Instructor: Professor M. Lei Geng  
Office: 330 IATL  Phone: 335-3167  Email: Lei-Geng@uiowa.edu

Office Hours:  
10:30-11:30 am and 3:30-4:30 pm, Tuesdays  
10:30-11:30 am and 3:30-4:30 pm, Thursdays  
or by appointment  
IATL 330 before Feb. 14, E440 CB starting on Feb. 14

Teaching Assistants:  
Sean Lehman (Lab TA: sean-lehman@uiowa.edu)  
Angie Morris (Lab TA: angie-morris@uiowa.edu)  
Emily Mrugacz (Lab TA: emily-mrugacz@uiowa.edu)  
Rachel Seurer (Lab TA: rachel-seurer@uiowa.edu)  
En Tzu Lu (Grader: entzu-lu@uiowa.edu)

TA Office Hours:  
Jan. 22 – Feb. 28: En Tzu Lu  
E244 CB  
Feb. 28 – End of the semester:  
Sean Lehman  
Angie Morris  
Emily Mrugacz  
Rachel Seurer

Text:  
Analytical Measurements course pack, University of Iowa, Spring 2013.

The course pack will be available on ICON. Please print a copy for yourself and bring it with you to the laboratories.

Reference Books:  
Daniel C. Harris, Quantitative Chemical Analysis, 8th edition, Freeman.

Lectures:  
2:00P - 4:00P TTh 104 IATL

Lecture notes are posted on ICON the day prior to the lecture. Please print a copy for yourself and bring it to the class.

Laboratory:  
Section A01: 2:30 pm - 5:20 pm, Tues. & Thurs., E440 CB  
Section A02: 9:30 am - 12:20 pm, Tues. & Thurs., E440 CB

All laboratory work is to be performed during your assigned section.

Course Website: All course materials are available on the 004:143 ICON site. Course syllabus, schedule, lab manual, lecture notes, announcements, answer keys to exams, and grades are posted on this site. Submission of course assignments – problem sets and lab reports – can also be through dropboxes on the ICON site.
Course Objective: The objective of this course is to teach the student the basic theory and practice of modern analytical chemistry. Experiments will cover quantitative chemical analysis and instrumental methods. Emphasis will be placed on analytical procedures and data analysis.

Basic Schedule: The schedule will be divided into lecture and laboratory sections. The basic principles of the experiments and the associated data analysis will be presented in the lecture section. Initial lab periods will be dedicated to analytical laboratory techniques and quantitative skills. Eight weeks of rotation experiments will follow focusing on advanced instrumental analysis.

Grading: The final grade will be based on the following point scale.

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Reports (100 points each x 10)</td>
<td>1000</td>
</tr>
<tr>
<td>Lab Performance (10 points each x 10)</td>
<td>100</td>
</tr>
<tr>
<td>Exams (150 points each x 2)</td>
<td>300</td>
</tr>
<tr>
<td>Problem sets (50 points each x 3)</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1550</strong></td>
</tr>
</tbody>
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Plus and minus grades will be given.

A report template detailing the distribution of points for each experiment will be available on the course website.

Answer keys to the labs are available with your instructors for your inspection during all office hours. Please show your graded lab reports to view the corresponding answer keys.

Laboratory Notebook: Experimental observations are to be recorded in your laboratory notebook in ink. A carbon copy of the results must be turned in to your TA at the end of the lab period. If the results are recorded in a worksheet on a computer, turn in a printed copy to your TA at the end of each lab period.

Lab Reports: A laboratory report will be required for each experiment. Each report must include a title page (which details the experiment name, your name, the names of your lab partners, and the dates of the experiments). Items to include in the report are detailed at the end of each experiment instruction and also in the report template. Reports must be well organized and easy to read and follow. Please type or print your reports in blue or black ink. Headings for text sections are strongly encouraged. Axis labels and titles are required for plots.

The laboratory report is due by 11:59 pm on the date indicated in the course schedule, if it is submitted directly into the dropboxes on the course ICON site. If you decide to submit a paper copy of the report, you need to hand it in to the laboratory TAs by 5:20 pm of the due date.

Late reports will be downgraded by 10 points per calendar day.
Regrades: Reports and exams to be regraded need to be directly turned in to Prof. Geng within a week after the initial date of return, with a short note indicating the part(s) to be regraded.

Make-Up Labs: If a student misses a lab period because of illness or some other emergency, the student may make up the lab during the scheduled make-up laboratory period. The student must submit an approved excuse to the Chemistry Center and obtain permission from the instructor in order to make-up a lab.

Only one lab may be made up during the course. The make-up labs will be held the week of May 7.

