

## CHE 153L General Chemistry I Laboratory

**Section B3 — R 8:00 AM – 10:50 AM — Science Wing, Plant Hall 107**

**Instructor:** Dr. Matthew Wilson

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**Office Hours:** Dr. Wilson will be available Mondays 10:00 AM – 12:00 PM, Wednesdays 10:00 – 11:00 AM, Thursdays 11:00 AM – 1:00 PM, and at other times by appointment.

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

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

### Learning Objectives:

- Gain knowledge essential to a broad understanding of chemistry, including:
  - Stoichiometry of chemical reactions
  - Thermodynamics
  - Chemical reactivity and properties of organic and inorganic compounds
  - Precision, accuracy, and related statistics
- Develop and practice critical thinking and problem solving skills.
- 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.

**Spartan Ready Competencies:** The University of Tampa is committed to preparing students to become successful individuals with an advanced understanding of their field of study, the interdisciplinary workplace, how to be effective leaders and engaged citizens who contribute to society. Through co-curricular programs, students develop high demand competencies that are relevant for today's workforce. These make up the Pillars of Spartan Readiness which are supported by life skills education and training to be a professional. (<http://www.ut.edu/spartanready/>)

- *Critical thinking:* The ability to envision and employ analysis, interpretation and reason using information and data through cognitive processes. Examples include analytical thinking, problem solving, decision making, understanding qualitative data, understanding quantitative data, and reading comprehension.
- *Interpersonal Abilities:* The ability to develop personal insight in order to engage with others and create meaningful relationships, which will lead to effective collaboration. Examples include civility, building trust, overcoming personal conflict and differences, dealing with difficult people, building good work relationships, social skills etiquette, learning to compromise, and handling difficult conversations.
- *Organization:* The ability to effectively and efficiently manage and/or systematize resources, time and individuals to accomplish goals and tasks. Examples include time management, project management, prioritizing, strategic planning, attention to detail, multi-tasking, coordination, and dealing with the unexpected.
- *Teamwork:* The ability to successfully build, lead, manage, motivate and work with others. Examples include delegation, leadership, following, conflict resolution, accountability, and cooperation.

**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:** 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. Students are still responsible for understanding the concepts related to a lab they were absent from.

**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. 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.

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

- The pre-lab quiz. (10 points)
- Participation in performing the experiment. (30 points)
  - Participation will be docked 5 points for arriving late, borrowing safety glasses and/or a lab coat from the lab stock, or repeatedly failing to comply with instructions. Participation in the lab may be denied for not adhering to the safety rules or arriving too late to be able to complete the experiment.
- The *copy* of the lab notebook recording. (60 points)

**Exams:** There will be three written exams, each worth 120 points, given during 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. Generally, there are no make-ups for exams.

**Grading:** A total of 1260 points are possible in the course. Letter grades will be assigned as follows:

A	1260 – 1134 points	100.0 – 90.0%
AB	1133 – 1071 points	89.9 – 85.0%
B	1070 – 1008 points	84.9 – 80.0%
BC	1007 – 945 points	79.9 – 75.0%
C	944 – 882 points	74.9 – 70.0%
D	881 – 756 points	69.9 – 60.0%
F	755 – 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:

August 29	Introduction, Safety Rules
September 5	<i>No Class</i>
September 12	Density and Uncertainty in Measurements (Lab 1)
September 19	Separation of the Components of a Mixture (Lab 2)
September 26	Formula of a Hydrated Salt (Lab 3)
October 3	<b>Exam 1</b>
October 10	Chemistry of Copper (Lab 4)
October 17	Analysis of Vinegar (Lab 5)
October 24	Molar Mass of a Volatile Liquid (Lab 6)
October 31	<b>Exam 2</b>
November 7	Calorimetry (Lab 7)
November 14	Qualitative Analysis of Cations (Lab 8)
November 21	VSEPR and Molecular Modeling (Lab 9)
November 28	<i>No Class</i>
December 5	<b>Exam 3</b>

**Additional Resources:** 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.

**Disclosures:** The University of Tampa syllabus disclosures may be found on this course's Blackboard site.