

CHEM 461, Section 1
Faraday Hall 209
WF 1:00–4:50 pm

Inorganic Chemistry Laboratory

Spring, 2017
Lab Professor: TM Gilbert, LaT (FW) 309

W Lab TA: Kathy Hoerchler; Office Lat (FW) 444

F Lab TA: Ashley Trowsell Office Lat (FW) 310

Tentative Schedule of Experiments

**** Before the first lab experiment (1/21), read Chapters 1–6 in the lab text! This is not optional!**

<u>Week</u>	<u>Topic</u>	<u>Lab Report Due</u>
Throughout the semester	Computational Chemistry Experiment: Relative Stabilities of <i>cis</i> - and <i>trans</i> Isomers of Four and Six-Coordinate Transition Metal Complexes	
1/18, 1/20	Check In	
1/25, 1/27	Expt 26: Synthesis of <i>cis</i> and <i>trans</i> -Co(en) ₂ Cl ₂ ⁺	
2/1, 2/3	Expt 37: Platinum (II) Complexes—the Trans Effect + finish last week's lab if necessary	
2/8, 2/10	Expt 20: Metal Complexes of Dimethylsulfoxide + finish last week's lab if necessary	Expt 26
2/15, 2/17	Expt 22A: Synthesis of Tris(acetylacetonato)chromium (III) + finish last week's lab if necessary	Expt 37
2/22, 2/24	Expt 29: Determination of Δ _o in Cr (III) Complexes + finish last week's lab if necessary	Expt 20
3/1, 3/3	Expt 30: Preparation and Study of a Cobalt (II) Oxygen Complex + finish last week's lab if necessary	Expt 22A
3/8, 3/10	Expt 30: Preparation and Study of a Cobalt (II) Oxygen Complex	Expt 29
3/15, 3/17	No Lab – Spring Break	
3/22, 3/24	Expt 40 + Handout 1: Preparation of Ferrocene	Expt 30
3/29, 3/31	Handout 2: Preparation of (1,3,5-C ₆ H ₃ Me ₃)Mo(CO) ₃ + finish last week's lab if necessary	
4/5, 4/7	Handout 3: Preparation of Mo ₂ (O ₂ CCH ₃) ₄ + finish last week's lab if necessary	Expt 40
4/12, 4/14	Handout 3: Preparation of Mo ₂ (PR ₃) ₄ Cl ₄ + finish last week's lab if necessary	Handout 2 CC Expt data
4/19, 4/21	Handout 3: Preparation of Mo ₂ (PR ₃) ₄ Cl ₄ (continued) + Check Out if possible	
4/26, 4/28	Comprehensive Written Lab Exam + Check Out if necessary	Handout 3

** You can get a copy of this syllabus, and all other class Handouts, at the class BlackBoard site.

Information

Text: Z. Szafran, R. M. Pike, M. M. Singh, "Microscale Inorganic Chemistry", Wiley, New York, 1990. There will also be handouts for some of the labs.

Lab Notebooks: You must purchase a bound laboratory notebook before the first lab. The notebook must contain carbon pages, because you will be turning in the carbon page of your results with your lab report. Notebooks meeting this criterion are available from the Bookstore and also from the Stockroom. The Stockroom versions cost less, and the Chem Club reaps the profit.

Before each lab, you should generate a prelab in the notebook with details as to how the lab will proceed. All laboratory observations, calculations, spectral data, and other relevant data should also be written neatly in the lab book during the experiment. A significant portion of your score on a particular lab will depend upon how neatly, precisely, and completely you enter data and observations into the notebook.

Handouts: Handouts and other class information will be available on the class BlackBoard site. Therefore, no excuses along the lines of "I lost my handout on that" will be accepted. If you do not have the handouts or information required, you will be barred from the lab on that day, and will earn a score of zero for the experiment.

Lab Reports: Once the experiment is completed, you will write/type and turn in a lab report detailing what you observed and concluded. The report will consist of the following parts:

Introduction/Setup	10%
Experimental Section	10%
Results Section	50%
Observations – 10%	
Yield and % Yield – 20%	
Characterization – 20%	
Discussion Section	10%
Conclusions and Answers to Questions	20%

As proof that your Results Section accurately represents what you accomplished in the lab, you will attach the carbon sheet from your notebook dealing with the experimental results to the report.

The TAs will inform you as to how they want each section written, and what components must appear. The TAs have sole responsibility for lab grading; however, if problems arise, the lab professor will intervene.

Advice on writing the Lab Report appears in Chapter 3 of your Lab text. If you do not turn in a lab report for a particular experiment, you will receive a score of zero for that experiment, and that zero cannot be replaced by the score on the Laboratory Final Exam (see below).

Grades: Each experiment/report is worth 100 points. You will also take a comprehensive written Laboratory Final worth 100 points. The highest nine scores of the lab reports plus Lab Final will be used to determine your grade (i.e., the lowest score will be dropped, unless the lowest score is a zero resulting from you not turning in a lab report). The grading scale will be 90%+ = A, 80 – 89.9% = B, 70 – 79.9% = C, 60 – 69.9% = D, <60% = F. This scale may be revised slightly downward, but there will not be a curve.

Additional Notes:

(1) You must perform all experiments in pairs unless instructed otherwise. Using another group's results without permission from your TA and professor will result in your receiving a zero for that experiment.

(2) You must write your report independently. If your TA determines that you wrote your report with substantial assistance from others, including your lab partner, the TA will give your report a score of zero.

(3) Failure to check out during the assigned time at the end of the semester will result in a failing grade for the entire course.