

Chemistry 436 — Winter 1997

Physical Chemistry Laboratory — 1st credit

Instructor: Dr. John B. Miller  
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Office Hours: M 1500-1600  
R 1300-1400  
or by appointment

Class: T 0800 – 1200, M<sup>c</sup>Cracken 4210 & 4250

Supplies: Safety Goggles and Laboratory Notebook *with carbons*.

Prerequisite: Chem 430 or Chem 535.

Text: Daniels, *et al.*, *Experimental Physical Chemistry*

Manual: Houser, Schreiber and Lowry, *Physical Chemistry Laboratory*.

Assignments: A statistical problem set will be due the second week of class.

You will perform five laboratory experiments:

Required Experiments

*[Full Reports]*

- 1 — N<sub>2</sub>O<sub>4</sub> Dissociation
- 2 — Vapor Pressure
- 3 — Heat of Combustion
- 4 — Heat Capacity of Gases

Selected Additional Experiment

*[Pick one, Full Reports]*

- 6 — Binary Liquid-Vapor Equilibrium
- 7 — Fractional Distillation

An abstract for each experiment is due by 1700 the day before the experiment is to be performed. The abstract should be about one page and consist of a brief synopsis of the experiment, including important theories, procedures, hazards and cautions relating to the experiment. This is an important part of the preparation for the laboratory.

Note also that the laboratory manual will **not** be permitted inside the classroom. All relevant procedures and warnings must be written in the laboratory notebook **prior to** the laboratory session. This is to ensure that you understand the experiment before attempting to perform it. Carbon copies of data will be collected at the end of each laboratory period.

A report for each experiment is due by 1700 one week after completion of that experiment. The reports should conform to the guidelines set forth in the laboratory manual. Grammar, punctuation, style, and neatness all count.

Grading:  
Experimental reports  
Prelab abstracts

Statistical Problem set 1 @ 100 points  
5 @ 100 points  
5 @ 15 points

Abstracts will be graded overnight.

Laboratory reports will be graded and generally returned within about two weeks.

If a report is unacceptable, the student will be directed to The Writing Center for help with a rewrite, then both versions will be turned in (with no grading penalty).

Late Work: Late statistical problem sets will be assessed a penalty of 10%. Problem sets more than one week late will **not** be accepted.

Late Experimental abstracts will be accepted but given zero points.

Late Experimental reports will be assessed a penalty of **10% per week**. Reports more than three weeks late will **not** be accepted.

Lab Rules: Safety Goggle or Safety Glasses with side shields must be worn at all times in the laboratory.

Contact lenses are not permitted, even if worn with safety goggles.

Open-toed shoes are not permitted. Long pants are suggested. Loose, dangling clothing (scarves, ties, baggy sleeves, long necklaces) should be avoided. If clothing is deemed to be a safety hazard by the instructor, you will be required to change into appropriate attire.