Course Organization

1. Call Number

   01437

2. Instructor

   Gary Small, 295 Clippinger, 593-1748, small@ohio.edu

3. Course Web site

   www.phy.ohiou.edu/~small/chem729.html

4. Class Meetings

   Monday, Wednesday, Friday -- 11:10-12:00 pm, Clippinger 135

5. Prerequisites

   Chemistry 586 or a passing score on the Analytical Chemistry Entrance Exam. A working knowledge of calculus and matrix theory is assumed. Computer programming skills in a high level language are assumed (e.g., C, BASIC, FORTRAN, etc.). Programming in the course will be performed in Matlab. Internet computing skills are assumed (e.g., use of electronic mail, ftp, telnet, web browsers, Adobe acrobat). A general knowledge of the Unix operating system is assumed (login, logout, creating directories, editing text).

6. Reading Assignments

   No textbook is required for the course. Selected readings will be assigned.

7. Course Material

   Chemistry 729 is a survey course focusing on introductory techniques in analytical chemistry related to data handling and interpretation. The principal topics in the course are (1) experimental errors, (2) basic statistics, (3) experimental design and analysis of variance, (4) univariate and multivariate model building, and (5) signal processing.

8. Summary of Course Requirements

   The course grade will be determined from the following elements:

   Homework assignments - 5@50 points = 250 points
   Midterm exam -- 100 points
   Final exam -- 100 points
   Critique -- 50 points

   Total -- 500 points
9. Exams

There will be two in-class exams given during the course, a midterm and a cumulative final exam. Exams from 2000 will be made available to assist your preparation.

10. Critique

A written critique of a journal article that has a significant component of chemometrics is required. The suggested length of this critique is 3 double-spaced typewritten pages. The specific paper is open to selection by the student but must be approved by the instructor. Topics must be selected by May 3. Papers will be due by noon on Friday, May 31. In grading, papers will be allocated a maximum of 50 points. The outline of the critique and breakdown of points is as follows:

a. Summary of objectives of research – 7 points
b. Summary of research methods and results obtained – 10 points
c. Summary of conclusions drawn – 8 points
d. Your critique of the work – 25 points

Students should submit a copy of the article along with their critique

11. Homework Reports

Homework assignments will consist of a variety of tasks such as derivations and analysis of data provided to you. For data analysis assignments, the homework report should include a written description of what was done, copies of any script programs used, and output results from the calculations. In grading the homework, the quality of the explanations will be given significant weight.

12. Calculation of Overall Grades

Grades will be assigned on the basis of the distribution of point totals. The average score will likely receive the letter grade, "B". The +/- grading scale will be used.

13. Policy on Late Assignments

Homework assignments will be due at noon on the day due. Late assignments will be penalized at the rate of five points per day.

14. Policy on Academic Misconduct

The work you perform in this course is expected to be your own. Homework assignments are to be done independently. If you have questions regarding an assignment, see the instructor. In preparing the written critique, you should be especially careful about plagiarism. Copying text from an article and using it as your own writing is not allowed. You will receive no credit if it is determined that the work you turn in is not your own. Academic misconduct may be reported to the Office of University Judiciaries.