

Chemistry 329 Fall 2015 (Jin)

SYLLABUS

Lecture time: MW 11:00 – 11:50 AM	Lecture location: Chem B371
Lab time: MW 1:20 -5:25 PM	Lab location: Chem 2331, 2341
Lab time (section 615): MF 1:20-5:25 PM	Lab location: Chem 2365
Disc time: F 11:00 - 11:50 AM	Disc location: Chem B383, B379, B387, 2385, Noland 539

Instructor:

Prof. <i>Song Jin</i>	Office hours: M 9:50 – 10:50 AM
office: Chem 3363	F 12 – 1 PM
phone: 2-1562	or by appt. (Chem 3363)
e-mail: jin@chem.wisc.edu (Please include “Chem 329” in the subject line.)	
Course webpage: https://learnuw.wisc.edu	

Textbook: Harris, Daniel C. *“Quantitative Chemical Analysis”* 9th ed.

Other Required Material: Lab manual (available in the Mills Street lobby of Chemistry building), Bound laboratory notebook with carbon copy, Safety goggles

Grades:

The point distribution is as follows:

Exams:	3 exams x 130 pts	=	390 pts.
Homework:	8 assignments x 30 pts	=	240 pts.
Laboratory:	labs (13x 14pts), pre-lab quizzes (13x 6pts) project (80 pts)	lab total =	340 pts.
TA evaluation		=	30 pts
<i>Total:</i>			<i>1000 pts.</i>

The intended grading scale is:

A	890-1000
A/B	840-889
B	790-839
B/C	740-789
C	680-739
D	600-679
F	<599

However, the scale may be shifted to reflect overall class performance. You will be updated changes to the scale twice during the semester.

Exams:

There will be three exams this semester. The exams are not cumulative; however, most of the material is inherently pedagogical. Therefore, in general you must have a firm understanding of previous material in order to fully comprehend new material. If you have conflicts, please arrange makeup exam sessions with your TA in advance.

Exam I:	October 12, Monday 2-4 PM (7 th week)
Exam II:	November 23, Monday 2-4 PM (13 th week)
Exam III (“Final Exam”):	December 17, Thursday, 5:05 – 7:05 PM

Homework:

You may work on these assignments as a group, but you must turn in your own homework. Be sure to note that the homework assignments directly reflect exam material. If you can not work out the problems yourself after the completion of the homework, you will not gain the *proficiency* required to solve the problems on the exams within the timeframe of the exams. **Homework will be usually due on Mondays at the beginning of lab sessions. No late assignments are accepted. This is a strict deadline.**

Course Outline:

The tentative course schedule is as follows:

Week	Lecture Topics	Book Chapters
1 (Sept 2)	Intro	0,1
2 (Sept 7)	Units, Errors	3,4
3 (Sept 14)	Statistics	4
4 (Sept 21)	Statistics, Spectrophotometry	18
5 (Sept 28)	Spectrophotometry	18, 19, 20
6 (Oct 5)	Equilibria	6, 8
7 (Oct 12) (Exam I)	Acid-base	9
8 (Oct 19)	Acid-Base	9, 10
9 (Oct 26)	Acid-base titrations, Project Intro	7, 11
10 (Nov 2)	Titration, Systematic treatment	11, 8
11 (Nov 9)	Activity, EDTA	13, 12
12 (Nov 16)	Redox, Electrochemistry	14
13 (Nov 23) (Exam II)	Electrochemistry	15
14 (Nov 30)	Chromatography	23
15 (Dec 7)	Chromatography, Review	24,25

This schedule will change as we go along, depending on how we do in these lectures. You should also note that textbook chapters 0, 2, and 27 are devoted to analytical laboratory practices. Although you will not be directly tested on these chapters, you may find information in these chapters that will boost your performance in the laboratory.

ACADEMIC MISCONDUCT:

It is expected that all students will conduct themselves with honesty, integrity, and professionalism. Any student caught cheating on an exam will receive an F in the course. This penalty includes incidents such as looking at another student's paper during an exam or altering an exam after it has been graded and then submitting it for re-grading. Any student caught cheating on a lab or homework assignment (for instance, copying another person's work or fabricating data) will receive a zero for that assignment. A second infraction will result in an F for the course. More information on what constitutes academic misconduct and UW policies on handling misconduct can be found at:

<http://www.wisc.edu/students/saja/misconduct/UWS14.html>.

Laboratory:

The laboratory counts for a total of 34% towards your final grade and is divided into three main categories: standard experiments, lab quizzes, and project.

