: If the skin is unbroken, run cool water over the area or submerge in a cool water bath for at least 5 min. Apply a cool, damp towel.

Chemicals in Eyes: Immediately flush eyes with water at the eye wash. Continue with flush for at least 10 minutes. You will probably need to hold the affected eye(s) open to do this properly.

Chemicals on Skin: Dust any dry chemical off with a dry towel and then flush with water. Flush any wet chemical from the skin immediately with water at the sink or safety shower. If clothing is affected, remove clothes before rinsing! Continue with rinse for at least 10 minutes.

Fire Hazards

The primary heat source in this laboratory is the Bunsen burner, which is fueled by natural gas. A lit Bunsen burner is a small, controllable fire, but the heat generated by the burner fire can be quite hazardous in certain circumstances. It can serve as an ignition source for other combustible materials in the lab such as paper (lab handouts, paper towels, filter paper, etc.), plastics (wash bottle), flammable liquids (acetone, ethanol). A burner fire can also ignite clothing and hair. Proper operation of a burner and the absence of combustible materials in the proximity of the burner will significantly reduce the risk of a fire. Each lab is equipped with a fire extinguisher, fire blanket, and safety shower, which should be used in a fire emergency.

Procedure in a case of a fire:

Remain calm; alert the instructor and your immediate neighbors. Personal safety, yours and others in the labs, is always the top priority. A small fire in a small container can be suffocated by covering it with a watch glass or inverted beaker. With a somewhat larger fire, you need to decide whether or not you think you can control it with a fire extinguisher.

Use of a Fire Extinguisher:

Located by the doors in both labs; a back-up fire extinguisher is located at the west end of the floor. Maintain an escape position; i.e. stay between the fire and the doorway. **Break the plastic ring, pull out the metal ring, release the hose from the bracket, direct the hose at the base of the flames, and press the lever down.**

Note: the fire extinguishers are heavy and not particularly easy to direct. These are multi-purpose dry chemical extinguishers, safe for anything we use in lab.

