

# CHE 385: Inorganic Chemistry II Laboratory

## Syllabus and policies

*Spring 2008*

*M 2:30 – 6:30 pm*

*Nobel Hall room 306*

Dr. Brandy Russell  
205A Nobel Hall  
933-6160  
brussell@gustavus.edu

TA: Emily Pelton  
epelton@gustavus.edu

**About this lab:** This laboratory course is designed to highlight some inorganic chemistry principles and to help you learn and practice experimental design skills while gaining independence in the laboratory. A major laboratory project in the second half of the semester will allow you to explore your own interests under the broad umbrella of inorganic chemistry. For the most recently updated laboratory plan, refer to the schedule posted on the course Moodle page. Experiment information will also be posted here.

**Lab philosophy:** You will NOT receive detailed instructions for most of the experiments in this course. Instead, you are more likely to receive a general goal for the experiment and will have to develop your own plan to carry it out. You will begin by reading the literature and techniques manuals and consulting with local experts (including me) to create your own protocol. You will keep a detailed laboratory notebook and interpret your own results in the context of the literature and your understanding of inorganic chemistry. You will do most of your own prep and cleanup work. If you need to use an unfamiliar technique or experiment, we will arrange for you to learn how. If you are unsure whether a certain technique or method is available at Gustavus, just ask! This approach more closely resembles chemistry as you would experience it in a job or research project. Because I am expecting so much more of you in terms of planning than a typical lab course might, I will be allowing extra lab time for each experiment.

### **Lab ground rules:**

- Wear safety glasses/goggles at all times.
- Wear gloves when handling hazardous chemicals.
- Dress appropriately for lab, including closed-toed shoes.
- Become familiar with the hazards associated with your experiment before beginning.
- Before attempting any experiment, the experimental plan must be jotted down and approved by me or Emily.
- If at any point, you are unsure that what you are about to do is safe, double check!
- Whenever possible, all work will be done during the Monday class session. Work at other times must be approved by me in advance, and no one is ever to work alone.
- You will be able to borrow chemicals and supplies from the third floor stockroom as needed. Sign out everything you borrow, every time. Return items promptly.
- Do not scavenge or borrow supplies, equipment, or chemicals from any other location without checking with me or obtaining permission from the rightful owner.

- Clean your messes fully before you leave.
- If you need to use instrumentation for your experiment, be 100% sure you know how to operate the instrument properly. Better to get a quick refresher course than to break something or get bad data!
- Plan your time wisely. There are multiple people in your group; arrange your time so you are not all sitting around doing nothing.
- Lab attendance is required every week, and you are expected to arrive on time.

**Notebooks:** Keeping a clear and detailed laboratory notebook is an essential skill for any experimental chemist. Each research group will keep a joint notebook. Write your protocols and observations while you carry out the experiment, not later. Notebooks must be kept in your group's lab drawer and may not be taken out of Nobel Hall. (This policy is common to research and development groups in academia and industry, and will also make it easier for all members of the group to have access to the notebook.)

Reports are not required for any experiments except the final project.\* Your laboratory notebook should contain all experimental objectives, procedures, data, observations, results, conclusions, discussion, and references. Spectra or other printed data may either be taped into the notebook directly, or maintained in an indexed and referenced three-ring binder which must also remain in the lab.

I will grade your notebooks at three random and unannounced times during the semester, and if your notebook is incomplete or missing from your drawer at these times, your grade will reflect this. Notebook grades will be based on the quality of your notekeeping and your observations.

***Grades (overall lab grade is worth 15% of your final course grade):***

Quality and completeness of your experimental plans and execution: 34%

Notebook (see above for details): 33%

Participation, technique, and safety: 33%

\*A group paper in the style of a scientific journal article is required to describe the results of the final project. The grade for this paper is included in the writing portion of the overall class grade (see course syllabus).