- There will be 13 graded standard experiments, and your grade will be based on the accuracy and precision of your results. **The results from these experiments are to be turned in no later than the start of the laboratory period following the completion of the experiment.** You will lose 4 pts/day if the result is turned in late.
- The primary goal of the pre-lab quizzes is to prompt you to prepare for the labs beforehand and to test your knowledge and understanding of the concepts behind the standard experiments. Overall, being “prepared” for a lab means you are familiar with the: overall concepts and goals of the experiment, methods used in the experiment to accomplish the goals, procedure (enough so that you understand the impact of each step on the chemistry and the calculations, e.g. dilutions, stoichiometry, etc), and calculations (enough so that you understand how to perform the calculation required for the experiment given a set of raw data). You can have two attempts at each quiz, the higher grade will be the final grade. It is advised that you make your first attempt for each quiz at least 1 day before the lab so that you have time to ask questions before your second attempt, in case you encounter any difficulties. **The quiz for each lab becomes unavailable when that lab starts.**
- The lab project could be the most challenging and also most rewarding part of this course. We will discuss the project in more details as we go into the semester.

Week	Date	611 Yongping Fu	612 Lichen Xiu	613 Dominic Colosi	614 Kyle Czech	615 Dan Kohler (2nd lab on Fri)
1	31-Aug 2-Sep	Classes begin Wednesday September 2				
		Check-in/Weighing	Check-in/Weighing	Check-in/Weighing	Check-in/Weighing	Check-in/Weighing
2	7-Sep 9-Sep	Labor Day -- No Lab				
		Volumetric Apparatus	Volumetric Apparatus	Volumetric Apparatus	Volumetric Apparatus	Volumetric Apparatus
3	14-Sep 16-Sep	Standardization of HCl Standardization of NaOH	Standardization of HCl Standardization of NaOH	Standardization of HCl Standardization of NaOH	Standardization of HCl Standardization of NaOH	Standardization of HCl Standardization of NaOH
4	21-Sep 23-Sep	Determination of % KHP Spectrophotometric Det. Of Fe	Determination of % KHP Spectrophotometric Det. Of Fe	Determination of % KHP Spectrophotometric Det. Of Fe	Determination of % KHP Spectrophotometric Det. Of Fe	Determination of % KHP Spectrophotometric Det. Of Fe
5	28-Sep 30-Sep	Chemical Oxygen Demand Hardness of Water	Hardness of Water Chemical Oxygen Demand	Chemical Oxygen Demand Hardness of Water	Hardness of Water Chemical Oxygen Demand	Hardness of Water Chemical Oxygen Demand
6	5-Oct 7-Oct	Practice with ImageJ Software Finish labs	Practice with ImageJ Software Finish labs	Practice with ImageJ Software Finish labs	Practice with ImageJ Software Finish labs	Practice with ImageJ Software Finish labs
7	12-Oct 14-Oct	Exam 1				
		A Study of Fluorescein	A Study of Fluorescein	A Study of Fluorescein	A Study of Fluorescein	A Study of Fluorescein
8	19-Oct 21-Oct	ID of an Unknown Weak Acid Adventures with Buffers	ID of an Unknown Weak Acid Adventures with Buffers	ID of an Unknown Weak Acid Adventures with Buffers	ID of an Unknown Weak Acid Adventures with Buffers	ID of an Unknown Weak Acid Adventures with Buffers
9	26-Oct 28-Oct	Bromocresol Green Project Introduction	Bromocresol Green Project Introduction	Bromocresol Green Project Introduction	Bromocresol Green Project Introduction	Bromocresol Green Project Introduction
10	2-Nov 4-Nov	Project Project	Project Project	Project Project	Project Project	Project Project
11	9-Nov 11-Nov	Project Project	Project Project	Project Project	Project Project	Project Project
12	16-Nov 18-Nov	Project HPLC	Project Fluoride ISE	Project Ag Electrode Study	HPLC Project	Project Fluoride ISE
13	23-Nov 25-Nov	Exam 2				
		Project	Project	Project	Project	Project
14	30-Nov 2-Dec	Fluoride ISE Ag Electrode Study	HPLC Ag Electrode Study	Fluoride ISE HPLC	Ag Electrode Fluoride ISE	Ag Electrode Study HPLC
15	7-Dec 9-Dec	Project Presentation Check Out	Project Presentation Check Out	Check Out Project Presentation	Check Out Project Presentation	Check Out Project Presentation