STAFF

INSTRUCTOR: Prof. R.G. Cooks (room 63 WTHR, ph. 45263, cooks@purdue.edu)

Post-Doctoral Assistant: Sheran Oradu (room 63 WTHR, ph. 45265, soradu@purdue.edu)
Additional Assistant: Kevin Kerian (room 13/14 WTHR, ph. 49420, kkerian@purdue.edu)
Teaching Assistants: Ryan Bain bain0@purdue.edu; Nichole Burke burke52@purdue.edu

Grading: Hsu-Chen Hdu; Ahmed Hamid; Sheran Oradu

Lab Coordinator: Paul Bower (room 173A WTHR, ph. 45472, pbower@purdue.edu)

EXAMS: Two 1-hour exams will cover the first two sections of the course according to the schedule supplied. A third exam, given during final exam week, will cover the material of the last section of the course as well as requiring knowledge of the earlier sections. EXAM 1: Wednesday, Sept. 26th; EXAM 2: Wed. Oct. 31st; FINAL: Week of Dec. 10th. October break, Oct 8,9 Thanksgiving Nov. 21 -24

ASSIGNMENTS: 1 per week, provided on Monday in class, due following Mon. in class.

QUIZZES: Unannounced quizzes will be given in class.

GRADES: Midterm Exams 300 pts (2 @ 150 pts each)
Final Exam 150 pts
Homework 300 pts (10 sets @ 30 pts each)
Laboratory 300 pts (12 labs @ 25 pts each)
Presentations 60 pts

TOTAL 1110 pts

LETTER GRADES: Will use the scale.

LECTURES: Sec 01: MWF 10:30-11:20 AM BROWN 3104

LAB: Sec 02: Th 7:30-11:20 AM WTHR 175
Sec 03: Th 1:30-5:20 PM WTHR 175
Sec 04: T 1:30-5:20 PM WTHR 175

HELP SESSIONS: Help sessions held on Monday evening prior to Wednesday exams in WTHR 31
EXAM1: Wednesday, Sept. 26th, 10:30-12:30pm
EXAM2: Wednesday, Oct. 31st, 10:30-12:30pm
FINAL: TBA

TEXT: None Required
LIBRARY: Reserve Books

Enke: The Art and Science of Chemical Analysis
Strobel and Heineman: Chemical Instrumentation: A Systematic Approach
Willard, Merritt: Instrumentation Methods of Analysis, 6th & 7th Edition
Horowitz & Hill: The Art of Electronics

Skoog, Holler, Crouch: Principles of Instrumental Analysis

ATTENDANCE: Documented reasons for unavoidable absences should be given to the instructor.

OFFICE HOURS: TAs will deal with most questions in lab sections held Tuesday and Thursday. To request an appointment with Prof. Cooks email Brandy Shumaker at: dunlap@purdue.edu

FRIDAY CLASS: Fridays will be used, in part, for problem solving, in-class discussions, and in-class presentations.

IN-CLASS PRESENTATION: Organized by Sheran Oradu
During the semester, each student will give a presentation on an approved topic. Presentation dates can be scheduled as soon as a topic and outline has been approved by the TAs. EXTRA CREDIT TO THOSE BOOKING EARLY DATES. Presentations will be 10 minutes in length and held on Fridays. Each presentation will be accompanied by a typed summary (not to exceed 2 pages in length) and MUST be supplied to all class members, in class, the Wednesday prior. Overhead or computer projectors should be used during the presentation. Presentations may take the form of question/answer or a formal talk. Audience participation is strongly encouraged.

EXAM SCORES:
If an exam is missed for a prior approved reason, the score will be prorated.

HOMEWORK SCORES:
Assignments will be due each Monday in class and will be graded that afternoon; late homework will not be graded. Please refer to Purdue’s website on academic integrity with rules regarding cheating: http://www.purdue.edu/odos/osrr/academicintegritybrochure.php. Committing an act of academic dishonesty will not be tolerated.
LABORATORY SCORES:
You must attend all laboratory sessions. You will receive a zero for any unapproved missed laboratory session. A laboratory report which consists of extensive quoted material is not considered original. Laboratory reports are due one week after the corresponding laboratory session, and will be returned within one week. Late submission of a report is not permitted.

