CHEMISTRY 331
CHEMICAL METHODS OF ANALYSIS

Fall 2006, TR 8:00 – 9:15 AM, W 1:00 – 5:00 PM

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Office Hours: By appointment

Textbook: Daniel C. Harris, "Quantitative Chemical Analysis", 7th ed.

Grading

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<th>Component</th>
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<tr>
<td>Homework</td>
<td>10 %</td>
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<td>Semester Exams and Quizzes</td>
<td>40 %</td>
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<td>Final Exam</td>
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<td>Lab</td>
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Lecture Topics and Approximate Exam Schedule

Treatment of Analytical Data
Chemical Equilibria and Solubility
Read chapters 1-5

Quiz – September 21, 2006

Volumetric Analysis
Activity and Systematic Equilibrium Calculations
Acid-Base Equilibria
Spectrophotometric Analysis
Read chapter 7
Read chapters 8 & 9
Read chapter 10 & 11
Read chapter 18, 19

1st Exam -- October 19, 2006

Titrations and Distribution Functions
Complex Formation
Fundamentals of Electrochemistry
Read chapters 12
Read chapter 13
Read chapter 14

2nd Exam -- November 30, 2006

Potentiometry and Redox Methods
Electrogravimetric, Coulometric and Voltammetric Analysis
Read chapters 15 & 16
Read chapter 17

Final Exam
Homework

The Homework is a very important component of the course. Homework will be assigned at the end of most lectures. All homework assignments should be completed for the next class period. Answers to the homework are provided in the back of the book. Your job is to work out the solutions that yield the answers. All homework will be graded and should reflect your own knowledge of the problem.

Many problems will be best solved using a computer program/spreadsheet. Include a hard copy of the results in your homework assignment and also place the program/spreadsheet used to solve the problem into your folder on the file server. You should have your own backup copy of your homework!! It is probable that you will be allowed to use some of your computer programs to solve problems during hour exams.

Prelab assignments

Prelab exercises are an important component of the laboratory. The prelabs familiarize you with the current week’s experiment making you more efficient in the laboratory and often improving your results. Prelab assignments are due in class on the Tuesday before the Wednesday lab. You can not start the lab until you have correctly completed the prelab assignment.

Academic Honesty

All students are expected to do their own work. In some cases I will ask you to work on experiments in small groups. I expect and encourage you to discuss the procedures and results of these experiments with your fellow classmates. It is also acceptable to work together on difficult homework assignments. However, the final lab reports and completed homework assignments should be your own work. This means that you should be able to explain in detail all of the steps and procedures used to solve a particular homework problem or lab assignment. All spreadsheets should be your own work, including the equations! If you work with other students on homework or lab assignments you should acknowledge this collaboration by listing their names on the top of you assignment.

Attendance Policy

The attendance and exam policy for the Department of Chemistry is posted on our WEB page (www.colby.edu/chemistry).