Chemistry 126
Experimental Chemistry II

TEXTBOOKS: "Experimental Chemistry 2", Linda Wozniewski 2011

Also required 1) " Working Safely with Chemicals in the Laboratory", 2nd ed, Hugh B. Kareful, 1994
2) A laboratory notebook

GRADING:		
	Mid Term Exam	225 Points
	Final Exam	450 Points
	Lab Reports	1200 Points
	Total	1875 Points

The mid -term exam is scheduled for March 9th, 10th, & 11th and will contain material from the first six labs. The Final Exam is scheduled for April 27th, 28th, 29th and will contain material from all thirteen labs. The lowest lab grade will be dropped.

LAB REPORTS: Nine of the experiments will require a full-length write- up and will be worth 100 points each. The formal write-up will consist of:

I. Title page: Title of experiment, name, partner's name and date performed
II. Abstract: One paragraph indicating what was done, how it was done and the final results
III. Introduction: Purpose of the experiment and relevant background. End with a purpose statement
IV. Procedure.
V. Experimental Details: (Pages from Hall Book)
VI. Results: Data, Calculations, and observations & Assigned questions
VII. Conclusion: Final analysis of the experiment

Formal write-ups must be word-processed and are due 1 week from the completion of the experiment. Lab reports will be accepted late with a 10% reduction in grade.

The other four assignments will involve homework, but not a formal lab report. They are also worth 100 points each.

LAB POLICY: You should read the scheduled experiment before class and be prepared to ask questions about any information or procedures that you do not understand. Lab time is limited to the designated hours. Students must keep a permanent record of their data in a numbered, bound laboratory notebook. The data should be entered in ink. A carbon copy of the data from each experiment must be submitted upon the completion of each experiment. Do not tear out any of the original numbered sheets. There will be no makeup time for missed labs.

EQUIPMENT: Each student will be issued a drawer with a set of equipment. You will be charged for lost equipment broken or lost after check-in has been completed. A $10.00 fee will be charged to students who do not check out their drawer at the end of the semester or on withdrawal from the course. Each student will be required to bring their own safety glasses, two lint free towels and liquid dish soap. A lab coat is optional.

SAFETY: Safety is a primary concern in this course. Make sure that you have read and understand the safety rules written in your lab text and that you understand the safety rules written in your lab text and that you understand any safety rules or guidelines given by your instructor. Safety glasses, closed toed footwear and long sleeved shirt that covers the midriff and pants or skirt that come to the ankles must be worn at all times while in the laboratory.

Long hair must be pulled back and dangling jewelry must be removed. No loose, dangling scarves or clothing is allowed. Be informed about the hazards involved in each experiment. Use the fume hoods for all volatile compounds. Avoid skin contact with chemicals. Know what procedure to follow if you spill a chemical on your skin. Do not inhale fumes or directly smell chemicals. Dispose of excess chemicals or chemical waste in the correct manner. Always check with the instructor if you are unsure about the correct means of disposal. Students must turn in the safety consent form before beginning any experiments.

WITHDRAWAL POLICY: A student may withdraw at any time through Sunday March 13th without the consent of the instructor and receive the grade of W. Any student who decides to drop the course must fill out a withdrawal form or they will receive the grade of an F. Students must be currently or previously enrolled in C106, The Principles of Chemistry II, lecture. A student withdrawing from the C106 lecture must also withdraw from the C126 lab. After March 28th a student may withdraw only with the permission of his or her Dean. The approval is given only for urgent reasons related to extended illness or equivalent distress. To then qualify for a grade of W, a student must be passing the course on the day of withdrawal. If the student is failing, the grade recorded on the withdrawal date will be an F. This paragraph is University policy. Please make sure you understand this paragraph since no exceptions can be made.

COURSE OBJECTIVES: As an integral part of an ACS approved Core program, the C126 laboratory seeks to help fulfill the following ACS guidelines:

- Keep legible and complete experimental records;
- Synthesize and characterize inorganic compounds;
- Perform accurate and precise quantitative measurements;
- Interpret experimental results and draw reasonable conclusions;
- Anticipate, recognize, and respond properly to hazards of chemical manipulations;
- Communicate effectively through written reports;
- Work effectively in small groups and teams;
- Understand the distinction between qualitative and quantitative goals of determinations;
- Understand Rates of reactions and chemical equilibria
- Understand acid, base, and buffered systems
- Understand Redox reactions
- Perform a qualitative separation and analysis
- Demonstrate the ability to identify and explain how scientific theories are formulated, tested, and validated.
- Demonstrate the ability to integrate and apply scientific methods which include defining parameters of problem, seeking relevant information, subjecting proposed solutions to rigorous testing, and drawing conclusions based on the process

RIGHT TO ACCOMMODATION FOR INDIVIDUALS WITH DISABILITIES

Indiana University is committed to creating a learning environment and academic community that promotes educational opportunities for all individuals, including those with disabilities. Course directors are asked to make reasonable accommodations, upon request by the student or the university, for such disabilities. It is the responsibility of students with documented physical or learning disabilities seeking accommodation to notify their course directors and the relevant campus office that deals with such cases in a timely manner concerning the need for such accommodation. Indiana University will make

reasonable accommodations for access to programs, services, and facilities as outlined by applicable state and federal laws. *Campus support office:* Davetta Haywood, Disabilities Coordinator, Hawthorn 237, 219-980-6942 Student Support Services Student Support Services www.iun.edu/~supportn

WEEK OF				TOPIC	EXPERIMENT #	
January	13	14	15	The Rate of Iodination of Acetone	3-10	L
	20	21	22	Determination of an Equilibrium Constant Colorimetric Determination of an Equilibrium Constant	11-18 19-29	L & L
	27	28	29	Chemical Equilibrium: LeChatelier's Principle	33-40	S
February	3	4	5	Determining the Buffer Capacity of Antacids Buffers	43-50 51-56	L
	10	11	12	No Class-HASTI		
	17	18	19	Titration of Acids and Bases	57-67	L
	24	25	26	Determination of the Ionization Constant of a Weak Acid	71-80	L
March	2	3	4	Determining of a Solubility Constant	81-86	L
	9	10	11	Mid Term exam (through Solubility Constant)		
	13	13	13	Automatic Withdrawal Deadline		
	16	17	18	Spring Break		
	23	24	25	Determining Water Hardness with EDTA	87-94	L
March/April	30	31	1	A Redox Titration: Determination of Iron by Permanganate	95-104	L
	6	7	8	Introduction to Qualitative Analysis Qualitative Analysis-Group I	105-114 115-118	S
	13	14	15	Qualitative Analysis-Group II	119-128	S
	20	21	22	Qualitative Analysis-Group III Qualitative Analysis-Groups IV & V	129-138 139-148	S
	27	28	29	Final Exam All Labs		