Table 1: Course Information

<table>
<thead>
<tr>
<th>Section</th>
<th>Days</th>
<th>Time</th>
<th>Room</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Tuesday</td>
<td>1:15 -- 5:05</td>
<td>36–308</td>
<td>Dr. Teresa Birdwhistell</td>
</tr>
<tr>
<td>02</td>
<td>Wednesday</td>
<td>1:00 -- 4:50</td>
<td>36–308</td>
<td>Dr. Guangdi Wang</td>
</tr>
<tr>
<td>03</td>
<td>Thursday</td>
<td>1:15 -- 5:05</td>
<td>36–308</td>
<td>Dr. Gloria Magee</td>
</tr>
</tbody>
</table>

Office Hours: To be announced by the individual instructors during the first week of lab.

Class Hours: Students are expected to attend all scheduled four-hour laboratory periods. They are responsible for any material covered or announcements made in their absence. Students will not be allowed to work at any time other than their own scheduled lab period.

Course Description: Theory and techniques of chemical analysis including evaluation of data, titrimetric, potentiometric, spectrophotometric, and gas chromatographic methods will be explored.

Corequisite: CHEM 3210. Prerequisites: CHEM 1010/1011L and 1020/1021L.

Course Objectives: 1) to develop proficiency in the techniques by which various chemical substances are analyzed quantitatively, such that the analyses will be both accurate and precise; 2) to know and understand the chemical reactions and the physical principles underlying the analyses; 3) to become familiar with and proficient in the use of the instruments and apparatus employed in such analyses; 4) to become organized and efficient in carrying out the analyses, and 5) to learn to work safely in the laboratory.


Materials Required: safety goggles, lab coat, towel, and laboratory notebook.

Course Requirements: All scheduled lab experiments are to be completed. Any student who fails to complete the experiments and submit the required reports will receive an automatic grade of F for the course. There will be no exceptions to this requirement.

Course Evaluation:

1. Lab Reports consist of the completed report form and a typed discussion. The report form will be available to download from the course Blackboard site. The discussion should present in concise, well-developed paragraphs the results of the experiment, the accuracy and precision of the experimental results, the possible errors and/or limitations of the procedure, and how these may have affected the results. The discussion must be typed. Guidelines are found in the lab manual.
2. Reports are due at the beginning of the next lab period following the completion of the experiment, unless otherwise specified. Reports that are submitted late will receive penalties of 5 points per day that the report is late. Reports will not be accepted more than one week late. There will be no exceptions.

3. Quizzes will be given at the beginning of the lab period. These quizzes will generally be based on: 1) the lab experiment just completed; 2) the lab experiment just begun; and 3) any other relevant or assigned material. Study questions for the experiments and the quizzes are found in the lab manual. A student who comes late on days when a quiz is scheduled will forfeit the time lost due to tardiness.

4. Lab Notebook consists of a permanently bound book with title, date, and objective. The notebook must be brought to the lab each period.

5. All data must be recorded directly in the lab notebook in ink. Calculations are to be done on the left side of the page, opposite the data. The results of the calculations should be summarized neatly for future reference. All information and calculations are kept in the notebook and not scattered on notebook paper. At the end of each lab period, the data page must be initialed by your instructor and the tear-out carbon copy submitted.

6. The notebook will be turned in at the Final Exam and graded.

7. Lab Technique and Deportment includes cooperation in clean-up duties, observation of safety rules, overall lab techniques and behavior in the lab. Violations may result in 5 or 10 point penalties, and repeated violations may result in ejection from the lab or F in the course.

8. The Final Exam is a comprehensive, written exam.

9. Cheating is copying data and/or calculations, copying on quizzes, sharing solutions or lab duties. All parties involved will receive a zero for the experiment. Multiple violations will result in an F and possible disciplinary action by the University.

11. Grade:  

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Lab Reports (75 points each)</td>
<td>600</td>
<td>A 90-100%</td>
</tr>
<tr>
<td>7 quizzes (25 points each)</td>
<td>175</td>
<td>B 75-89%</td>
</tr>
<tr>
<td>lab notebook</td>
<td>50</td>
<td>C 60-74%</td>
</tr>
<tr>
<td>technique &amp; deportment</td>
<td>50</td>
<td>D 50-59%</td>
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<tr>
<td>final exam</td>
<td>100</td>
<td>F 0-49%</td>
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<tr>
<td>TOTAL POSSIBLE POINTS</td>
<td>975</td>
<td></td>
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Fall 2009 Quant. Lab Schedule

Aug 25 - 27  Introduction and Lab Check In
EXP 1: Penny Statistics

Sept 1 - 3  EXCEL Statistical Analysis, Library room 532A

Sept 8 - 10  EXP 2: Calibration of a 25 mL Buret and 10 mL Pipet
EXP 3: PREP - Preparation of NaOH;
QUIZ 1; REPORT 1 DUE

Sept 15 - 17  EXP 3: Standardization of NaOH
QUIZ 2

Sept 22 - 24  EXP 3: Determination of %KHP in an Unknown Sample
REPORT 2 DUE

Sept 29 – Oct 1  EXP 4: Potentiometric Titration of a Weak Acid
QUIZ 3; REPORT 3 DUE

Oct 6 – 8  Prep of Solutions for EXP 5 & 6
QUIZ 4; REPORT 4 DUE

Oct 13 - 15  Fall Break

Oct 20 - 22  EXP 5: Iodometric Titration of Vitamin C

Oct 27 – 29  EXP 6: EDTA Titration for Water Hardness
QUIZ 5; REPORT 5 DUE

Nov 3 - 5  EXP 7: Spectrophotometric Determination of Fe
QUIZ 6; REPORT 6 DUE

Nov 10 - 12  EXP 8: Gas Chromatographic Determination of Cyclohexanone and Acetophenone with and without an Internal Standard
QUIZ 7; REPORT 7 DUE

Nov 17 - 19  EXP 8 continued

Nov 25 - 27  Thanksgiving Holiday

Dec 1 - 3  FINAL EXAM & CHECK OUT
REPORT 8 DUE; LAB NOTEBOOK DUE