

CHE 155L General Chemistry II Laboratory

Section A — F 8:30 – 11:20 AM — Science Wing, Plant Hall 108

Section E — F 11:30 AM – 2:20 PM — Science Wing, Plant Hall 108

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Office Hours: Dr. Wilson will be available 10:00 – 11:15 AM Monday through Thursday and at other times by appointment.

Course Description: Laboratory experiments supplement lecture material presented in CHE 154.

Prerequisites: CHE 152 and CHE 153L (both with a grade of “C” or better). Pre- or corequisite: CHE 154 (with a grade of “C” or better).

Learning Objectives: In addition to reinforcing certain CHE 154 lecture concepts, students in CHE 155L will:

- Develop the ability to study and learn independently.
- Develop and demonstrate competence in the use of scientific instrumentation, data collection and interpretation, and experimental design.
- Learn and implement best practices with regard to chemical safety.
- Develop and practice critical thinking and problem solving skills.
- Understand how electrochemistry relates to redox reactions.
- Identify valid scientific information and view critically unscientific information.

Required Materials: General Chemistry II: Laboratory Manual, duplicate page laboratory notebook (you may continue use of your CHE 153L laboratory notebook), a scientific calculator (a phone or other electronic device may *not* be substituted for a calculator), safety glasses (must have clear lenses which meet the OSHA Z87 specification), lab coat, and proper attire (in accordance with UT Chemistry Department rules).

Attendance: Attendance and participation in every class is mandatory. There are no lab make-ups or accommodations to attend another laboratory session during the week. If you are to miss class on school business or due to illness, inform your instructor as soon as possible.

Communication: Class announcements, lecture notes, course documents, and grades will be posted on Blackboard (<http://ut.blackboard.com>). Students are responsible for monitoring their UT email account and the course Blackboard site.

Laboratory Preparation: Students are required to read and be familiar with the weeks experiment *before* laboratory begins. This habit will help in understanding the pre-lab lecture and in carrying out each experiment both safely and efficiently.

Pre-lab Lecture: It is imperative students be punctual and attend the pre-lab lecture. The lecture introduces the laboratory; addresses important concepts, procedures, and information (such as calculations) necessary to complete the lab report and discusses safety & chemical disposal methods specific to the current lab.

Laboratory Notebook: Each student must keep their own laboratory notebook. The laboratory notebook is used to briefly describe experimental procedures, record data and observations, and answer laboratory report questions. It is designed to be a permanent record of your experiment, the data you collect, and the observations you make, and should be legible and organized. Anyone (especially your instructor) should be able to pick up your notebook at any time and clearly follow what you have been doing. The first two pages of the laboratory notebook should be left blank to create a Table of Contents for easy reference. Each experiment should begin on a new page with the title of the experiment and date followed by a brief description/outline of the experimental procedure. ALL recording in the laboratory notebook must be *in ink* (blue or black) with mistakes denoted by a single line drawn through the error and correct information written above, below, or next to the incorrect one (the original error must be legible through the strike-out; *absolutely no white-out*). During the experiment, the laboratory notebook (not the lab manual or scraps of paper) will be used to record all data collected; the data sheet from the laboratory manual can serve as a template for data collection. Some of these data will later be transferred to your laboratory report pages and/or used in calculations, but it must be recorded first in your notebook as the experiment is performed and *not* written on separate sheets or scraps of paper then transcribed into the notebook at a later time.

Laboratory Reports: Laboratory reports are due at class time the week following the experiment, unless otherwise informed (see laboratory schedule). No credit will be given for a laboratory report unless you are present in lab when the experiment is performed. Late reports will lose 20 points for each week late; reports greater than two weeks late will *not* be accepted and will receive zero points. The report will consist of (in the following order):

1. The report sheets from the lab manual. The report sheets should *never* be used for initial data collection or calculations as that is done in your laboratory notebook. Data and calculated answers are transferred from your laboratory notebook to the report sheets *in ink*. This page should be neat and clean without errors or corrections.
2. The *yellow* copy of your entire lab recording. This should include at least the following, properly labeled:
 - (a) The title of the experiment with your complete name (first & last) and those of your lab partner(s).
 - (b) Data collection page(s): the raw data collected during the experiment.
 - (c) Calculation page(s): *All* calculations pertaining to the lab neatly and clearly presented/labeled. Show your work.
 - (d) Observations: Anything you find relevant and errors you may have made.
 - (e) Answers to the pre-lab questions (including calculations, if required).
 - (f) Answers to the post-lab questions (including calculations, if required).
 - (g) Graphs.

