

ANALYTICAL CHEMISTRY COURSE SYLLABUS – Spring 2011

Course Description: An introduction to the theory and practice of quantitative analysis.
Lecture, two hours; laboratory, three or four hours.
Prereq: CHE 107 and 115.

Course Information:

Lectures: Tuesday and Thursday, 9:30-10:20 a.m., CP-222
Credits: 3 cr (Secs. 1 & 2) or 4 cr (Secs. 3 & 4)
Textbook: D. A. Skoog, D. M. West, F. J. Holler, and S. R. Crouch: *Analytical Chemistry: An Introduction*, 7th Edition, Saunders College Publishing, 1999.
Laboratory: Monday and Wednesday, 1:00-5:00 pm, CP-208 and CP-236. Go to CP 208 first. The first lab meetings will be on Monday, January 24 or Wednesday, January 12 for the Monday (Secs. 1 & 3) or Wednesday (Secs. 2 & 4) Laboratories, respectively.

Laboratory Experiments: Complete copies of the laboratory handouts are available on the course Web site or on a CD (on request).
Go to <http://www.chem.uky.edu/courses/che226/welcome.html>

Instructor:

- Dr. Yinan Wei
- **Office:** 305 Chemistry-Physics Building
 - **Office Hours:** Tuesday & Thursday 10:30 am – 12:00 noon or by appointment
(send an email to arrange meeting)
 - **E-mail:** yinan.wei@uky.edu
(All emails must have **226** in the Subject header line)
 - **Phone:** 859-257-7085

Teaching Assistants

	Pauline Stratman	Sanja Trajkovic	Brent Ferrell
Office	Sander's Brown Rm 125	ACCTEC 065	CP-315
Phone	859-257-1412 x 247		
E-mail	Pauline.Stratman@uky.edu	Sanja.trajkovic@uky.edu	Bferrell3@gmail.com
Office Hours	Tue, 1-2 pm, Thr. 2-3 pm, Fri. 2-3 pm	Thr./Fri. 10 am	Wed./Fri. 10 am

Tentative Lecture Coverage:

Topics	Chapters
Introduction	1
Units, Concentration and Stoichiometry	3
Experimental Error	5, 6
Statistical Analysis: Evaluating the Data	7
Gravimetric Analysis	8
Chemical Equilibrium Basics	4
Electrolyte Effects	9
Equilibria in Complex Systems	10
Acid-Base Titrations	11, 12, 13, 14
Complexation and Precipitation Titrations	15
Spectrochemical Analysis	21, 22, 23
Separation Methods	24, 25, 26
Electrochemistry Introduction	16
Electrode Potentials	17
Oxidation/Reduction Titrations	18
Potentiometry	19

Examinations:

	Date	Time
Exam I	Thursday	Feb. 10, 9:30 am
Exam II	Tuesday	Mar. 22, 9:30 am
Exam III	Thursday	Apr. 21, 9:30 am
Final Exam	Tuesday	May 03, 8:00 am

The Final Exam is comprehensive.

Grading Procedure and Scale:

Component	3 Credits	4 Credits
Best 2 of 3 hour Exams	35%	30%
Final Exam	27%	20%
Laboratory	33%	45%
Excel Assignments	5%	5%
Total	100%	100%

Grade Final Average:

A	89.50 – 100.0
B	79.50 – 89.49
C	69.50 – 79.49
D	59.50 – 69.49
E	59.49 and Below

A student who scores 90.00% or better on each of the three mid-term exams will be exempted from the Final Exam. The average of the three mid-term Exams will then be used for the total percentage for all examinations in the course.

Suggested Homework:

Suggested homework problems will be assigned as the material is covered. Homework will not be collected and graded, but the bulk of the Exams will reflect the material in the assigned problems.

E-mail:

The instructor will send you important information, files, reminders, nags, etc., during the course of the semester. You should check your e-mail at least daily. We will send e-mails to the “preferred address” that you provided at the beginning of the semester. We will put the course number, 226, in the Subject header of all emails sent to you. This will help you filter our email into a separate mailbox, if your software has such a feature. In turn, you **must include 226 someplace in the Subject header of all email you send to the instructors**. I probably get 40 spam emails a day that get through my spam filter system. Putting 226 in the subject header will filter your important email to my course mailbox, so that I can tend to it as soon as possible.

Previous 226 Exams:

Several semesters of past CHE 226 exams are available on the course Website for you to peruse and self-test. Answers are not provided on the old exams. There are many, many problems in the textbook that do have answers. Use these to “get up to speed”. If you have any questions or are confused about any of the problems on the old exams, feel free to ask one of the instructors.

Make-up Exams:

No make-up examinations will be given regardless of the reason for missing an exam. Dropping the lowest examination grade is designed to compensate for this, among other reasons.

Calculators:

Use of a calculator during examinations is permitted as long as they are not shared between students. The latter will be considered as cheating. Programmable calculators must have their memories cleared prior to use in an exam. In any event, test problems are usually designed so as to minimize arithmetic. Ordinary arithmetic errors will be penalized very little. Points will be deducted if an improper number of significant figures is used in the final arithmetic answer.

Important Dates:

Wednesday, Jan. 12	First day of Classes
Wednesday, Jan. 19	Last day to ADD a class for the Spring 2011 Semester.
Wednesday, Feb. 2	Last day to DROP a course without it appearing on your transcript. Last day to change grading option (P/F, Credit/Audit).
Thursday, Feb. 10	1st EXAM
Monday, Mar. 7	Midterm of 2010 Fall Semester
Tuesday, Mar. 22	2nd EXAM
Monday-Saturday, Mar. 14-19	Spring break
Friday, Apr. 1	Last day to WITHDRAW from a course with a W. After this date, can withdraw only for “urgent non-academic reasons”.
Wednesday, Apr. 20	Last day the CHE 226 Laboratory will be open. All students must formally check out of the Laboratory on or before this date.
Thursday, Apr. 21	3rd EXAM
Friday, Apr. 29	Last day of classes. All CHE 226 laboratory reports must be submitted by 5:00 pm.
Tuesday, May 3	FINAL EXAM, 8:00 A.M.

