

Chemistry 341

Spring 2024

Course: Chemistry 341
Date: Monday, Wednesday
Time: 1:40-5:30P
Location: Flanner Hall 315
Textbook: None other than a bound laboratory notebook

Instructor: Prof. Jacob Ciszek
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Website: Sakai

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 as well as 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. In the same vein, there is an application component where you generate working products.

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. AI generated text/presentations is not allowable. 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 lab reports/brief though a significant portion results from other aspects (final quiz, notebooks, safety, etc.). The breakdown can be seen below.

Grading Scale:

Lab Reports and Results	3 × 100 pts	300	A> 88%
Lab Briefs and Results	3 × 20 pts	60	B> 78%
Final Quiz	50 pts	50	C> 68%
Notebooks	4 × 10 pts	40	D> 58%
Safety	25 pts	25	
Lab Report 1 Debrief	10 pts	10	
Cleanup	10 pts	<u>10</u>	
Total		495	

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-)

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*).

Late policy: Invariably, you may wonder what the policy is for turning in a lab report late. It is:
0-5 h (-5 pts) 5-24 h (-10 pts) 24-48 h (-15 pts) >48 h (-25 pts)

Lab Briefs – These are abbreviated versions of the report and should be the same tone, tenor and quality. The primary difference is they are covering only the results and discussion section, and

all grading components (e.g. "Format", "Completeness", etc.) are scaled by 1/5th to sum to 20 pts instead of 100. They should contain the entirety of the discussion but should not exceed 2 pages and may be as short as 1.5 pages. References are not needed, though appendixes may be.

Final Quiz – This quiz is effectively a recap of all the concepts and analysis covered in the results and discussion throughout the year. Review of your lab reports' results and discussion should prepare you well for the quiz.

Notebooks – 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).

Safety – 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 – For one class period this semester (schedule at the bottom of the next 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.

Office Hours: Both your TA (Bailey Hanson) and I are available to assist you with questions you may have. Regular office hours are below.

*Jacob Ciszek - Flanner 122
Monday 10 A-12:00 PM*

*Bailey Hanson - Flanner 314a
Tuesday 2-4 PM*

Approximate schedule (001):

1/15	– No class Martin Luther King Day		
1/22	Intro, Notebook & Safety, Lab#1	1	
1/29	<i>cis</i> -[Co(en) ₂ Cl ₂]Cl, UV/vis, practice lit, report draft	2	
2/3	Report #1 due	-	Report 1 due
2/5	Report 1 Debrief	3	
2/12	Lab #2: M(acac) ₃ (one partner Mn, one Cr)	4	NB due
2/19	Magnetic Susceptibility	5	
2/26	Lab #3 NMR: Styrene Hydrosilylation Kinetics	6	Report 2, NB due
3/4	Spring break		
3/11	NMR: Kinetics, Product Analysis	7	
3/18	Lab #4, OLED fabrication	8	Report 3 due, NB due
3/25	OLED testing	9	
4/1	Good Friday, No Lab. Missing Lab #5 Li battery anode, cathode, electrolyte You must either attend sect. 002 on 4/3 OR watch lab on panopto		
4/8	Li battery construction and testing	11	Brief 1 due
4/15	Lab #6, Au Nanoparticle+EM, UV-vis	12	Brief 2 due, NB due
4/22	Senior Survey, Final Quiz, Makeup Lab	13	Brief 3 due, Final Quiz

Approximate schedule (002):

1/17	– No class Martin Luther King Day		
1/24	Intro, Notebook & Safety, Lab#1	1	
1/31	<i>cis</i> -[Co(en) ₂ Cl ₂]Cl, UV/vis, practice lit, report draft	2	
2/5	Report #1 due	-	Report 1 due
2/7	Report 1 Debrief.	3	
2/14	Lab #2: M(acac) ₃ (one partner Mn, one Cr)	4	NB due
2/21	Magnetic Susceptibility	5	
2/28	Lab #3 NMR: Styrene Hydrosilylation Kinetics	6	Report 2, NB due
3/6	Spring break		
3/13	NMR: Kinetics, Product Analysis	7	
3/20	Lab #4, OLED fabrication	8	Report 3 due, NB due
3/27	OLED testing	9	
4/3	Lab #5 Li battery anode, cathode, electrolyte	10	
4/10	Li battery construction and testing	11	Brief 1 due
4/17	Lab #6, Au Nanoparticle+EM, UV-vis	12	Brief 2 due, NB due
4/24	Senior Survey, Final Quiz, Makeup Lab	13	Brief 3 due, Final Quiz

Makeup policy:

You are expected to be in lab. Any lab, if missed, is to be made up. All reports/brief are to be turned in on the scheduled day, regardless of whether a lab is missed. In the event that a lab is missed, you will watch the lab on Panopto to provide the amounts, measurement, observations needed to write the report/brief on time with the rest of the class. Your grade for the report/brief will contain a 5 pt deduction for the missing lab experiment. Points are returned when lab is made up.

Labs are made up on the makeup day. If a second makeup day is needed, you will double up labs for the last period. Since there is a second section, you can also inquire about the possibility of making the lab up in the second section, but there is no guarantee this will be allowed, as this is done on the availability of TA/instructor time during that section.

