

Chemistry 341

Spring 2021

Course: Chemistry 341
Date: Thursday /Friday
Time: 1:15-5:05P /1:30-5:20P
Location: Flanner Hall 305
Textbook: None other than a bound laboratory notebook

Instructor: Prof. Jacob Ciszek
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Website: Sakai

COVID-19 Protocols:

Basic philosophy: For the spring of 2021, Loyola has asked faculty to place classes online. We try to mirror this philosophy by placing the components of the lab online when possible, so long as it can be done without diluting the quality of your education. We have also front loaded the online content such that in-person labs are not needed for the first 5 weeks (1/21-2/19, first 1 ½ labs) to avoid the worst of the pandemic surge. When we begin again on campus (2/25), successful lab safety is predicated on three factors: personal responsibility, precautions, and compliance. All three are critical.

Personal responsibility: No edict/rule can compensate for irresponsibility, hence responsible action is of the utmost importance. Please conduct yourself outside of class such that you can minimize risk to your friends and classmates. Additionally, you know the level of risk at any time. There may be instances where you must expose yourself to a situation (e.g., indoor gathering, maskless friend, airplane, etc.) that significantly increases your risk. It is your responsibility to inform us and, as necessary, self-quarantine. It is the instructors' responsibility to not judge the incident, and to provide alternative means for completing that week's lab.

Precautions: The university has substantial COVID protocols which are outlined here: (<https://www.luc.edu/returntocampus/checklist/>). They include checking your symptoms daily, testing twice a week, and mask use. Follow them.

In person labs will be held in our largest lab room (>2500 sq ft.) which normally holds 48 students putting us at 13% capacity. All students will be required to have masks at all time and must remain a minimum of 6 feet away. This is especially important in areas where congregation normally would occur, such as the balance. High rate of air replacement in the laboratory also minimizes risk. Gloves should be worn (as per usual in a chemistry lab). A final reminder, testing and precautions are not enough. Responsibility on your part is key.

Compliance: Either the TA (Michael Carr) or I will ask to see your compliance check (for testing/symptoms) on the app before you can enter the lab. The university has additional disciplinary policies (www.luc.edu/media/lucedu/osccr/pdfs/LUC%20Community%20Standards%202020-2021.pdf) regarding COVID compliance.

Course Title: Advanced Inorganic Laboratory

Course Philosophy: Chemistry 341 is designed to be your final preparative lab before starting a career in chemistry. Thus, the course finishes your undergraduate education in chemistry by demonstrating many modern techniques and illustrating principles learned in your inorganic course (Chemistry 340). In addition, the course seeks to prepare you for entry into the laboratory environment, be it academic or industrial. As such, an emphasis will be placed on your preparation of a quality notebook and final reports in addition to your successful completion of the experiments.

Office Hours: Both your TA (Michael Carr) and I are available to assist you with questions you may have. Since we are trying to keep occupancy down in Flanner, office hours will be held via Zoom. Regular hours are below, and you are also welcome to schedule with me.

Jacob Ciszek

Friday 12:00 P-1:00 P

Jacob Ciszek's Personal Meeting Room

<https://luc.zoom.us/j/7357703502>

Michael Carr

Tuesday 10:00-11:00A

Academic Honesty & Discipline: Honesty is the foundation of the academic system and hence is of the utmost importance. All lab reports should be exclusively your own work and no outside assistance is allowed. In addition, lab reports will be submitted through “turnitin” which automatically checks your text for similarities to content available on the web. In the unfortunate event that a student is caught cheating (plagiarism or other), 100 points will be deducted from your total grade and you will be brought to the attention of the Department Chair and Dean of the College who will determine if further action should be taken.

Grading: Your grade is determined primarily by your written reports with a minor portion resulting from other aspects (notebooks, safety, etc.). The breakdown can be seen below.

Grading Scale:

Lab Reports and Results	6 × 100 pts	600	
Required videos (2 weeks)	2 × 5 pts	10	A > 88%
Notebooks	3 × 10 pts	30	B > 78%
Safety	25 pts	25	C > 68%
Lab Report 1 Debrief	10 pts	10	D > 58%
Cleanup and Checkout	10 pts	<u>10</u>	
Total		685	

Lab Reports – These formal reports are to be turned in by **8:15A** the dates listed on schedule on the next page. Details of the lab report requirements can be found in three handouts given out the first day of class (*Pike p34-35, JACS, Lab Reports*).

Required Videos- The actual lab for week 1 and week 4 will be “performed” by watching a video of your TA demonstrating the lab experiment. These videos will be placed on Panopto which is accessible via sakai. You are required to watch all the material, and you must be logged in for it to register. Beyond that, the videos are useful because you will need values for amounts weighed out, observations, etc. for your reports.