Lab reports are valued at 100 points each and will be graded based on completeness of the report as well as correctness. Deficiencies in any of the above areas, incomplete or incorrect calculations, improper use of significant figures, incorrect answers to pre/post lab questions, incorrect error correction methods, or not in ink will result in lower report scores.

Exams: There will be two exams given during the semester, a mid-term and a final (covers the second-half of the semester). Generally, there are no make-ups for examinations. The exams are open book/open note and may include questions regarding observations, procedures, techniques, and calculations similar to those completed during the semester. Keeping an organized notebook with all observations, calculations and other notes well documented will improve the likelihood of scoring well on the exams.

Grades: The course grade will be determined from the lab reports/participation (70%) and two exams (30%). The grading scale used for the course is:

A	100.0 – 92.0%
A/B	91.9 – 89.0%
B	88.9 – 82.0%
B/C	81.9 – 79.0%
C	78.9 – 65.0%
D	64.9 – 55.0%
F	54.9 – 0.0%

This course and CHE 154 have separate grades; a student must make a grade of “C” or better in *both* courses to be eligible to take any chemistry class that requires them as prerequisites.

Safety: Safety rules will be strictly enforced. Students must be familiar with these procedures and abide by them at all times. Safety is taken very seriously both for your own protection and that of others in the laboratory. Safety glasses, lab coat, clothing and shoes must be consistent with the safety policy outlined in the laboratory manual in order for a student to be permitted in the laboratory. The use of cell phones, iPods, or similar devices in the laboratory is prohibited. They should be turned off, including any vibrate feature before laboratory begins.

Academic Dishonesty: Cheating in any form will not be tolerated. Students caught violating any aspect of the University of Tampa’s Academic Integrity Policy will be penalized in all cases. Penalty ranges from “0” on an assignment to “F” for the course without regard to a student’s accumulated points. Students may also face expulsion. It is the student’s responsibility to become familiar with the policies of the university regarding academic integrity and to avoid violating such policies. Students will typically be working in groups for the experiments. You are welcome to also work on the lab reports together, however, answers to pre-lab and post-lab questions that require a written explanation must be in your own words. Violations of this procedure will be considered an academic integrity violation (plagiarism) and may result in lower lab report scores, a zero on the lab report, or further action. Multiple violations will be dealt with in a strict manner.

Office of Student Disability Services: If there is any student who has special needs because of a disability, please go directly to the Academic Success Center in North Walker Hall. You may phone 813-258-5757, or e-mail jlaw@ut.edu to report your needs and provide documentation of your disability for certification. Janice Law is the director of the Academic Excellence Programs that includes Student Disability Services. Please feel free to discuss this issue in private if you need more information.

Disruption Policy: The professor believes that every student has the right to a comfortable learning environment where the open and honest exchange of ideas may freely occur. Each student is expected to do his or her part to ensure that the classroom (and anywhere else the class may meet) remains conducive to learning. According to the terms of the University of Tampa Disruption Policy, the professor will take immediate action when inappropriate behavior.

Course Interruption Due To Adverse Conditions: In case of any adverse condition or situation which could interrupt the schedule of classes, each student is asked to access www.ut.edu for information about the status of the campus and class meetings. In addition, please refer to ut.blackboard.edu for announcements and other important information. You are responsible for accessing this information.

Syllabus Modifications: The professor reserves the right to make changes to this syllabus as necessary.

Schedule: The following is a tentative schedule of experiments and exam dates:

Date	Experiment	Pre-lab Questions	Post-lab Questions	Due
August 29	Introduction, Syllabus, Safety Rules	—	—	—
September 5	Molar Mass of a Volatile Liquid (Lab 10)	1-5	1-3, 5-7	—
September 12	Molar Mass Determination by Colligative Properties (Lab 11)	1-4	1-3	Lab 10
September 19	Synthesis of Aspirin (Lab 13)	1-4	1	Lab 11
September 26	Kinetics of the Reaction of Phenolphthalein with NaOH (Lab 12)	1-4	—	Lab 13
October 3	Review	—	—	Lab 12
October 10	Mid-term Exam	—	—	—
October 17	Spectrophotometric Determination of an Equilibrium Constant (Lab 14)	1-3	1	—
October 24	Preparation of Nickel(II) Coordination Compounds (Lab 15)	1-4	—	Lab 14
October 31	pH Experiments (Lab 16)	1-5	1-3	Lab 15
November 7	Molar Solubility – Common Ion Effect (Lab 17)	1-3	1, 3	Lab 16
November 14	Thermodynamics of the Dissolution of Borax (Lab 18)	1-2	1-2	Lab 17
November 21	Review	—	—	Lab 18
November 28	<i>No Class</i>	—	—	—
December 5	Final Exam	—	—	—