

**CHE 340L-12
COURSE SYLLABUS**

Analytical Chemistry Lab

Fall 2003

Section 12 M 1:00 PM – 5:50 AM
Natural Science Center Room #427

Instructor: Dr. James A. Gawenis

Office: SC 454

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Office Hours:

Mon 3:00 PM – 5:00 PM

Phone: (859) 572-5411

Thu 11:00 AM – 1:00 PM

Other hours by appointment.

Course Content and Objectives:

This laboratory course provides lab manipulatory techniques that will enable accurate and precise data. In order to meet these requirements, stress will be on disciplined, orderly, and careful technique. This discipline should instill a respect for exact data and further one's ability to evaluate such data and determine its reliability in regards to the limitations of the techniques of measurement and analysis employed

Required Texts:

Analytical Chemistry Laboratory Manual Vinay Kumar and Roger Blanchard (available at the NKU Bookstore)

A bound notebook of approximately 10" x 7", is required for submitting weekly reports. Maintenance of this notebook is outlined on page xii of your lab manual

Course Requirements:

Please read the following carefully as it will affect your grade

1. Review the schedule and be aware of the due dates – if you are unsure, ASK.
2. Safety glasses will be worn, correctly, at all times in the lab. I do not waver on this issue. You are already aware of other safety issues, so I will not dwell on them.

3. Access to the lab is limited to the scheduled lab period. Excused absences may be given other times to complete their work at other times.
4. For instructions concerning unknowns and "lateness" policy, refer to "Policies and Procedures for Analytical Chemistry" (attached).
5. Lab write-ups are due according to the schedule as listed (usually the second Monday after lab). A 10% deduction per day will be imposed on your grade for late lab write-ups. Incomplete write-ups (missing pages, graphs, questions, etc.) or write-ups greater than one week late will not be graded.
6. All work must be legible and grammatically correct. For a description of write-up requirements, refer to pages 1-3 of your lab manual.
7. I do not mind if you work together outside of lab to complete the assignments. However, I expect to see individual work turned in, not identical copies of someone else's work.

Grading:

Your percentage score will be calculated from the number of points earned from the total possible points. Each experiment is worth 100 points. Points are given (or removed) based on accuracy, precision, and the write-up.

Tentative letter grades are as follows:

| | |
|---------|---|
| 88-100% | A |
| 78-87% | B |
| 68-77% | C |
| 58-67% | D |
| <58 | F |

A note about academic honesty: While I am sure you have all read or have been instructed in regards to the Student Code of Conduct in regards to cheating and probably find the continual discussion tedious, I would like to note that I find cheating to not only be unethical, but insulting to me, other instructors, and your classmates.

Tentative Lab Schedule

| Exp # | Title | Date | Results Due Date |
|-------|---|-------|------------------|
| 1 | Check-in and Calibration of Pipet (p7) | 8/27 | 9/2* |
| 2a | Soda Ash Detmn (Indicator Method p9) | 9/4 | 9/15 |
| 2b | Soda Ash Detmn (Potentiometric Method p12) | 9/11 | 9/15 |
| 3 | Cation Exchange Determination of K ⁺ and H ⁺ Ions in Solution (p15) | 9/18 | 9/29 |
| 4 | Determination of Ca and Mg in Water (p19) | 9/25 | 10/6 |
| 5 | Determination of Iron in Ore (p23) | 10/2 | 10/13 |
| 6 | Potentiometric Detmn of Iron in FAS (p27) | 10/9 | 10/17 (Fri.!) |
| 7 | Microscale Determination of Ascorbic acid in Vit. C Tablets (p29) | 10/16 | 10/27 |
| 8 | Determination of Mn Spectrophotometrically | 10/23 | 11/3 |
| 9** | HPLC (p50)/AA (p40)/Cu (p37)/F ⁻ (p46) | 10/30 | 11/10 |
| 10** | HPLC (p50)/AA (p40)/Cu (p37)/F ⁻ (p46) | 11/6 | 11/17 |
| 11** | HPLC (p50)/AA (p40)/Cu (p37)/F ⁻ (p46) | 11/13 | 11/24 |
| 12** | HPLC (p50)/AA (p40)/Cu (p37)/F ⁻ (p46) | 11/20 | 12/1 |
| | Open lab (makeup day) | 12/4 | 12/13 |
| | Checkout | 12/11 | |

* This experiment will not be graded. This report and all others are due in my office at noon on the due date shown. Note: with the exception of Oct. 17, all due dates are on Mondays.

** For these experiments utilizing specialized equipment, the class will be divided into groups of 2-3 students each. Each group will perform only one of these experiments each week. The report for the given experiment will be due on the due date for that week's experiment.

Any items on this syllabus not understood need to be brought to my attention within the first two weeks of class.