

General Chemistry Laboratory I, NSC444

Fall 2007

Instructors	Todd Smith (Sci 110), Allison Turner (Sci 206)
Location	Science 112
Days & Time	Tuesday, 1:30-4:50
Readings	Various laboratory protocols

Course Description

Science is a process, not a collection of facts. In this laboratory we will combine the study of chemistry with the process of science. We will begin by developing some basic quantitative skills and familiarity with laboratory techniques. The activities for these early parts of the lab will be fairly structured. As you develop your ability to approach a problem scientifically the activities will be less structured and you will have more responsibility for designing and conducting your own experiments. Students will work on projects in groups but each student will keep their own laboratory notebook and write their own laboratory reports.

Grading Policy

Students are expected to attend all labs and to complete all reading assignments. There will be two lab reports due over the course of the semester. Each report will describe the student's research project, and each report is worth 30 points. You will also keep a lab notebook (see below), which will be evaluated at the end of the semester, and will be worth 20 points. The final portion of your grade will be based on your preparation for and performance in the lab. The grade received in the course will be the ratio of points earned over points possible: 90% & above = A, 80-89% = B, 70-79% = C, 60-69% = D. Diligent and conscientious participation in lab and on assignments will boost borderline grades to the higher grade.

There will be no makeup labs, but if extenuating circumstances will prevent you from coming to lab or completing a lab report notify us as soon as possible so that we can make alternative arrangements — for example, a writing assignment on the same topic as the lab from which the student was absent.

Laboratory Notebooks

For this course you will need a dedicated laboratory notebook. For each laboratory session you should record the purpose of the lab, what you did in the lab, and what you found. Your notebook is a place to keep detailed notes of these activities in a format that will allow you to make sense of your lab activities at a later date, e.g. when writing a lab report at 3 a.m.

Co-requisite

General Chemistry I, NSC158

Laboratory schedule for the semester

Date	Lab	Topic	Assignment
9/5	0	Intro class	
9/11	1	Laboratory safety; soil pH study	Bring a lab notebook
9/18	2	Soil pH data analysis	
9/25	3	Iron content of breakfast cereal	
10/2	4	Stoichiometry: NaHCO_3 in Alka-Seltzer tablets	
10/9	5	The molar volume of gases	Lab report is 1 due
10/16	6	Calorimetry – heat from hand-warmers	Lab notebooks due
10/23		Hendricks Days – no lab	
10/30	7	Assay of nitrates in surface waters	
11/6	8	Nitrate assay continued	
11/13	9	Assay of Phosphates in surface waters	
11/20	10	Phosphate assay continued	Lab report 2 due
11/27	11	Biodiesel synthesis from different oils	
12/4	12	Biodiesel analysis by gas chromatography	Lab notebooks due
12/11	13	Laboratory clean-up	