

CHE 153L General Chemistry I Laboratory

Section B — R 8:30 – 11:20 AM — Science Wing, Plant Hall 108

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

Section H — R 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 10:00 AM – 12:30 PM Monday and Wednesday, and at other times by appointment.

Course Description: Laboratory experiments supplement lecture material presented in CHE 152.

Prerequisite: Current enrollment in or successful completion of CHE 152 (with a grade of "C" or better).

Learning Objectives: In addition to reinforcing certain CHE 152 lecture concepts, students in CHE 153L 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.
- Identify valid scientific information and view critically unscientific information.

Required Materials: General Chemistry I: Laboratory Manual, duplicate page 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. If you are to miss class on school business or due to illness, inform your instructor as soon as possible. Documentation is required for an excused absence from a lab, and the grade for such a lab will be replaced by the average grade on all other labs at the end of the semester.

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

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 items regarding safety and chemical disposal methods.

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.

Lab Notebook: Each student must keep his or her own lab notebook. 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. The lab notebook should include at least the following:

- The title and date of the experiment, with your full name and those of your lab partner(s).
- A description of the experimental procedure followed.
- *All* raw data collected during the experiment.
- *All* calculations pertaining to the experiment, with work shown.
- Any observations you found relevant and errors you may have made.

Exams: There will be two written exams, each worth 200 points, given during the semester, a mid-term and a final (which covers the experiments of the second part of the semester). These 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. In addition to the written exams, there will be a practical exam worth 100 points. There are no make-ups for exams.

Grading: Each lab is worth 100 points, divided among the following three parts:

- The pre-lab assignment, due at the beginning of class. (15 points)
- Participation in performing the experiment. (30 points)
- The *yellow* copy of the lab notebook recording and any report sheets, post-lab assignment, and graphs, due at the beginning of the following class. (55 points)

Late submissions may lose 5 points for each day late.

A total of 1400 points are possible in the course. Letter grades will be assigned as follows:

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| A | 1400 – 1260 points | 100.0 – 90.0% |
| AB | 1259 – 1190 points | 89.9 – 85.0% |
| B | 1189 – 1120 points | 84.9 – 80.0% |
| BC | 1119 – 1050 points | 79.9 – 75.0% |
| C | 1049 – 980 points | 74.9 – 70.0% |
| D | 979 – 840 points | 69.9 – 60.0% |
| F | 839 – 0 points | 59.9 – 0.0% |

This course and CHE 152 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 either of them as prerequisites. Permission to retake the course during the fall or spring semester after having earned a letter grade in or having officially withdrawn from the course can only be granted by the department chair.

Schedule: The following is a tentative schedule for the semester:

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| January 19 | Introduction, Safety Rules |
| January 26 | Density and Uncertainty in Measurements (Lab 1) |
| February 2 | Separation of the Components of a Mixture (Lab 2) |
| February 9 | Formula of a Hydrated Salt (Lab 3) |
| February 16 | Chemistry of Copper (Lab 4) |
| February 23 | Review |
| March 2 | Mid-term Exam |
| March 9 | <i>No Class</i> |
| March 16 | Analysis of Vinegar (Lab 5) |
| March 23 | Calorimetry (Lab 6) |
| March 30 | Developing a Scheme for Qualitative Analysis (Lab 7) |
| April 6 | Qualitative Analysis of Group I Cations (Lab 8) |
| April 13 | Qualitative Analysis of Group III Cations (Lab 9) |
| April 20 | Practical Exam |
| April 27 | Final Exam |

Americans with Disabilities Act (ADA) Statement: If you have special needs because of any disability, please go to the Academic Success Center in North Walker Hall for information regarding registering as a student with a disability. You may also call 813.257.5757 or email disability.services@ut.edu. Please feel free to discuss this issue with me, in private, if you need more information.

Academic Integrity Policy: This class will follow UT's Academic Integrity Policy (<http://ut.smartcatalogiq.com/en/current/catalog/Academic-Policies-and-Procedures/Academic-Integrity-Policy>).

Academic Disruption Policy: This class will follow UT's Academic Disruption Policy (<http://ut.smartcatalogiq.com/en/current/catalog/Academic-Policies-and-Procedures/Disruption-of-the-Academic-Process>).

Emergency Preparedness: In case of any adverse condition or situation which could interrupt the schedule of classes, each student is asked to access <http://www.ut.edu> for information about the status of the campus and class meetings. In addition, please refer to <http://ut.blackboard.com> for announcements and other important information. You are responsible for accessing this information as needed.

Additional Resource: The Academic Center for Excellence (ACE, <http://www.ut.edu/ace/>) in the Academic Success Center offers tutoring in several subjects, including chemistry. This is available at no charge above your tuition.

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