Chemistry 2212  
Quantitative Analysis  
Spring 2002

<table>
<thead>
<tr>
<th>Prof. Sarah Green</th>
<th>Class Hours: Lecture: 2 PM MWF, 19-106</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lab Section 1: 9-12 TR, 19-708</td>
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<tr>
<td></td>
<td>Lab Section 2: 2-5 TR, 19-708</td>
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<tr>
<td>Web site: link via Chemistry dpt course pages.</td>
<td>Office hours: 3 MW, or by arrangement</td>
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The solution manual for this text should be available in the bookstore if you wish to purchase it.

Resource materials: Solved exams and quizzes from a previous edition of this course will be available on library reserve and/or web. These are intended to indicate the level and type of question your lecturer is likely to use, but no guarantee is made that quizzes this term will be in any way identical.

The laboratory portion of the course consists of experiments described in the lab handouts. A separate laboratory syllabus will be provided.

Evaluation:

<table>
<thead>
<tr>
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<th>Points</th>
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<tbody>
<tr>
<td>Quizzes (best 6 out of 7) 40pts@</td>
<td>240</td>
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<tr>
<td>Final Exam:</td>
<td>200</td>
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<tr>
<td>homework (spreadsheets, 5)</td>
<td>100</td>
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A 20-point quiz will be given approximately every alternate Wednesday this term. The lowest quiz score will be dropped. A missed quiz will be graded as a zero and can be used as the score to drop. Any topic previously covered in the course is fair game for a quiz question. The chemistry relevant to laboratory work may appear on quizzes and the final exam.

All work must be shown on the quizzes.  
However, only the answers will be graded.

For many of the quizzes, the use of calculators will not be allowed. The final problem set up and a reasonable estimate of the answer will be the answers to be graded in these quizzes.

The comprehensive final exam will be given at the time determined by the scheduling office.

Grading: Straight scale (A, 90%; B, 80%, etc.) The lecture and laboratory grades will be scaled such that they contribute equally to your final grade.

Assignments for the term are given below. Reading from the text and problems are assigned for your benefit as practice for exams, not to be graded. Note the Summary at the end of each chapter. It is strongly suggested that you test your knowledge by trying Exercises and Problems at the end of each chapter in addition to those assigned below; you should also review the Terms To Understand listed for each chapter. Note that solutions to selected Problems are given in the back of the text.
<table>
<thead>
<tr>
<th>Week of</th>
<th>Read</th>
<th>Suggested problems</th>
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</table>
| Jan 14  | Chapter 0 - The Analytical Process  
Chapter 1 - Measurements  
Chapter 2 - Tools of the Trade  
Chapter 6 - Review of Equilibrium Calculations  
Chapter 3 - Experimental Error | p64: Exercises 3A-3C  
P65: Problems 3, 5-7,13,14 |
| Jan 21  | Chapter 4 - Statistics (omit sect 4-6)  
Attn: Box 4-1, p81 | p86: Exercises 4A-D  
P87: Problems 3,12,15,16,  
18-20,22 |
| Jan 28  | Chapter 19 - Spectrophotometry (Sec 1-4)  
Attn: Box 19-1, p. 515  
Chapter 5 - Calibration Methods | p535: Exercises 19A-D  
P537: Problems 6,11,13,16,19 |
| Feb 4, 11 | Chapter 10 - Acid-Base Equilibria | p107: Exercises 5A-C  
p108: Problems 1,7,8,16-19 |
| Feb 18  | Chapter 12 - Acid-Base Titrations  
Sec 1-3,5-7 | p234: Exercises 10 B,D,H,I  
p235: Problems 6-8,11,13,  
18,21,22,30,38 |
| Feb 25  | Diprotic acids/bases: equilibria  
Sec 11-1 through 11-5  
Diprotic acids/bases: titration curves  
Sec 12-4 | p298: Exercises 12A,B,C,F,G  
p299: Problems 2,6,14,17,15,18 |
| Mar 4  | Spring Break | p259: Exercises 11A,B,C  
p298: Exercises 12D,E  
Problems 23-26,29 |
| Mar 11  | Chapter 13 - EDTA Titrations | p329: Exercises 13A,B,C  
p330: Problems 5,6,31,33 |
| Mar 18  | Chapter 8 - Activity | p186: Exercises 8A-E  
p187: Problems 3,5,19,20 |
| Mar 25  | Chapter 14 - Electrochemical equilibria | p364: Exercises 14A-D,H,I  
p366: Problems 5,8-12,16,25 |
| Apr 1   | Chapter 15 - Potentiometry | p405: Exercises 15A-C,E  
p406: Problems 2,3,6-10,13,17 |
| Apr 8   | Chapter 16 - Redox Titrations | p436: Exercises 16A,B  
p437: Problems 2,3,4 |
| Apr 15  | Chapter 17 - Electrogravimetric and  
Coulometric Analysis | p463: Exercises 17A-C  
p465: Problems 8,9,16-19,26-28 |
| Apr 22  | Chapter 18 - Voltammetry | |
| Apr 29  | Overflow | |