

Essentials of Chemistry Laboratory C101-WCA1/WCA2
BSU West Campus
Tu or Th 1:40–4:30pm

Spring 2006

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Office Hours 12:40 to 1:40pm Tu/Th either in the laboratory or TBD

Required Materials:

- Chemistry 101 Laboratory Manual
- Safety Eyewear: Goggles or safety glasses with built-in side shields are considered acceptable. Safety eyewear is absolutely required and must be supplied by the student. You will not be allowed to work or be in the laboratory when laboratories are under way without eye protection. There is no makeup of lab work missed because of lack of proper eye protection.
- Towel: This should be an old one from home that can be kept in your locker.

Course Policies:

Attendance/Laboratory Completion: In order to pass the C101 course as a whole, it is expected that all labs are attended and turned in. A maximum of one laboratory is allowed to be counted as incomplete.

Note: a complete lab includes both attending lab and turning in an acceptable report form. After two laboratories are incomplete, the student fails the entire C101 course (not just the lab). No laboratory grades will be dropped. There will not be an independently scheduled make-up lab. Attendance at any lab other than the one you are enrolled in requires the permission of the instructor for that laboratory as well as notification of myself.

Safety: Safe laboratory practices are required. At the end of the first laboratory period, you will sign and turn in the Laboratory Safety Policy form. Unsafe laboratory practices could result in serious injury and will not be tolerated. Any serious infractions will result in dismissal for the laboratory that day and a zero recorded for the experiment.

Late Laboratory Reports: Laboratory report sheets will lose 20% per business day (MTuWThF) that they are late.

Assessment of Student Performance: Each laboratory is worth 10 points (total 150 points), which I will denote on your laboratory report. An additional 15 points will be assigned for laboratory conduct in the areas of safety, cleanliness, patience, cooperation, careful attention to techniques, and promptness. All students will begin with these 15 points but if you consistently need to be reminded of safe laboratory practice (e.g., wearing your eye protection), leave your work area dirty, or are consistently late to class, you will lose these points.

How the Laboratory Affects Your Grade in the Course: The laboratory portion of the course, as described in detail in the separate lab syllabus, is worth up to 20 % of the total course grade. You will receive the corresponding fraction of the 20% based on your laboratory score, which will be added to your lecture percentage to calculate your total score.

Topic Schedule (Tentative):

| Week of | pages | Topic |
|---------|---------|--|
| 1/17/06 | 3–8 | Safety and Lab Tour |
| 1/24 | 9–21 | Graphing |
| 1/31 | 23–30 | Density |
| 2/7 | 31–41 | Inorganic Nomenclature |
| 2/14 | 43–52 | Colorimetric Analysis |
| 2/21 | 53–58 | Chemical Formula of Magnesium Oxide |
| 2/28 | 59–64 | Preparation of $K_3Fe(C_2O_4)_3 \cdot 3H_2O$ |
| 3/7 | 65–72 | Mole Volume of Gases |
| 3/14 | 73–81 | Solving the Puzzle of Mystery Solutions |
| 3/21 | 83–90 | Colligative Properties |
| 3/28 | | Spring Vacation |
| 4/4 | 91–98 | Determination of Enthalpies of Reaction |
| 4/11 | 99–106 | Acid Base Titration |
| 4/18 | 107–116 | Radioactive Decay—A Simulation |
| 4/25 | 117–123 | Chemical Reactions |
| 5/2 | 125–131 | Gases |

All laboratory assignments are due one laboratory meeting after the laboratory is performed. It is recommended that you complete, or at least work on, the report during laboratory time. This will allow you to get help from the instructor and you will decrease the out-of-class time you will need to spend on laboratory assignments. No laboratory report will be accepted for any reason after Thursday, May 4, 2006.

Please read through each laboratory before your laboratory meeting. By doing this, you will be able to understand what you will be doing during the laboratory and you will finish the lab faster and with more comprehension. This will allow you time in the laboratory to work on the report form.

Learning Objectives

At the successful conclusion of this course, the following skills should be mastered:

1. Critical Thinking/Problem Solving Skills:

- Understand and follow standard laboratory safety practices.
- Apply chemical principles learned in C101 (lecture) and C101L (laboratory) to understand and interpret the chemical phenomena observed in the laboratory.

2. Communication Skills:

- Communicate the results and conclusions of laboratory experiments in a standard report form.

3. Cultural Perspective:

- Be aware of contributions made by chemistry in the increasingly technology-oriented culture of today especially in areas such as the environment and health sciences.

4. Breadth of Knowledge and Intellectual Perspective:

- Demonstrate skill with instruments and in a variety of laboratory procedures, including titration; qualitative analysis of various ions; and use of a balance, volumetric glassware, burets, and a Bunsen burner or a hot plate.
- Demonstrate a variety of different types of data analysis, including graphical analysis.
- Apply chemical principles learned in the lecture and laboratory to understand the chemical phenomena observed in the laboratory.