Instructor: Professor M. Lei Geng  
330 Iowa Advanced Technology Laboratories  
Phone: (319)335-3167  
E-mail: Lei-Geng@uiowa.edu  

Office Hours: 10:30 am – 12:00 pm, MW (330 IATL)  
or by appointment  

Lectures: 1:30 – 2:20 pm, MW, C139 PC  
Labs: 2:30 – 5:20 pm, MW, E440 CB  

Textbooks: Quantitative Chemical Analysis, 9th edition (2015); Daniel C. Harris  
W. H. Freeman & Co.  
Laboratory manual provided on ICON.  

Course Web Site: http://icon.uiowa.edu; CHEM:2021:0AAA Spr17 Basic Measurements  
Course syllabus, schedule, lecture notes, announcements, answer keys to assignments  
and exams, and grades are posted on the course ICON site. The entire laboratory manual  
is available on the course web site.  

Course Objective:  
The objective of this course is for students to learn how to make basic measurements in  
the chemistry laboratory. The course will emphasize measurement theory, practical skills,  
laboratory safety, and chemistry literature. Course topics include volumetric analysis,  
spectrophotometry, chromatographic separations, mass spectrometry, standardization,  
calibration, error analysis, hypothesis testing, modeling, graphical representation,  
discussion of results, and review of literature.  

Basic Schedule:  
The course is divided into lecture and laboratory sections. Lectures will cover basic  
principles of the experiments and the associated data analysis. The laboratory will provide  
the practical setting for conducting the experiments. Initial course materials will focus on  
general procedures for analyzing and presenting data along with learning basic laboratory  
skills. Basic instrumental measurements are featured in later class assignments.  
Chemistry information and literature will be introduced and involved throughout the  
semester.  

Policy on Class Attendance:  
Students are required to attend and arrive promptly for each laboratory session. Arriving  
late to laboratory sessions will result in deduction in lab performance scores. Attendance of  
lectures is strongly encouraged.
In the case of an excusable absence (e.g. illness, mandatory religious obligation, certain University activities, or unavoidable circumstances), a completed Explanatory Statement of Absence form must be provided to the instructor in advance of foreseeable absences or within 72 hours of unforeseeable absences.

Missed laboratory sessions or exams can be made up only if the absence is excused. Lab reports for make-up laboratories will be due one week from the date the make-up lab is completed.

Grading:

The final grades in the course will be based on 10 laboratory experiments, one spreadsheet assignment, one literature review and two exams. The course components are scored as follows:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spreadsheet tutorial</td>
<td>40</td>
</tr>
<tr>
<td>1</td>
<td>Spreadsheet assignment</td>
<td>100</td>
</tr>
<tr>
<td>1</td>
<td>Safety training</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>Prelab and notebook preparation (2 points each)</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>Data recording (2 points each)</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>Laboratory performance (10 points each)</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>Lab reports (100 points each, lowest score dropped)</td>
<td>900</td>
</tr>
<tr>
<td>1</td>
<td>Literature review</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Examinations (150 points each)</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1600</strong></td>
</tr>
</tbody>
</table>

Final Grade Assignment:

The course grades will be assigned according to the following grading scales.

- **A range**: 90-100%
- **B range**: 80-90%
- **C range**: 70-80%
- **D range**: 60-70%
- **F range**: < 60%

The lower limits for letter grades may be adjusted, but will never be raised. For example, the A range for final grades may be 88-100%, but will not be 95-100%. Plus/minus grades will be assigned.

A student must turn in eight or more laboratory reports in order to pass the course. Submission of fewer than eight lab reports will automatically result in a failure in the course.
Late Submission of Assignments:
Assignments are due at 11:59 p.m. on the specified due date. Deductions will be made in grading late assignments for **10 points per calendar day** after this deadline.

Examinations:
The exams will focus on material presented in both the lecture and laboratory portions of the course. Exams 1 and 2 will focus on Experiments 1-5 and 6-10, respectively. Each exam will be cumulative relative to the statistics and data analysis material presented in the lecture portion of the course.

Regrading:
Adjustments to grades will only be considered within one week after an assignment or exam is returned. The re-grade request must be made to Prof. Geng and accompanied by a written, detailed description of the grading concern using Regrade Request Form on ICON. Regrading will involve re-assessment of the entire assignment and may increase or decrease the grade.

