I. Logistics

Instructor
Professor Betsy Stone
Chemistry Building W376
Tel. (319) 384-1863
betsy-stone@uiowa.edu

Lecture
Location/Time
Chemistry Building E224
Monday and Wednesdays 1:30 – 2:20 PM

Laboratory
Location/Time
Chemistry Building E440
Monday and Wednesdays 2:30-5:20 PM

Instructor Office Hours
Mondays and Wednesdays 10-11:30 AM (in W376 CB)
During lab periods and by appointment

Teaching Assistant
Angie Morris
Tuesday 4:30-5:30 PM, Wednesdays 12:30-1:30 PM (in E208 CB)
angie-morris@uiowa.edu

Bimali Bandaranayake
TBA (in E208 CB)
bandaranayake-bandaranayake@uiowa.edu

II. Course Matters

Course Objective
The goal of this course is for students to develop practical skills and an understanding of the theory behind making analytical measurements in the laboratory setting. Course objectives include volumetric analysis, spectrophotometry, chromatographic separations, mass spectrometry standardization, calibration, error analysis, hypothesis testing, modeling, graphical representation, and discussion of results.

Basic Course Structure
The course is divided into lecture and laboratory sections. Lectures will cover the basic principles of the experiments, statistics, and data analysis. Laboratory experiments will provide a practical setting to conduct experiments and analyze data. Initially, the course material will focus on general procedures for
analyzing and presenting data along with learning basic laboratory skills. Chemical separations and instrumental methods will be featured in later class assignments.

Textbook
Quantitative Chemical Analysis, 8th edition (2010); Daniel C. Harris, W. H. Freeman & Co.

Course website
http://icon.uiowa.edu

Policy on Class Attendance
Students are required to attend each laboratory session. Attendance at lecture is strongly encouraged and points in the grading scheme are allocated for lecture attendance.

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. Failure to perform all laboratory experiments will result in a grade of incomplete for the course.

III. Grading

Letter Grades

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
</tr>
<tr>
<td>B</td>
<td>80-90%</td>
</tr>
<tr>
<td>C</td>
<td>70-80%</td>
</tr>
<tr>
<td>D</td>
<td>60-70%</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60%</td>
</tr>
</tbody>
</table>

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 or minus grades will be appended to letter grades.

Grading Scheme

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Grade Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Safety Training</td>
<td>20</td>
</tr>
<tr>
<td>1</td>
<td>Spreadsheet Assignment</td>
<td>45</td>
</tr>
<tr>
<td>11</td>
<td>Notebook preparation, 5 points each experiment</td>
<td>55</td>
</tr>
<tr>
<td>11</td>
<td>Laboratory performance (safety, efficiency, cleanup of work area, chemical and waste handling etc.), 10 points each experiment</td>
<td>110</td>
</tr>
<tr>
<td>5</td>
<td>Lab Reports (Exp. 1-5, 35 points each)</td>
<td>175</td>
</tr>
<tr>
<td>6</td>
<td>Lab Reports (Exp. 6-11, 50 points each, lowest score dropped)</td>
<td>250</td>
</tr>
<tr>
<td>27</td>
<td>Lecture Attendance (2 points each, reduced)</td>
<td>45</td>
</tr>
</tbody>
</table>
### Late Assignments
Assignments are due at the specified date and time. If no time is indicated, assignments must be submitted on ICON by 11:59 PM on the specified due date. Late assignments will be penalized 5 points per calendar day after this deadline.

### Re-grading
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. Stone and accompanied by a written, detailed description of the grading concern. Re-grading will involve re-assessment of the entire assignment and may increase or decrease the grade.

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

### Examinations
The exams will focus on material presented in both the lecture and laboratory portions of the course. Exams 1 and 2 will be given during the normal lecture period. Exam 3 will be given during the final exam period assigned to the class. Exams 1, 2, and 3 will focus on Experiments 1-3, 4-6, and 7-11, respectively. Each exam will be cumulative relative to the statistics and data analysis material presented in the lecture portion of the course. A summary of exam dates is given in Appendix 1.

### 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 provided Microsoft Excel templates. All reports must be submitted via the ICON dropbox.

### IV. Course Conduct

#### Laboratory Safety
Laboratory safety is a primary concern and you will be expected to act in a safe and professional manner. Proper dress is required and safety goggles must be worn at all times. Additional personal protective equipment (PPE) may be required for certain experiments. Lab coats are optional. Department of Chemistry safety rules (posted on ICON) must be followed at all times.

#### 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.

**Technology**

Each student will have access to computers in the departmental computer facility, which is located in W241 CB.

The use of cell phones and the internet during class times is prohibited. All personal devices must be silenced prior to the start of class and stowed in backpacks during laboratory.

**Exam Conduct**

**Calculators:** Programmable calculators or calculators on mobile devices are not permitted for use during exams. Students are encouraged to use a non-programmable calculator with scientific notation and logarithm capabilities. If such a calculator is not available, contact the instructor 24 hours in advance of the exam to request to borrow a permissible calculator.

**Time Limit:** Exams are limited to the allotted exam periods and time limits are strictly enforced. Please show up on time for exams and turn in your exam promptly at the end of the period when asked.

**Personal Belongings:** During exams, all personal belongings, including books, bags, notes, mobile devices, and computers, must be fully enclosed in backpacks and left at the front of the room.

**Policy on Academic Honesty**

All work performed in this course is expected to be your own. Some laboratory experiments will be performed in groups of two. However, once you leave the laboratory, each student should prepare his/her own lab report. Students are permitted and encouraged to discuss general procedures for data analysis, use of Excel, and general questions about the procedures and specific data collected. However, this should be done in the context of completing your own work. Here are some examples:

**Example 1:** Student A asks student B: “Can you show me how to change the size of the symbols on my plot?” *This type of collaboration is allowed and encouraged.*

**Example 2:** Student A asks student B: “Can I get a copy of your
spreadsheet so that I can check my answers?" This type of collaboration is not allowed.

**Example 3**: Student A asks student B: “What formula did you use to answer Question 2 on the lab report?” This type of collaboration is not allowed. This type of question should be discussed with the teaching assistant or the instructor.

If you have questions regarding an experiment, contact the instructor or teaching assistant. In grading the assignments and lab reports, the instructors will be looking for evidence of improper collaboration. 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.

### V. Administrative Details

**Chemistry Center**

Chemistry Building E225  
(319) 335-1341  
Here, you may obtain signatures to add/drop chemistry courses.

**Department of Chemistry Office**

Sarah Larsen, Departmental Executive Officer  
Chemistry Building E331  
(319) 335-1350

**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 at [http://clas.uiowa.edu/students/handbook](http://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](#)).

**Accommodating 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/](http://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 final examination schedule for each class is announced around the fifth week of the semester by the Registrar. 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 dates and times of each final exam, the complete schedule will be published on the Registrar's web site.

### 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 [Department of Public Safety website](#).

*These CLAS policy and procedural statements have been summarized from the web pages of the [College of Liberal Arts and Sciences](#) and The University of Iowa [Operations Manual](#).
Appendix 1: Basic Measurements Exam Schedule - Spring 2015

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>February 25</td>
<td>1:30-2:20 PM</td>
<td>E224 CB</td>
</tr>
<tr>
<td>Exam 2</td>
<td>April 1</td>
<td>1:30-2:20 PM</td>
<td>E224 CB</td>
</tr>
<tr>
<td>Exam 3</td>
<td>Final exam date, time, and location to be announced.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>