WINGRAVE CHEM-437 INSTRUMENTAL METHODS Spring 2000

Instructor: Dr. J. A. Wingrave (315 QDL, 831-1676) (wingrave@udel.edu)
- Website for CH437: (www.udel.edu/chem/wingrave/chem437/chem437.html)

Required Course Supplies (Available at University Bookstore):

- **Textbook**: Skoog, Douglas A., Holler, F. James, Nieman, Timothy A. Principles of Instrumental Analysis, 5th Ed.
- **Solutions Manual**: Skoog, Douglas A., Holler, F. James, Nieman, Timothy A. Solutions Manual to Accompany, Principles of Instrumental Analysis, 5th Ed.

Other Resources

- Tutors - For more information, see Mrs. MacMillan in BRL 104
- Office Hours: 2:30-4:00 pm MW & 7:30-9:00 am F in 315 QDH
- Bookstore - Chemistry flash cards, Schaum Outlines, Chemistry Problem Solvers, etc.

GRADING POLICIES

The minimum requirements for obtaining a passing grade in CH-437 are:

- Successful completion of the final examination
- Obtaining a total of atleast 100 points on the grading scheme outlined below

There will be **300 points** that can be earned in CH-437 from the sources below;

- **Examinations (200 points, 50 %)** Three (3), 100 point exams will be given but only the highest two (2) exam scores will count toward your grade total. Your lowest exam score will be dropped. For missed exams a score of zero (0) will be recorded: NO make up exams will be given for any reason. NOTE: Exam #3, will be given at the same time as the Final Exam.
- **Final Examination (100 points, 50 %)** The final exam will be cumulative & exam #3, will be given at the same time as the Final Exam.
- **Grading Schedule for CH-437**

TOTAL POINTS	GRADE	TOTAL POINTS	GRADE	TOTAL POINTS	GRADE
300-265	A	215-200	B -	150-135	D +
265-250	A -	200-185	C +	135-115	D
250-235	B +	185-165	C	115-100	D -
235-215	B	165-150	C -	99-0	F

CHEMISTRY 437

Wingrave -- Lecture, Lab & Exam Schedule -- Spring 2000

DATE	LECTURE TOPICS	STUDY PROBLEMS
Feb. 7,9	CH 1. Syllabus, Measurement, Analysis & Calibration	**1:** 9,10; **TABLE 1-3** **Appendix 5**
Feb. 14, 16	CH 2-5. Electronics & Noise	**2:**5,11,12,18; **3:**1; **4:**1-4,6; **5:**1-12;
Feb. 21, 23	APPPENDIX 1. Error Analysis	**Appendix. 1:**1-21 (s or σ, by calculator)
Feb. 28, March 1	CH 6-8. Intro to Spectroscopy & Spectrometers	**6:** 1-5,9,11,12,14-17; **7:** 1-3,6,8,15-17, 21-23; **8:** 2,3,6,8,9
March 6	**EXAM #1**	CH 1-8, Appendix #1
March 8	CH 9-12,20. Atomic & Mass Spectroscopy	**9:** 1,,3-6,8-12,(21,22); **10:** 1-10; **11:**1-11; **12:**1-4,9-12; **20:**2-4,11
March 13, 15	CH 13-16. UV, Vis and IR Spectroscopy	**13:** 1-10,13-24,29,30;**14:** 4-7,9;**15:** 1-5,7;**16:**1,3,4,7,8,12
March 20, 22	CH 17-19. IR, Raman & NMR & Spectroscopy	**17:** 2-8; **18:** 1,2,5,7 **19:** 1-12,21-42
March 25-April 2	**SPRING BREAK ! !**	**SPRING BREAK ! !**
April 3	CH 21. Surface Spectroscopy & Microscopy	**21:** 1-9
April 5	**Exam #2**	CH 9-21
April 10,12	CH 22. Electroanalytical Chemistry	**22:** 1-17
April 17, 19	CH 23. Potentiometry	**23:** 1-15,17,18,20,21
April 24, 26	CH 24, 25. Coulometry & Voltametry	**24:** 1,2,4-7 **25:** 1-9,11
April 24,26	CH 26. Chromatography Fundamentals	**26:** 1-25
May 1,3	CH 27, 28. HPLC & Gas Chromatography	**27:** 1-19,22-25
May 8,10	CH 28. Ion Exchange Chromatography	**28:** 1-22
May 15	CH 29, 30. Supercritical Fluid & Capillary Chromatography	**29:** 1-7 **30:** 1-6
May 17	CH 31, 32. Radiochemical & Thermal Analysis	**31:** 1-11 **32:** 1-10,12-21
May 18	Reading Day	
To Be Announced	**EXAM #3 & FINAL EXAM** CH 1-32 & Appendix #1	

WINGRAVE Chemistry 437 Personal Information Form Spring, 2000

Please complete this form and return it to Professor Wingrave at the end of the first class.

Name: _____ Section: _____

UD e-mail Address: _____ Phone: _____

At UD: Major: _____ Minor: _____

• Previous Science and Math Courses: If you took the course in; 1) High School write "HS"; 2) at UD write "UD" or; 3) more than 5 years ago write "5", in the blank.

_____ Algebra I _____ Algebra II _____ Geometry

_____ Trigonometry _____ Geometry _____ Pre-Calculus

_____ Calculus _____ Differential Equations _____ Statistics

_____ Quantitative Analysis _____ Organic Chemistry _____ Analytical Chem.

_____ Inorganic Chemistry _____ Physical Chemistry _____ Biology

_____ Chemical Engineering _____ Enviromental Chemistry _____ Biochemistry

_____ Other Chemistry (list) _____.

_____ Other Engineering (list) _____

• The role of the instructor in CH-437 [Rate from 1 (most) to 5 (least) important / desirable]:

Lectures should emphasize;

_____ memorization of facts and equations,
_____ deriving equations to show the principles upon which equations are based,
_____ how to work chemistry and science problems,
_____ instrumentation and operation of instruments,
_____ the chemistry you will need in future classes. Which future classes?
- Please list _____,

• Instrumental methods of most interest;

_____ Electrical Circuits _____ Error & Noise Analysis _____ Mass Spec

_____ Atomic Adsorption Spec. _____ Atomic Fluorescence Spec.____ UV-Vis Spec.

_____ Radiochemical Analysis _____ Nuclear Magnetic Resonance _____ IR Spec.

_____ Electrochemical Analysis _____ Surface Analysis ____ Raman Spec.

_____ Thermal Analysis _____ Gas Chromatography ____ HPLC

_____ Capillary Electrophoresis _____ Supercritical Fluid Extraction

_____ Other Methods (list) _____.