Notebooks (in person only) – Notebooks are collected at the end of the class period listed in the schedule below. They will be graded for completeness/accuracy (4 pts), format (3 pts), and neatness (3 pts). Completeness includes your prelab which is checked at the start of the lab. When evaluating neatness, two random sentences will be chosen from your notebook. If every letter of that sentence is not clear, points will be deducted. Your notebook should follow the rules outlined in the handout (Pike p31-34). No notebook entries are needed for online components.

Safety (in person only) – Lab safety is paramount. It is important to me and it will be important to your future bosses. Hopefully it is important to you. Any time you are in the lab you should be wearing lab glasses or goggles. Good chemical hygiene should be employed. At no time should you be touching chemicals without gloves. At no time should gloves (dirty or not!) be touching anything outside the lab or your cell phone! Cell phone use is not allowed in lab though you may leave the lab if it is urgent. Computers should be segregated from experiments. Other unsafe practices are not allowed. 5 points are deducted per instance.

Cleanup (in person only) – For one or two class periods this semester (schedule at the bottom of the page), you are responsible for ensuring that the laboratory benches and common areas are clean and encouraging your classmates to cleanup after themselves. Drawers must also be kept clean.

Pluses and minuses are not indicated in the grading scale but will be given. This will be done according to the natural breakdown of the grade distributions. Expect this to be the closest 2% to the final A-B, B-C, and C-D divisions (e.g 88-90% is an A-)

Approximate schedule: (grey indicates online, white is in person)

1/21,22	Intro (zoom), Lab#1 **see online notes	1	
1/28,29	IR Spectra, Report drafting. **see online notes	2	
2/3,2/4		-	Report 1 due
2/4,2/5	Report 1 Debrief. **see online notes	3	
2/11,2/12	“Spring” break	-	
2/18,2/19	Lab #2: <i>trans</i> -[Co(en) ₂ Cl ₂]Cl. **see online notes	4	
2/25,2/26	Notebook & Safety, <i>cis</i> -[Co(en) ₂ Cl ₂]Cl, UV/vis, practice literature	5	
3/4,3/5	Lab #3: M(acac) ₃ (one partner Mn, one Cr)	6	Report 2, NB due
3/11,3/12	Magnetic Susceptibility / Infrared Spectroscopy	7	
3/18,3/19	Lab #4: Crystal Field UV-Visible Spectra	8	Report 3 due
3/25,3/26	Lab #5 NMR: Styrene Hydrosilylation Kinetics	9	Report 4 due, NB due
4/1,4/2	Good Friday, No Lab.		
4/8,4/9	NMR: Kinetics, Product Analysis	10	
4/15,4/16	Lab #6 or #7 Au Nanoparticle UV-vis	11	Report 5 due
4/22,4/23	Makeup Lab	12	Report 6 or 7 due, NB due
4/29,4/30	Cleanup/Senior Survey	13	

	Last Name	First Name	Cleanup Days	Lab Drawer
1.	Akhnoukh	Virina	3/4	TBD
2.	Almeida	Hannah	3/18	TBD
3.	Gasiorek	Brooklyn	3/25	TBD
4.	Marciniak	Emily	4/15	TBD
5.	Shawabkeh	Hanna	2/25	TBD
6.	Sisk	Tommy	3/12	TBD
1.	Gaines	Jake	3/5	TBD
2.	Hardeman	Charles	3/19	TBD
3.	Jamora	Kaitlyn	3/26	TBD
4.	Koska	Koska	4/16	TBD
5.	MacQueen	Jordan	2/26	TBD
6.	Nguyen	Michelle	3/13	TBD
7.	Silver	Kathryn	3/5	TBD

Online notes

- Week 1 Meet in main zoom session (will post link to sakai)
Intro - is synchronous via zoom
Lab 1a prelab talk - is synchronous via zoom
Lab 1a experiment - **video** is asynchronous (Panopto)
Return to zoom after the video to check back in with questions on experimental procedure (zoom)
- Week 2 Meet in main zoom session (will post link to sakai)
Report drafting – synchronous main session, working on report while on zoom.
Breakout sessions for writing assistance (periodic, can also request)
Can request a breakout with a classmate
Lab 1b IR – Breakout sessions (via schedule)
- Week 3 Zoom sessions according to posted schedule on Sakai
Debrief – synchronous zoom sessions, via schedule
- Week 4 No synchronous session required
Lab 2a prelab talk - is asynchronous **video** (Panopto)
Lab 2a experiment - is asynchronous **video** (Panopto)
We will be available online for the first 2 h of your scheduled lab for questions
(will post zoom link to sakai)