LABORATORY DRESS CODE:
The paragraph below is the departmental laboratory dress code as modified August, 2003. It will apply to CHM 424 starting week 2 (no dress code for electronics experiments during weeks 4, 8, 10 & 11).

Everyone working in a teaching lab must be appropriately dressed at all times, including checkout. Appropriate clothing covers the body from the neck to the ankles, shoulders and feet. Shirts (tops) must cover shoulders, underarms and the entire abdominal area when standing, sitting and reaching. Pants and skirt must be long enough to reach the ankle when standing or sitting. Hose or tights are not to be used as a substitute for proper length pants or skirts. Shoes must cover the entire foot. Footwear with open toes, open heels or other decorative openings are not allowed to be worn. Socks covering the foot and ankle must be worn.

Goggles must be worn by everyone in the lab starting with week 3 and with exception to the electronics experiments during weeks 4, 8, 10 and 11. You will not have your own lab drawer.

LABORATORY SAFETY:
Safety is the primary concern. Safety requires thoughtfulness in lab operations. Please consult the Chemistry Department safety website at http://www.chem.purdue.edu/chemsafety/default.html for information on safe practices. Your TA’s and instructor are a further source of information.

IMPORTANT NOTES on LABS:
These labs are meant to teach an appreciation for instrumentation and its use. You will often be expected to do more with the instruments than turn them on and push buttons!

1. We will do the experiments in groups. Each group member will write the data in his/her lab notebook. The lab reports (calculations, questions, etc.) must be done by each group member independently – this is an issue of academic integrity.

2. The lab report is due one week after the completion of the experiment at the beginning of lab; late reports are not accepted. Reports are not accepted unless typed. Use normal headings to set up reports.

3. The TA’s are available for guidance, assistance and evaluation. If it is obvious that all members of a group are not contributing equally to the experiments, this will be reflected in grades.

4. It is assumed that you will have read and prepared for the lab period. The experiments are designed for a four (4) hour lab period. No extra time will be allotted.

5. Most of the experiments are done with community equipment and glassware. It will therefore be a firm rule that no one will leave lab before cleaning up the area and glassware.

6. No unsupervised work is permitted in this lab.
ACADEMIC DISHONESTY:

Cheating (including plagiarism) will be punished as severely as allowed under University guidelines. See the Student Handbook or Purdue’s website:
http://www.purdue.edu/odos/osrr/academicintegritybrochure.php

Selected important guidelines:

Students altering data on a lab experiment, or turn in work which they did not do will receive a zero on the experiment.

Plagiarism or collaboration on laboratory reports will result in a grade of zero for the report portion.

Students caught copying or with a crib in their possession during an exam will receive a zero for that exam.

Performers of more than one of the above listed examples of academic dishonesty will fail the course.

All cases of cheating will be reported to the Dean of Students Office, and the information will be placed in the students file.

Disruptive behavior in the classroom or laboratory will result in loss of privilege to attend these activities.
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LAB
(*Th sections; Tu section will be one lab behind from Oct break to Thanksgiving)

Week 1.  Aug 20  Analyt. Instr. Demos DRLC
Week 3.  Sept 3  MONDAY Labor day
          UV-VIS Spectroscopy
Week 4.  Sept 10 Basic Electronics
Week 5.  Sept 17 AA, STM, IR
Week 6.  Sept 24 AA, STM, IR
Week 7.  Oct 1  AA, STM, IR
Week 8.  Oct 8,9  (October Break) *RC Circuitry
Week 10. Oct 22  *Digital Electronics
Week 11. Oct 29

CLASS
Signals & Noise; Analytical Performance Criteria;
Quantitative Analysis
Fundamentals optical phenomena
NO CLASS MON, SEPT 3 (LABOR DAY)
Absorption spectroscopy, atomic & molecular
Basic Electronics & optical components
RF Electronics & signal processing
**Exam 1 Wed Sept 28**
Molecular fluorescence
IR/Raman (cont.)
Op Amps
Digital electronics
**Exam 2 (Wed, Oct 31)**
Surface science: optical &
electron spectroscopy
Surface science: imaging
Surface science: atomic & ionic probes
Mass spectrometry: ion sources
Mass spectrometry: mass analyzers
Mass spectrometry: applications
Final Exam