Laboratory Performance:
Learning how to make chemical measurements is a central component of this laboratory course. Points are assigned to each experiment to assess the laboratory performance including observation of laboratory safety, timeliness, laboratory skills, proper cleanup, and appropriate handling of chemicals and wastes.

Laboratory Notebooks:
Each student must maintain a laboratory notebook. Specific instructions for keeping notebooks will be discussed in class and provided on ICON. Points in the class grade are allocated for the completion of the notebook entries.

Lab Reports:
A lab report must be completed and turned in for each experiment. Required report contents are detailed at the end of each experiment information package. Reports must be prepared using the Microsoft Excel templates provided. All reports must be submitted via the ICON Dropbox. It is the student’s responsibility to ensure that your completed assignments are successfully submitted on time; this may be done through an email confirmation.

Laboratory Safety:
Safety is a primary concern in chemistry laboratories and you will be expected to act in a safe and professional manner. Laboratory safety practices will be discussed in detail in lectures and safety guidelines are provided on course ICON site. Eye protection is mandatory. Standard laboratory goggles are required and must be worn at all times, even if you are not actually performing an experiment. Lab coats and gloves are optional. Open toe shoes and shorts are not allowed in the lab.

Computer Usage:
Each student will have access to computers in the departmental computer facility located in W241 CB. Computers will also be available in the laboratory where the experiments are conducted (E440 CB).
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 be certain 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 that are missing, broken, or not in good working order will be charged to the student through the University billing system after the close of the semester.

Accommodations for Disabilities:
Please inform me if you have a disability which requires seating modifications, testing accommodations or accommodations of other class requirements, and we will make appropriate arrangements for you. Please contact me as soon as possible.

Policy on Plagiarism:
All work performed in this course is expected to be your own. Some laboratory experiments will be performed in groups. However, once you leave the laboratory, no collaborative work is permitted. If you have questions regarding an experiment, see the instructor or the TAs for help. We encourage you to discuss course materials with each other, but all submitted assignments should be completely your own work. 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 previous years.

You will receive no credit if it is determined that the work you turn in is not your own. For College of Liberal Arts and Sciences policies, see the CLAS Code of Academic Honesty in the Academic Policies Handbook: http://clas.uiowa.edu/students/handbook/academic-fraud-honor-code.

Department of Chemistry Administrative Details:

Department of Chemistry Office
Professor James Gloer, Departmental Executive Officer
Chemistry Building E331
(319) 335-1350

Chemistry Center
Chemistry Building E225
(319) 335-1341
College of Liberal Arts and Sciences Policies and Procedures

Administrative Home of the Course
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 at https://clas.uiowa.edu/students/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 correspondences (Operations Manual, III.15.2, k.11).

Accommodations for Disabilities
The University of Iowa is committed to providing an educational experience that is accessible to all students. A student may request academic accommodations for a disability (which includes but is not limited to mental health, attention, learning, vision, and physical or health-related conditions). A student seeking academic accommodations should first register with Student Disability Services and then meet with the course instructor privately in the instructor's office to make particular arrangements. Reasonable accommodations are established through an interactive process between the student, instructor, and SDS. See https://sds.studentlife.uiowa.edu/ for information.

Academic Honesty
All CLAS students or students taking classes offered by CLAS 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 final examination schedule for each class is announced by the Registrar generally by the fifth week of classes. 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. Once the Registrar has announced the date, time, and location of each final exam, the complete schedule will be published on the Registrar's web site and will be shared with instructors and students. It is the student's responsibility to know the date, time, and place of a final exam.

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 Office of the Sexual Misconduct Response Coordinator 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 Department of Public Safety website.

Student Classroom Behavior

The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behaviors are a violation of the University’s Code of Student Life. When disruptive activity occurs, a University instructor has the authority to determine classroom seating patterns and to request that a student exit immediately for the remainder of the period. One-day suspensions are reported to appropriate departmental, collegiate, and Student Life personnel (Office of the Vice President for Student Life and Dean of Students). The Code of Student Life can be found on the Dean of Students web site: http://dos.uiowa.edu/policies/code-of-student-life-16-17/

*These CLAS policy and procedural statements have been summarized from the web pages of the College of Liberal Arts and Sciences.