

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

Section I — F 2:30 – 5:20 PM — Science Wing, Plant Hall 108

Instructor: Dr. Matthew Wilson

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Office Hours: Dr. Wilson will be available 9:00 – 11:30 AM Monday and Wednesday, 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 week’s experiment *before* laboratory begins, including completing any associated pre-lab assignment. 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 experiment, addresses important information necessary to complete the lab report, and discusses specific safety & chemical disposal methods.

Pre-lab Assignments: Most labs have an associated pre-lab assignment, which is to be done *before* the lab, and is due at the *beginning* of that lab’s pre-lab lecture.

Lab Notebook: Each student must keep his or her own lab notebook. The lab notebook is used to briefly describe experimental procedures, record data and observations, and perform calculations. It is designed to be a permanent record of your experiment and should be legible and organized. *All* recording in the lab notebook must be in blue or black ink, with mistakes denoted by a single line drawn through the error and correct information written above, below, or next to the mistake. The original error must be legible through the strike-out; *no* white-out is to be used in the lab notebook. The first two pages of the lab notebook should be left blank to create a Table of Contents, to be updated as new experiments are recorded. Each experiment should start on a new page, beginning with the title of the experiment and the date performed. During the experiment, the lab notebook will be used to record a description of the experimental procedure followed and all data collected; the data sheet from the lab manual may serve as a template for data collection. Some of the data will later be transferred to the lab report pages and/or used in calculations, but they must first be recorded in the lab notebook as the experiment is performed. Data are *not* to be written on separate sheets or scraps of paper and then transcribed into the notebook at a later time.

Laboratory Reports: Lab reports are due at the *beginning* of class the week following the experiment. No credit will be given for a lab report unless the student was present and performed the experiment. The lab report will consist of:

1. The report sheets and post-lab questions from the lab manual.
2. The *yellow* copy of the lab notebook pages for the experiment. This should include at least the following:
 - (a) The title and date of the experiment, with your full name and those of your lab partner(s).
 - (b) A description of the experimental procedure followed.
 - (c) *All* raw data collected during the experiment.
 - (d) *All* calculations pertaining to the experiment, with work shown.
 - (e) Any observations you found relevant and errors you may have made.
 - (f) Graphs, if applicable.

Exams: There will be two exams given during the semester, a mid-term and a final (which covers the experiments of the second part of the semester). There are no make-ups for exams. 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 lab notebook with all observations, calculations, and other notes well-documented will improve the likelihood of scoring well on the exams.

Grading: Each lab is worth 100 points, divided among the pre-lab assignment and lab report. Late submissions will lose 10 points for each week late, rounded up; submissions greater than two weeks late will *not* be accepted and will receive zero points. The course grade will be determined from the labs (70%) and exams (30%). Letter grades will be assigned as follows:

A	100.0 – 90.0%
AB	89.9 – 85.0%
B	84.9 – 80.0%
BC	79.9 – 75.0%
C	74.9 – 70.0%
D	69.9 – 60.0%
F	59.9 – 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	Due
September 4	Introduction, Syllabus, Safety Rules	—
September 11	Molar Mass of a Volatile Liquid (Lab 10)	Lab 10 Pre-lab
September 18	Molar Mass Determination by Colligative Properties (Lab 11)	Lab 10 Report, Lab 11 Pre-lab
September 25	Synthesis of Aspirin (Lab 13)	Lab 11 Report, Lab 13 Pre-lab
October 2	Kinetics of the Reaction of Phenolphthalein with NaOH (Lab 12)	Lab 13 Report, Lab 12 Pre-lab
October 9	Review	Lab 12 Report
October 16	Mid-term Exam	—
October 23	Spectrophotometric Determination of an Equilibrium Constant (Lab 14)	Lab 14 Pre-lab
October 30	Preparation of Nickel(II) Coordination Compounds (Lab 15)	Lab 14 Report, Lab 15 Pre-lab
November 6	pH Experiments (Lab 16)	Lab 15 Report, Lab 16 Pre-lab
November 13	Molar Solubility – Common Ion Effect (Lab 17)	Lab 16 Report, Lab 17 Pre-lab
November 20	Thermodynamics of the Dissolution of Borax (Lab 18)	Lab 17 Report, Lab 18 Pre-lab
November 27	<i>No Class</i>	—
December 4	Review	Lab 18 Report
December 11	Final Exam	—