Laboratory Safety:

1. Students are required to score 100% on a safety quiz before beginning the first experiment, to ensure proper preparation for chemistry laboratories.

2. It is crucial to wear safety goggles **at all times** in chemistry laboratories to protect your eyes. Safety glasses with side-shields do not provide complete protection.

3. You may not wear open-toed shoes. This includes sandals, thongs, and any shoe with perforations.

4. For protection in case of chemical spills, legs must be covered. If shorts, short dresses and skirts are worn, lab coats are needed for protection.

5. Report any injury to your TA **immediately**.

6. Eating and drinking are not allowed in the laboratory.

7. All chemicals and sharps must be disposed of as directed. If you are not sure how to dispose of something, ask your TA.

A Word about the Date and Time of the Final Exam: (from the College of Liberal Arts and Sciences)

The final examination date and time will be announced in mid-February. Watch for an email from the Registrar containing the final exam information for this class and for all of your classes. I will announce the final examination date and time for this course at the course ICON site once it is known. Do not plan your end of the semester travel plans until the final exam schedule is made public.
# Administrative Details

## 4:143 Analytical Measurements

### Spring 2013

| Chemistry Department | Professor Mark A. Arnold  
| Office: | Chair, Department of Chemistry  
| Office: | E331 CB  
| Phone: | 335-0200  
| Email: | Mark-Arnold@uiowa.edu

### Availability of Modifications for Students with Disabilities

I would like to hear from anyone who has a disability which may require seating modifications or testing accommodations or accommodations of other class requirements, so that appropriate arrangements may be made. Please contact me during my office hours.

### Student Rights and Responsibilities

All students in the College have specific rights and responsibilities. You have the right to adjudication of any complaints you have about classroom activities or instructor actions. Information is available in the College's Student Academic Handbook (http://www.clas.uiowa.edu/students/academic_handbook/). You also have the right to expect a classroom environment that enables you to learn, including modifications if you have a disability.

Your responsibilities to this class-and to your education as a whole-include attendance and participation. **Any student who does not turn in eight or more lab reports will automatically fail the course.** You are also expected to be honest and honorable in your fulfillment of assignments and in test-taking situations (the College's policy on plagiarism and cheating is on-line in the College's Student Academic Handbook, at http://www.clas.uiowa.edu/students/academic_handbook/). You have a responsibility to the rest of the class-and to the instructor-to help create a classroom environment where all may learn. At the most basic level, this means that you will respect the other members of the class and the instructor, and treat them with the courtesy you hope to receive in turn.

### Policy on Plagiarism:

All work performed in this course is expected to be your own. In some experiments you will work in groups with one or more partners, but your report must be prepared individually. **Once you leave the laboratory, no collaborative work is permitted.** If you have questions regarding an experiment, see the instructors. In grading the assignments and lab reports, the instructors will be looking for evidence of collusion. If such evidence is found, **all parties involved will receive no credit for the assignment.** These principles also apply to the use of graded lab reports from current or previous years.

You will receive no credit if it is determined that the work you turn in is not your own.
Computer Facilities: The Chemistry Department computer facilities in W238 CB will be available for your use in the duration of the course. This room is accessible with your proxy cards. Please let me know if you do not yet have one. I will contact the Department to issue a new card to you.

Equipment Policy: All glassware and other equipment received at the beginning of the semester by a student registered for a given course and assigned a drawer/locker is the responsibility of that student. On the day of check-in, the student must insure that all the equipment required for the course is in the drawer, the glassware has no chips or cracks and that the equipment is in good working order. The Chemistry Department will replace any glassware or equipment that is defective at the time of check-in. At the end of the semester or at the time the student leaves the course, every piece of glassware and equipment must be returned to the Department without chips or cracks and in good working order. All pieces of glassware or equipment missing, broken, or not in good working order placed during the semester will be charged to the student through the University billing system after the close of the semester.

Administrative Home: The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Academic Policies Handbook.

Electronic Communication: University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondence (Operations Manual, III.15.2. Scroll down to k.11).

Accommodations for Disabilities: A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.

Academic Honesty: All CLAS students have, in essence, agreed to the College's Code of Academic Honesty: "I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS Academic Policies Handbook).

CLAS Final Examination Policies: The date and time of every final examination is announced during the fifth week of the semester; each CLAS student will receive an email from the Registrar stating the dates and times of the student's final exams. Final exams are offered only during the official final examination period. **No exams of any kind are allowed during the last week of classes.** All students should plan on being at the UI through the final examination period.

Making a Suggestion or a Complaint: Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook).
Understanding Sexual Harassment:

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather:

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.