

CHEMISTRY 114

LABORATORY SYLLABUS

SPRING 2014

George H. Fairchild, Ph.D.

Office: Collier HOSCI 212

Phone: (610) 861-1595

gfairchild@moravian.edu

Carol Libby, Ph.D.

Office: Collier HOSCI 228

Phone: (610) 861-1629

libbyc@moravian.edu

David L. Langhus, Ph.D.

langhusd@moravian.edu

OBJECTIVES

The objectives of the laboratory experience in the General Chemistry course are:

- To familiarize the student with basic laboratory apparatus and initiate the development of correct and safe laboratory techniques.
- To demonstrate the practical application of some of the chemical principles introduced in class.
- To encourage the student to develop skill in observation, interpretation, application and presentation of scientific results.

GENERAL

Students will work in groups of three or four, assigned at the laboratory instructor's discretion. There is no laboratory manual for this course. Materials outlining the exercise to be performed on a given day will be provided in the lab and typically will not involve prior preparation.

ATTENDANCE

Each student is expected to take an active role in performing each of the lab exercises offered. In order to meet this requirement it is necessary that the student arrive for laboratory on time and remain engaged in the work until the group's recorder turns in the laboratory report or the scheduled lab period ends, whichever is earlier. If the student arrives late, leaves early, or appears disengaged from the effort of the group it is customary to reduce the student's score on that exercise relative to that received by the other members of the group. The amount of this reduction is at the discretion of the instructor and will depend upon the degree to which the student's absence or lack of engagement impacts the work of the group. Not attending a lab will result in a grade of zero for that exercise and will typically count as one of your two dropped lab scores at the end of the semester.

Students who miss a laboratory for any reason can make up the work at the discretion of the instructor teaching another laboratory section running that same experiment. You will need to make arrangements to complete missed experiments with the instructor of the lab in which you

expect to do the work. In the case of foreseeable absences such as athletic events, music performances, business or class related trips, etc., it's the student's responsibility to arrange to make up the lab with another lab section doing the same experiment, possibly before the laboratory period in question is missed.

LABORATORY REPORTS

A laboratory report form will be provided for each exercise which is to be completed by the group's recorder. All experimental observations are to be recorded in *ink* on this laboratory report form, or on a fresh sheet of paper, as the recorder prefers, in such a way that the result is legible. If a separate data sheet is used, it is to be submitted along with the properly completed report form provided. Extra report forms will be available if another is needed for some reason. The recorder is responsible for submitting this report for grading on behalf of the group.

A basis of ten points will be awarded each report that is turned in, assuming satisfactory engagement of the individual and the group. Up to ten additional points may be awarded based on the quality of the work done with reference to the scoring rubric for a given exercise. Consequently scores received on lab reports will typically range between 10 and 20. No credit is awarded reports that are not submitted at all.

Laboratory reports are to be turned in on the day the exercise is completed.

Your top ten of twelve lab grades will count toward your lab grade for the semester.

LABORATORY SCHEDULE

There are four laboratory sections this term and each will perform a given exercise contiguously with the others. The following schedule will be followed:

Tues. Jan 21 – Fri. Jan. 24	Introduction to Spectrophotometry
Tues. Jan 28 – Fri. Jan. 31	Chemical Equilibrium
Tues. Feb. 4 – Fri. Feb. 7	Kinetics
Tues. Feb. 11 – Fri. Feb. 14	Acid-base Equilibria and pH
Tues. Feb. 18 – Fri. Feb. 21	Engineering a Bomb
Tues. Feb 25 – Fri. Feb. 28	Anions
Spring Break	
Tues. March 11 – Fri. March 14	Cations, Group I
Tues. March 18 – Fri. March 21	Cations, Group II Observations
Tues. March 25 – Fri. March 28	Cations, Group II Unknowns
Tues. April 1 – Fri. April 4	Cations, Group III
Tues. April 8 – Fri. April 11	General Cation
No Labs During Easter Recess Week	
Tues. April 22 – Fri. April 25	General Salt, checkout

All laboratory work to be considered in the computation of the laboratory grade is to be completed no later than Friday, April 25, 2014.

Students who wish to request accommodations in this class for a disability should contact the Assistant Director of Learning Services for Disability Support, 1307 Main Street (extension 1510). Accommodations cannot be provided until authorization is received from the office of Learning Services.

LABORATORY SAFETY

Students are expected to conduct themselves in an intelligent and orderly manner at all times in the laboratory. Disregard for sensible safety measures will result in dismissal from the laboratory. In particular, the following points are to be observed:

- Students will perform only those experiments assigned or otherwise bearing the prior approval of the laboratory instructor.
- Each student must provide his or her own safety glasses which include side shields for protection from flying debris. Appropriate eyewear is available for sale in the College Bookstore, but you're welcome to obtain them elsewhere if you think you can find a better deal. Eye protection is to be worn over the eyes *at all times* when working in the laboratory.
- Shoes or other footwear that attach securely to the feet and cover the toes are to be worn at all times in the laboratory. Bare feet, stocking feet, flip-flops, sandals and shoes that leave the toes exposed are inappropriate and an invitation to injury.
- Eating, drinking, smoking and applying cosmetics are prohibited in the laboratory at all times. If necessary, these activities must be pursued outside the laboratory. No laboratory apparatus or glassware is ever to be used in connection therewith. At no time shall any food or drink be brought into the laboratory.
- Each student is responsible for the cleanliness of his or her own area, including the adjacent sink. No solids are to be discarded into the sink. Use one of the trash cans. Broken glassware and other sharps are to be disposed of in the container indicated for such. Any hazardous materials, as identified in the lab handout or by the lab instructor, are to be disposed of in the special receptacles provided.
- To reduce clutter, all bookbags and other student possessions not needed to carry out the lab should be left at the back of the room.
- At no time shall any tightly corked or other sealed container be heated or placed near a source of heat.
- All pipetting is to be done with a mechanical suction device provided for that purpose. There is to be *no pipetting by mouth*.
- If somebody near you is doing something dangerous or in a careless fashion, gently bring it to his or her attention. If the behavior persists, inform the instructor. This may make you unpopular but will reduce your chance of injury due to somebody else's negligence.