

INORGANIC CHEMISTRY LABORATORY CHEMISTRY 341

Instructor: Dr. Herlinger
Office: FH-418
Phone: 508-3127
Hours: ThTu 11:30-12:30 PM

Assistant: Mr. Dan Kissel
Office: FH-417
Phone: 508-3087
Hours: ThTu 1:30-2:30 PM

Required books:

1. A bound laboratory notebook
2. "Microscale Inorganic Chemistry: A Comprehensive Laboratory Experience," Z. Szafran, R. M. Pike, and M. M. Singh, John Wiley and Sons, New York, 1991.

Meetings:

1. The laboratory is scheduled for two meetings per week, Tuesday and Thursday at 2:45-5:45 PM in FH-201.
2. A pre-lab discussion starting promptly at 2:45 PM is given in FH-129 before work on the scheduled experiment begins. Attendance for the entire pre-lab discussion is required for admission to the laboratory.

Course Description:

Chemistry 341 is the laboratory course that accompanies Chemistry 340, Advanced Inorganic Chemistry. The course uses modern inorganic chemistry techniques and illustrates topics covered in Chemistry 340. Experiments involve the synthesis and characterization of inorganic and organometallic compounds. Compound characterization is based on physical, magnetic, and spectral measurements. Special techniques include instrumental analysis, manipulation of air sensitive materials, and use of micro-scale quantities of materials.

Grading:

6 Experiments (10 points each)	60
Notebook (due 1 week after completion of an experiment)	12
Questions (due with the notebook)	12
Lab Exam on 4/26	10
Safety	3
Cleanup (2 points) and Check-out (1 point)	<u>3</u>

Total Points = 100

Scale: A 100-90; B 89-80; C 79-70; D < 69

LABORATORY SCHEDULE

<u>WEEK</u>	<u>DATE</u>	<u>EXPERIMENT</u>	<u>READING</u>
1	1/24 1/26	Notebook & Safety Check-in	Handouts 1-47
2	1/31 2/2	#26: <i>trans</i> -[Co(en) ₂ Cl ₂]Cl <i>cis</i> -[Co(en) ₂ Cl ₂]Cl	239-242 242-243
3	2/7 2/9	Visible Spectroscopy Infrared Spectroscopy	107-113 114-125
4	2/14 2/16	#22: Cr(acac) ₃ Mn(acac) ₃	224-227 227-229
5	2/21 2/23	Magnetic Susceptibility Melting Point	49-56 74-80
6	2/28 3/1	Make-up Laboratory Make-up Laboratory	
7	3/5-3/9	Spring Break – No Classes	
8	3/13 3/15	#29: Crystal Field Splitting UV-Visible Spectra	248-252
9	3/20 3/22	#31: Ni(DPPP)Br ₂ Melting Point & UV-Vis Spectra	257-260
10	3/27 3/29	Magnetic Susceptibility (solid) FT NMR	125-140
11	4/3 4/5	#34: Wilkinson's Catalyst (A) IR & ¹ H NMR Spectra	271-277
12	4/10 4/12	#42 Synthesis of a Metal Carbonyl IR Spectra	313-316
13	4/17 4/19	Make-up Laboratory Make-up Laboratory	
14	4/24	Laboratory Exam & Check-out	

Group 1^a

<u>Name</u>	<u>Cleanup Days</u>	<u>Drawer Nos.</u>
1. Saleh Aiyash	1/26 & 4/10	33 & 34
2. Timothy Arundel	1/31 & 4/17	37 & 38
3. Jenice Kho	2/2 & 4/12	41 & 42
4. Josephine Kochou	2/7 & 4/24	49 & 50
5. Casey Miller	2/9 & 4/3	53 & 54
6. Srividya Prasad	2/14 & 4/5	57 & 58

Group 2^b

<u>Name</u>	<u>Cleanup Days</u>	<u>Drawer Nos.</u>
7. Milena Radovskaya	2/16 & 3/29	61 & 62
8. David Ridder	2/21 & 3/20	65 & 66
9. Stephen Sanchez	2/23 & 3/13	73 & 74
10. Michael Schauer	2/28 & 3/27	81 & 82
11. Theodore Zilist	3/15 & 3/22	85 & 86

a. Group 1 begins compound characterization with the first method scheduled.

b. Group 2 begins compound characterization with the second method scheduled.