Dropping the Course:

A student can DROP the course up to September 15 without it appearing on the transcript, and to WITHDRAW from the course up to November 30 with a W. After November 30, a student cannot WITHDRAW from a course except for urgent reasons related to extended illness or equivalent *non-academic* reasons, and then only with the approval of the Dean of his or her College. The instructor does not make this decision. **You MUST formally check out of the laboratory as soon as possible in the process of dropping or withdrawing from the course or simply abandoning it** in order to ensure that (a) all laboratory equipment issued to you is accounted for and not damaged, (b) you are not charged penalty fees by the Department. If you have not checked out of the Laboratory by the time final grades for the course are due at the Registrar, you have not completed the course and you will be assigned an incomplete grade, which will automatically convert to an E after a year unless a regular letter grade replaces it. In addition, if you do not check out in a timely manner and the Department personnel have to go through your locker, you will incur a \$50 fee, in addition to the cost of any damaged, broken, or missing equipment. If necessary, the Department can ask that a Registration Stop be placed on your official record, which will prevent any further academic actions until this financial matter is cleared. Officially checking into the laboratory constitutes acceptance of these terms.

Classroom Manners:

In addition to scholarly demeanor, common old fashioned manners are expected of everyone involved in CHE 226, including the instructors. **Arrive on time for all CHE 226 lectures and labs.** It is disruptive to and disrespectful of your fellow students who are trying to follow the lecture and learn the material, as well as to the Instructor, when people arrive late. If you

don't wish to attend one or more lectures or lab sessions, that may not be wise, but it is your choice. If you do attend, be on time. If tardiness becomes a problem, the instructor will simply lock the doors at 9:30. Finally, unless your mother cleans up after you here at UK, please clean up after yourself in the lecture room so that the physical surroundings remain appropriate for scholarly activities. In the laboratory, cleaning up properly will be part of your grade.

Cell Phones:

If you carry a cell phone or beeper, double-check **before the class starts** to ensure that it is completely off or in silent mode. *If a cell phone or beeper goes off during a lecture or lab, it shall be turned over to the instructor immediately.* It will be returned at the end of the period... the *first time* this happens; increasingly more drastic measures will result for any additional transgressions.

Academic Accommodations:

If you have a documented disability that requires academic accommodations, please see me as soon as possible. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, jkarnes@uky.edu) for coordination of campus disability services available to students with disabilities. We can then collaborate on the best solution.

Academic Dishonesty:

You are hereby notified that the Department of Chemistry considers any type of academic dishonesty – cheating, plagiarism, representing the work of others as your own, “dry labbing”, etc – a very serious offense and we will respond appropriately in the event of any apparent academic dishonesty.

The minimum (*and required*) penalty for proven academic dishonesty (cheating) in any form or manner will result in an automatic grade of a zero for that assignment – for a student's first offense at the University. Instructors are not permitted the option of “letting it go” or making some informal agreement. Additional penalties may be imposed for a first offense depending on the degree of severity of the transgression and other factors. These can include extra work, reduced letter grade, or a failure of the course. For a penalty less severe than a failure of the course, a “letter of warning” for a “minor offense” is placed in the student's official record (which is destroyed on graduation if there are no subsequent offenses). The minimum penalty for another offense subsequent to a “minor” offense is failure of the course (which is subject to the Repeat Option).

The minimum penalty for an offense subsequent to a “major” offense is suspension. A penalty more severe than failure of the course may be imposed for a first or second offense, subject to approval of the Department Chair and the Dean.

These new rules and the rights of appeal are rather detailed and complicated.

Additional information about academic dishonesty and other student-related matters is available from several sources:

- The current version of the Student Rights and Responsibilities manual (the most pertinent to academic dishonesty are in Sections 6.3).
<http://www.uky.edu/StudentAffairs/Code/part2.html>
- See the home page for the Office of Academic Ombud Services for a definition of plagiarism, how to avoid plagiarism and UK's new academic offense policy.
<http://www.uky.edu/ombud>
- A link to a paper "Plagiarism: What is it?" may be found at the Ombud Web site.
<http://www.uky.edu/ombud/Plagiarism.pdf>
- The Ombud Web site also includes a link to a Prentice Hall Companion Web site "Understanding Plagiarism", which includes brief quizzes on related topics.
http://wps.prenhall.com/hss_understand_plagiarism_1/0,6622,427064-,00.html
- Dr Grossman has also provided a summary of the new rules on his web site.
<http://www.chem.uky.edu/courses/common/plagiarism.html>

Chemistry instructors and the Department of Chemistry will carefully follow the procedures required of us.

"Dry Labbing" or "Pencil Titrating" are terms that describe the act of making up or falsifying laboratory data. This is clearly a form of academic dishonesty, cheating.

In a nutshell, plagiarism is defined as taking the work, the words, the ideas of others and presenting them as your own without proper scholarly attribution. This could be a proper reference or citation to actual quotation marks around any work taken verbatim that is much longer than a short phrase. Although students will often work in pairs and share data, and talk informally about the experiment and their results,

Each student must prepare and write his or her own laboratory report completely independently.

You must compose your lab reports in your own words, not simply copy the text directly from the laboratory handout.

If you have any questions at all about what may constitute academic dishonesty, "cheating", or plagiarism in the course, please ask the Instructor and/or the Teaching Assistants BEFORE you proceed. It is wiser to err on the side of caution.

Revised January, 2011

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