

## Chemistry 146 Greensheet Spring 2004

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**O. H.** TR 2:30-3:30, or by appointment

**Text:** None. Basic physical, analytical and inorganic texts will be helpful. Journal articles will be an important source of information as the experiments we will do are largely from the current chemistry literature. This course will also make use of the chemical literature found in the library. You may need to consult previous organic, inorganic or instrumental methods texts as review. You will need to purchase a bound 8.5" × 11" quadrille lined laboratory notebook such as National #43-591 which can be found in the bookstore.

**Prerequisites:** Chem 145L and either Chem 155 or Chem 162L

1. *Laboratory* meets MW 12:30 - 03:20 in DH 10. We will do at least three different projects in this class. You will write a report on each of them.
2. *Reports* You will be required to keep complete and detailed records of compound synthesis and instrument use in your laboratory notebook. Your lab notebooks will not be graded, though diligent use of your lab notebooks will be part of your performance grade. Also, if I find any anomalous information in your written reports, I will require you to substantiate your claims with your laboratory notebook. If the information is missing or does not agree, there will be a minimum of a 10% deduction from your grade! Written reports on each project will have deadlines. Late work will be accepted with a penalty of 5% per day.
3. *Lectures* are W 11:30 – 12:20 in DH 10. Lectures will be used to discuss the theoretical and operational details of the experiments performed in the laboratory. Please feel free to ask questions during the class period. You are responsible for all the lecture material and handouts given in class. If you are absent, please make provisions to obtain this material.
4. *Quizzes* There will be three equally weighted quizzes over concepts covered in the course.
5. *Oral Presentation* You will give an oral presentation on any one of the projects. The oral presentation will be given during the period scheduled for the final exam.
6. *Grading* Grading will be based on the following percentages

Quizzes	30%
Written reports	30%
Laboratory performance	30%
Oral presentation	10%

## Tentative Schedule

<b>Week</b>	<b>Lab</b>	<b>Other</b>
Feb 2	Check-in, literature review materials	
<b>Project 1: Preparation / analysis of monolayer capped Au nanoparticles.</b>		
Feb 9	Prepare nanoparticles	
Feb 16	UV-Vis and FTIR of products	
Feb 23	DSC of products	
Mar 1	Temperature dependent conductivity of products	
Mar 8	AFM of products (time permitting)	<b>Quiz</b>
<b>Project 2: Preparation and analysis with 'electronic noses'.</b>		
Mar 15	Polymer blend preparations	<b>Paper Due</b>
Mar 22	Electrode Preparations	
Mar 29	SPRING BREAK	
Apr 5	Qualitative analysis of response	
Apr 12	Quantitative analysis of response	<b>Quiz</b>
<b>Project 3:</b>	<b>Raman Spectroscopy</b>	
<b>Choice of</b>	<b>Anodic Stripping Voltammetry for Hg detection</b>	
	<b>Surface Plasmon Resonance Spectroscopy</b>	
Apr 19	Individual work	
Apr 26	Individual work	<b>Paper Due</b>
May 3	Individual work	
May 10	Individual work	
May 17	Check Out	<b>Final Paper Due</b>
May 24	945-1200 Final	