CHEM 4130

Analytical Chemistry II

Instrumental Analysis

Spring, 2007

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Lectures: Tuesday 4th Period (10:40 am to 11:30 am), 242 Leigh hall
Thursday 4-5th Period (10:40 am to 12:30 pm), 242 Leigh hall

The lectures are designed to facilitate your learning, describe important concepts and direct your study. They cannot serve as the full educational experience. To master this course, it is very important that you keep up with both the reading of book chapters and the working of homework problems. Attention to the lectures will allow you to focus on the important concepts. In addition, this course covers a lot of material and it moves very fast. Do let yourself get behind.

Office Hours (Dr. Cao): Tuesday: 11:30 am to 12:30 pm, and Thursday: 12:40pm to 1:30pm.

Office Hours (Teaching Assistant--Xian Chen): Monday (by appointment), and Wednesday: 2:00pm ~ 3:00pm.

Textbook: Principles of Instrumental Analysis 6th Ed., Douglas A. Skoog, F. James Holler and Stanley R. Crouch, Thomson Brooks/Cole, 2007.

Problem Sets: Problems will be assigned periodically throughout the semester as an aid in comprehending the course material. The homework sets will be very helpful in preparing for the exams. Ms. Xian Chen will collect the homework, but the homework will not be graded. As needed, homework and the related material will be discussed in class.

Exams: There will be three in-class exams during the semester as well as a comprehensive final. The exams will cover homework problems and will emphasize understanding the lecture material and problem solving. There will be no make-up exams. All exams will be close book.

Exam I: February 8 (Th.), in class
Exam II: March 8 (Th.), in class
Exam III: April 12 (Th.), in class
Final: 2F, May 2 (W), 8:00 pm to 10:00 pm, Lei242

Grading: All exams are worth 200 points. The three best out of four exams will be counted to the final grade. The total points for homework are 60 point: each one is worth 6 point if turn in on time, and turning in late will cost 2 points per day.

Total = 3 x 200 pints x 100% + 60 points = 660 points

Proposed Grade Levels:

A: 571 – 660
B+: 531 – 570
B: 491 -- 530
C+: 451 – 490
C: 411 – 450
D+: 371 -- 410
D: 331 – 370
F: 330 and below

Tentative Lecture Schedule

Date		Topic	Chapter(s)
Jan.	9	Introduction	1
	11	Basic concepts	1 + A1
	16	Signal-to-noise	5
	18	Signal-to-noise and spectroscopy intro.	5 + 6
	23	Homework discuss (Xian Chen)	
	25	Spectroscopy Instrumental Principles	7
	30	UV-Vis Spectroscopy	13
Feb.	1	UV-Vis Spectroscopy	13 +14
	6	Luminescence	15
	8	**Exam I**	
	13	Luminescence	15
	15	IR	16
	20	IR	16 + 7(I)
	22	Raman	18
	27	Atomic spectroscopy	8 + 9
Mar.	1	Atomic spectroscopy	9 +10
	6	X-Ray Spectroscopy	12
	8	**Exam II**	
	13	*Spring Break*	
	15	*Spring Break*	
	20	Exam discussion (Xian Chen)	

Date		Topic	Chapter(s)
Mar.	22	Mass Spectrometry	11
	27	Homework discussion (Xian Chen)	
	29	Mass Spectrometry	11+20
Apr.	3	Introduction to Chromatography	26
	5	Introduction to Chromatography	26
	10	Gas Chromatography	27
	12	**Exam III**	
	17	HPLC	28
	19	Capillary Electrophoresis	30
	24	Particle Sizing	34
	25	End-of –class Review	location announced later
May	**2**	**Final**	