Chemistry 232 - Spring 2005

Textbook

Lecture Material, and Essential Reading.
The material that is presented in both the lecture and laboratory parts of the course defines the details and direction of the course content. In general, you should consider that you should be studying the material covered in lecture. However, you will achieve at a higher level in the course, if you read, and learn, beyond the confines of the lecture material. In addition, excellence may be achieved if you read other textbooks and articles on quantitative analytical chemistry, and practice a large number of problems. It is important to note that for statistical and other calculations, there is useful material on the web material, on the publisher’s web site, that accompanies the textbook.

Lecture Sequence
Approximate number of lectures in parentheses – numbers of lectures may vary. Later parts of the sequence may not be covered depending on progress in the semester. Parts 5 and 6 may not be covered.

Part 1. Introduction to Quantitative Analytical Chemistry (2)
Read Chapters 0, 1 and 3.

Part 2. Statistical Handling of Data and Methods of Calibration (6)
Read Chapters 4 and 5

Part 3. Analysis by Titration (8)
Acid Base Equilibria, and Titration Curves.  Read Chapters 6, 7, 10, 11, 12
Complexometric Titrations.  Read Chapter 13
Redox Titrations, and Electrode Potential.  Read Chapters 14, 15, 16

Part 4. Spectrometry and Spectrophotometry (7)
Molecular Spectrometry.  Read Chapter 19-21
Atomic Spectrometry.  Read Chapter 22
Sample Preparation. Read Chapter 28

Part 5. Chromatography (4) (may not be covered)
Chromatography. Read Chapters 23-26

Part 6. Gravimetric Analysis (1) (may not be covered)
Read Chapter 27
Examination Dates, and Times
You will not usually be tested on material covered in a previous examination, except for quantitative aspects of statistical analysis of data, concentration units, and concepts of calibration. All examinations will be in class. The midterm will last over two classes. The final examination may have a quiz-type cumulative section and a section that covers material presented after the third examination. In addition, these details may change depending on the progress of the class during the semester. The teaching assistants will provide help sessions immediately before examinations, upon request by the class. Quizzes and homework may be given at any time.

First Examination

Midterm Examination
Note that Spring Recess is March 08-12
Tues. March 1, 2005, Part 1 during class, Chemistry T309
Thur. March 3, 2005, Part 2 during class, Chemistry T309

Third Examination
Thurs. April 07, 2005, Chemistry T309

Final Examination
May 6, 2005, 1 pm. Chemistry T309

Homework
Homework will be assigned, approximately once every two weeks, and you will be asked to hand it in for grading. However, this homework does not represent the full extent of the studying that is expected of you. In addition, you should attempt to do all the relevant problems at the end of each assigned chapter in Harris, as we progress through the semester. The solutions to the problems are in the “Solutions Manual” for Harris. If you study the Harris problems competently you should have less difficulty with examinations.

Reliance on the biweekly homework assignments for practice of problems will not be enough to allow you to do well in the examinations. You must set you own goals for studying, or risk poor examination performance. If class attendance is insufficient, random homework will be set with very short lead times for completion.

Grading
The course grade will be based 50% on the examinations, quizzes, and graded homework assignments, 45% on the laboratory reports, and 5% on the laboratory notebook. The 50% that constitutes the examinations and homework assignments will be structured such that the quizzes and graded homework assignments shall constitute about 10% of the course grade, while the four examinations will each constitute 10% of the course grade, each.

Professor Robert G. Michel; Chemistry A319
Preferred method of communication for appointments, discussion of course work, etc. is by E-mail: robert.g.michel@uconn.edu, OR rgmichel@mac.com. You can use either of these e-mail addresses. They both work, and you don’t need to send e-mail to multiple addresses. E-mail will be answered 8:00 am to 8:30 pm most days.
Office hours are Tuesday and Thursday afternoons, after lecture, and finishing at 3:30 PM. Otherwise, you can come to Chemistry A319 anytime. If you wish to be sure of a meeting you should make an appointment in advance by e-mail. For emergencies, you may phone at 486 3143.