If you know you will be missing a day where notebooks are turned in, they should be turned into the TA before the absence.

If you are exhibiting any cold or flu like symptoms, you should remain at home. There is a makeup date provided, should you be out with illness.

Drawer assignments/Cleanup days

	Last Name	First Name	Cleanup Days	Lab Drawer
1.	Bharwad	Kishan	1/22	1 a, b
2.	Blahusiak	Ben	1/29	2 a, b
3.	Castro	J.A.	2/12	3 a, b
4.	Lambre	Alessandra	2/26	4 a, b
5.	Robles	Ysabel	3/18	5 a, b
6.	Roch	Sam	4/8	6 a, b
7.	Wright	Sam	4/15	7 a, b

	Last Name	First Name	Cleanup Days	Lab Drawer
1.	Dudley	Grace	1/24	1 a, b
2.	Marcus	Michael	1/31	2 a, b
3.	Patni	Hiba	2/14	3 a, b
4.	Shaikh	Yasmeen	2/28	4 a, b
5.	Vari	Isabella	3/20	5 a, b
6.	Zervos	Kelly	4/17	6 a, b

Loyola policies:

Pass/Fail Conversion Deadlines and Audit Policy

A student may request to convert a course into or out of the "Pass/No-Pass" or "Audit" status only within the first two weeks of the semester. For the Fall 2023 semester, students can convert a class to "Pass/No-Pass" or "Audit" through Monday, January 29th. Students must submit a request for Pass/No-Pass or Audit to their Academic Advisor.

Course Repeat Rule

Effective with the Fall 2017 semester, students are allowed only THREE attempts to pass Chemistry courses with a C- or better grade. The three attempts include withdrawals (W). The Department advises that it is preferable to complete a course with a grade of C or C-, and to demonstrate growth in future coursework, than to withdraw from a course.

After the second attempt, the student must secure approval for a third attempt. Students must come to the Chemistry Department, fill out a permission to register form or print it from the Department of Chemistry & Biochemistry website: <https://www.luc.edu/chemistry/forms/> and personally meet and obtain a signature from either the Undergraduate Program Director, Assistant Chairperson, or Chairperson in Chemistry. A copy of this form is then taken to your Academic Advisor in Sullivan to secure final permission for the attempt.

Student Accommodations

Loyola University Chicago provides reasonable accommodations for students with disabilities. Any student requesting accommodations related to a disability or other condition is required to register with the Student Accessibility Center (SAC). Professors will receive an accommodation notification from SAC, preferably within the first two weeks of class. Students are encouraged to meet with their professor individually in order to discuss their accommodations. All information will remain confidential. Please note that in this class, software may be used to audio record class lectures in order to provide equitable access to students with disabilities. Students approved for this accommodation use recordings for their personal study only and recordings may not be shared with other people or used in any way against the faculty member, other lecturers, or students whose classroom comments are recorded as part of the class activity. Recordings are deleted at the end of the semester. For more information about registering with SAC or questions about accommodations, please contact SAC at 773-508-3700 or SAC@luc.edu.

Academic Integrity

All students in this course are expected to have read and to abide by the demanding standard of personal honesty, drafted by the College of Arts & Sciences, which can be viewed at:

<https://www.luc.edu/cas/advising/academicintegritystatement/>

A basic mission of a university is to search for and to communicate the truth as it is honestly perceived. A genuine learning community cannot exist unless this demanding standard is a fundamental tenet of the intellectual life of the community. Students of Loyola University Chicago are expected to know, to respect, and to practice this standard of personal honesty.

Academic dishonesty can take several forms, including, but not limited to cheating, plagiarism, copying another student's work, submitting false documents, and deliberately disrupting the performance of other class members. Standards apply to both individual and group assignments.

See "Academic Honesty and Discipline" on page 1 of the syllabus for further details.

Loyola University Absence Policy for Students in Co-Curricular Activities (including ROTC):

Students missing classes while representing Loyola University Chicago in an official capacity (e.g., intercollegiate athletics, debate team, model government organization) shall be allowed by the faculty member of record to make up any assignments and to receive notes or other written information distributed in the missed classes.

Students should discuss with faculty the potential consequences of missing lectures and the ways in which they can be remedied. Students must provide their instructors with proper documentation i.e., "Athletic Competition & Travel Letter" describing the reason for and date of the absence.

This documentation must be signed by an appropriate faculty or staff member and it must be provided to the professor in the first week of a semester. It is the responsibility of the student to make up any assignments. If the student misses an examination, the instructor is required to allow the student to take the examination at another time.

(<https://www.luc.edu/athleteadvising/attendance.shtml>)

Students who will miss class for an academic competition or conference must provide proper documentation to their instructor as early in the semester as possible.

Accommodations for Religious Reasons

If you have observances of religious holidays that will cause you to miss class or otherwise effect your performance in the class you must alert the instructor **within 10 calendar days of the first class meeting of the semester** to request special accommodations, which will be handled on a case by case basis.

Privacy Statement

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

Other

Materials from the course cannot be shared outside the course without the instructor's *written permission*.