



CHEMISTRY & BIOCHEMISTRY  
FLORIDA STATE UNIVERSITY



# ***CHM 4130: ADVANCED ANALYTICAL CHEMISTRY***

***Spring, 2008***

## ***Course Syllabus***

***Instructor:*** Dr. William T. Cooper, 415 DLC, 644-6875, [cooper@chem.fsu.edu](mailto:cooper@chem.fsu.edu)  
Office Hours; 10:30 – 11:30 Monday & Wednesday  
2:30 – 4:00 Tuesday  
or by appointment

***Lecture:*** 1:25 - 2:15 MWF, 316 HCB

***Texts:*** Harris; *Quantitative Chemical Analysis, 7<sup>th</sup> Edition* (required)  
Skoog, Holler & Nieman; *Principles of Instrumental Analysis, 5<sup>th</sup> Edition* (available  
on reserve in Dirac Library)

***Prerequisites:*** CHM 3120C, PHY 2048C or 2053C

***Content:*** *Advanced Analytical Chemistry* is a survey of modern methods of chemical analysis, with a particular emphasis on the operating principles and applications of analytical instruments. Measurements are a vital part of all modern science, and Analytical Chemistry has played a particularly important role in many of the most significant technological advances of the past 20 years. This course will thus include both detailed descriptions of the science of chemical analysis, as well as discussions of applications in areas such as molecular biology, materials science, environmental and earth sciences, pharmaceuticals, and nutrition and human health.

The lecture portion of the course is divided into five approximately equal parts:

- calibration of analytical instruments, data acquisition and signal enhancement;
- optical spectroscopy methods and instrumentation;
- atomic and molecular mass spectrometry;
- chromatography and electrophoresis;
- electrochemistry.

There will be a one-hour exam roughly one week after the completion of each section, and a final exam. There will also be 4-6 on-line quizzes assigned during most weeks that do not include an exam.

**Problems:** It is expected that all assigned problems will be completed, even though they will not be graded nor turned in. Working and thoroughly understanding problems are essential for mastering the course and passing exams. **Students who aspire to an above-average grade should attempt to work 2-3 times the number of assigned problems.**

**Grading:**

	Scale	
5 one-hour exams (12% each, 60% total)	85-100	A
1 final exam (20%)	72.5-84	B
4-6 quizzes (20%)	60-72.5	C
	50-59	D
	<50	F

**Academic Honor System:** The Academic Honor System at Florida State University is based on the premise that each student has the responsibility to:

- 1) uphold the highest standards of academic integrity in the student's own work,
- 2) refuse to tolerate violations of academic integrity in the academic community, and
- 3) foster a high sense of integrity and social responsibility on the part of the University community.

**Please NOTE that violations of the Academic Honor System will not be tolerated in this class. Specifically, incidents of plagiarism of any type, including the use of unauthorized materials during exams or submission of other students' work on quizzes, will result in a grade of F being assigned for the term.**

**American Disabilities Act:** Students with disabilities needing academic accommodations should do the following:

- 1) register with and provide documentation to the Student Disability Resource Center (SDRC);
- 2) bring a letter to the instructor from SDRC indicating you need for and the nature of academic accommodations. This should be done within the first week of class.

**Course Web Page:** All important information regarding this course can be found on the course web page. This web page is located in **Blackboard** and is accessed directly from <https://campus.fsu.edu>. **PLEASE NOTE THAT LOGGING ON TO CAMPUS.FSU.EDU REQUIRES AN ACCOUNT NAME AND PASSWORD.**

The course web page is divided in sections that can be accessed by simply clicking on the appropriate heading in the menu bar along the left side of the screen. You will find links to the following in these sections.

***Announcements***

- news and information

***Syllabus***

- course syllabus
- lecture outline

***Staff Information***

- biographical sketch of the instructor

***Lecture Notes***

- pdf files containing the PowerPoint lecture presentations

***Quizzes***

- on-line quizzes are located here

***Exams Topics***

- a detailed listing of topics that will be covered in each exam
- equation cheat sheets for exams

***Old Exams***

- exam from previous semesters, including keys

***Communication***

- a vehicle to send messages, questions and comments to me or the class

***Student Tools***

- course schedule
- on-line gradebook for checking grades

***Cool Analytical Chemistry Links***

***Chemistry Department Home Page***

NOTE that most of this material will be available as Adobe PDF files. If you do not have a word processing program that can read this format, you can download the **Acrobat Reader** program free by going to the Adobe web site at <http://www.adobe.com/products/acrobat/readstep2.html>.