

CHEM 352L. PHYSICO-CHEMICAL MEASUREMENTS SPRING 2017

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REQUIRED TEXT: Experiments in Physical Chemistry, 8th or 9th Edition, C.W. Garland, J.W. Nibler, and D.P. Shoemaker McGraw-Hill (2007).

COURSE DESCRIPTION: Chemistry 352L is a Writing Intensive laboratory course that couples experimentation with scientific writing. The course focuses on the understanding and application of principles of physical chemistry, the use of scientific instrumentation and the organization and explanation of results in laboratory reports.

CHEM 352L IS A WRITING-INTENSIVE COURSE. A brochure on writing courses is posted at our Laulima site. Also see <http://www.hawaii.edu/gened/focus/w.htm> for information on WI courses. Also available at our Laulima website: "Guide to Writing a Lab Report for Chemistry Students"

GRADING:

YOUR SEMESTER GRADE WILL BE CALCULATED FROM:

Written Reports and Notebooks	80%
Calculated from the scores of experiments run during the weeks of 1/24-1/25 (10%) and 1/31-2/1 (10%) plus the scores from the remaining 8 laboratories (60%)	
Performance in the Labs as determined by the TAs	10%
Take-home final	10%

Please note that while not all lab reports will be included in the grade – all labs must be written up to an extent deemed acceptable by the appropriate TA, as recommended by the Board on writing-intensive courses. A lab report should be a concise description of both the experiment being performed and of the results you obtained. Typically, the lab reports in Chem 352L should NOT exceed 10 pages and points will be deducted from needlessly verbose reports. Further details on the content and standards of lab report will be explained in class. Plagiarism is STRICTLY forbidden. You may not dry-lab an experiment or use another person's data, unless approved by the TA.

THE "REVISION" PROCESS FOR EXPERIMENTS RUN ON 1/24-1/25 AND 1/31-2/1

To learn to write well, you need to practice, and you also need timely feedback.

You are strongly encouraged to submit your reports when they are due (see next section). There are no extensions for the lab reports (see next section for due dates and late penalties). Exceptions are made only for documented medical/family emergencies.

The first two reports must be resubmitted after they have been graded. Your first two lab reports will be extensively critiqued. The revisions must address the points of the critique. Your grade will be the average of the original and revised reports. Revised reports will be due in one week.

DEADLINES FOR LAB REPORTS AND LATE PENALTY: All reports are due at 1:30 PM exactly one week after the completion of the experimental work. Submit the lab report to your TAs, not Prof. Head.

If you submit your report on-time, your graded report should be returned to you in ~1 week.

For Experiments 1-5 (run from 1/24-2/22): Late reports will be assessed a penalty of 20% per weekday late.

For Experiments 7-11 (experiments from 3/8 onwards): Late reports will be assessed a penalty of 10% per weekday late, with the additional condition that **all** reports are due by Friday, April 28, 2017, 4:30 p.m. No reports will be accepted after this deadline.

THE IMPORTANCE OF A GOOD LABORATORY NOTEBOOK. In principle, it is probably the most important “15%” of your lab report grade. As discussed on the first day, the lab notebook is a critically important tool in experimental chemistry. Prior to your lab class, you should read the experiment carefully. As part of your preparation (i.e., all written in your notebook before you get to class!), you should state the **OBJECTIVE** of the experiment for the week, outline the **PROCEDURE**, and prepare for **DATA COLLECTION** (e.g., table). Your TAs will provide additional guidance on what to include.

To reinforce good habits, **lab notebooks must be initialed by your TA before you leave the laboratory.** He'll initial all the pages that you've used for the day. A photocopy of the relevant pages of the laboratory notebook must accompany the report for each experiment. If these photocopies are missing from your lab report, then it (your report) will be returned to you without a grade (and will be assessed the appropriate penalty starting from the day it was due, not the day you get it back), if the pages are missing.

We want to see your writeup based on your data. There is no benefit in using someone else's data. Physical Chemistry Lab is not Analytical Chemistry lab, so your grade does not depend on the accuracy or precision of your experimental data (clearly, however, your report will be much harder to write in the extremely bad cases).

PLAGIARISM DOES NOT PAY, so don't do it. The possible results range from a “0” for the lab report to an “F” for this course (and worse!).

CHEM 352L EXPERIMENT SCHEDULE FOR TUESDAY PM (+1 to date for Wednesday PM):

Week of:	1	2	3	4	5	6	7	8	9	10	11	12
1/10	General Safety Overview; Review of Syllabus											
1/17	Writing Lab Reports; Error Analysis											
1/24	A	B	C	D								
1/31		A	B	C	D							
2/7	D		A	B	C							
2/14	C	D		A	B							
2/21	B	C	D		A							
2/28						All						
3/7							A, B	C	D			
3/14							C, D	B	A			
3/21								A	C	D	B	
3/28	<i>Spring Break</i>											
4/4								D	B	A	C	
4/11										C	A	
4/18										B	D	
4/25												All

- 1 Exp. 3 Heat-Capacity Ratios for Gases [Squire]
- 2 Exp. 6, Heats of Combustion [Shinsato]
- 3 Exp. 12, Chemical Equilibrium in Solution [Shinsato]
- 4 Exp. 17, Conductance of Solutions (Handout) [Squire]
- 5 Exp. 27, Intrinsic Viscosity: Chain linkage in PVA [Brennan]
- 6 NMR Spectroscopy - Lecture only (no experiment this week) [Dr. Apple]
- 7 Exp. ??, NMR spectroscopy experiment – To Be Determined [Shinsato]
- 8 Exp. 31, Magnetic Susceptibility [Squire]
- 9 Exp. 34, Absorption Spectrum of a Conjugated Dye [Brennan]
- 10 Exp. 37, Vibrational-Rotational Spectra of HCl and DCl [Shinsato]
- 11 Exp. 39, Absorption & Emission Spectra of Iodine (Absorption only) [Squire]
- 12 Laboratory Cleanup/ Course Evaluation/ Take Home Final