

CHEM 2110L Course Syllabus Spring 2025

Instructor: Dr. Jared Anderson, 0210 Hach Hall, 294-8356, andersoj@iastate.edu

Instructor Office Hours: Please see the CHEM 2110 syllabus for office hours and location.

Lab Supervisor: Dr. Feili Qin, 1279 Gilman Hall, email: flqin@iastate.edu; office hours by appointment.

Laboratory Location: 1201 & 1202 Gilman Hall

Laboratory Schedule:	Section	Time	Teaching Assistant
	1	Mon Wed 12:05 – 2:55 PM	Rasmin AKhter
	2	Tue Thu 9:00 AM – 11:50 AM	Donghyun Ryoo
	3	Tue Thu 3:10 PM – 6:00 PM	Md Ruhul Amin

CHEM 2110 and 2110L are co-requisite courses, i.e., students in CHEM 2110L are required to take CHEM 2110 at the same time or to have already received credit in CHEM 2110. Co-requisite course requirements are strictly enforced: Students who do not meet the co-requisite should drop the course or **they will receive an F in the course**. Students who drop or audit CHEM 2110 will be required to drop CHEM 2110L and vice versa. Students may not register to audit Chem 2110 after 5:00 PM on Monday January 27th, 2025. The audit does not count towards full-time student status. To add or drop recitation or lab sections during the first week of class, use Workday. After the first week, please email amwade@iastate.edu or call 515/294-6361. The last day to drop CHEM 2110 is April 4th.

Learning Objectives: 1) Attain lab skills for quantitative chemical analysis; 2) learn how to perform basic instrumental analysis; 3) know how to interpret and calculate data; and 4) work safely in the laboratory.

Grading:	1) Quantitative Analysis (13 unknowns @ 50 points each)	650
	2) Notebook Checks (4 checks @ 50 points each)	200
	3) Pre-lab questions (13 pre-labs @ 15 points each)	195
	4) Lab Reports (13 lab reports @ 35 points each)	455
	5) Locker Checkout	40
	6) TA evaluation of students	50
Total Points:		1590

The final grade distribution will be determined by the instructor at the end of the course.

Course Materials:

- Chem2110L lab manual and supplementary reading material will be supplied *via* Canvas.
- You must purchase a lab coat and safety glasses or goggles. **Lab coat and safety goggles are required by the second lab meeting.**
- An iPad will be provided as an electronic laboratory notebook. A Logitech Crayon smart pencil will also be provided. You will use Microsoft Word to take in lab notes. You will save your electronic lab notebook on OneDrive.
- Submission links for your pre-labs, unknown reports and lab reports are available on Canvas.
- **Lab Check In:** Each student is assigned one locker and a set of equipment for use throughout the semester. You will check in on the first day of the class. Important information regarding check-in procedures, safety,

and laboratory notebooks contained in the lab manual will be covered. **Before checking In - Carefully read pages 1 - 12 of the Lab Manual.**

- **Lab Safety:** *Personal Protective Equipment (PPE) such as safety eyewear, gloves, lab coat, long pants and fully covered shoes are important components for lab safety. You will not be allowed to do the experiment if you are not in proper attire. You are NOT allowed to wear these PPE (gloves and lab coat) out in the hallway to avoid contaminations. Sandals are NOT allowed. Failing to follow these safety rules will also result in removal from the lab and the loss of points.*
- **Pre-lab Questions:** Throughout the laboratory manual, there are pre-lab questions. Each student must answer all pre-lab questions for each experiment in their electronic NOTEBOOK and submit pre-lab for each experiment on Canvas. **Students are not allowed to start the experiment before turning in their pre-labs.** Thirteen out of fourteen pre-labs will be graded except experiment 2. Pre-labs submitted late will not be graded. All pre-labs must be submitted on Canvas.
- **Issuing of Unknowns:** Your teaching assistant (TA) will issue the unknown samples (after receiving the pre-lab questions). Each sample has a number that must be entered in your laboratory notebook. This number is needed when reporting the results of the analysis. **Results for an experiment must be reported within 1 week of completion of the experiment.**
- **Reporting of Unknown Results:** The unknown report is due **one week** from the date the experiment was finished. Your notebook will be used to determine when the lab was completed. Report the results from each trial you performed, and the mean and standard deviation of all the trials. The maximum score on a lab experiment is 50, and the minimum score for a completed lab is 20. Students who fail to complete an experiment will receive zero points for that experiment.
- **Lab Report Format:**
 - Objective (1~ 2 sentences): 5 points
 - Principles (1~ 2 paragraphs or half a page): 15 points
 - Results and Discussion (show all the calculations) 15 points
 - The whole report is up to 2-3 pages

The deadline for turning in the lab report of each experiment is one week. Students who fail to turn in the lab report in one week after finishing the lab will receive zero points for that experiment. All lab reports must be submitted on Canvas.

- **Calculation Errors and Repeating an Experiment:** If an unsatisfactory score is received on an experiment due to calculation error, you may check for calculation errors and submit recalculated result. **Five points will be deducted for a recalculation.** Your TA will check your old calculation with the new calculation before it is accepted. Your TA will also check to see that your recalculation is written in your notebook. Only one recalculation is allowed per experiment, and it must be handed in one week after the initial grade is posted on Canvas.

If no calculation error was made and you are still dissatisfied with your score, you may repeat the experiment one more time using a different sample; **it is allowed only if there is sufficient time and the necessary apparatus is available.** This sample should be obtained from your TA when you are ready to repeat the experiment. **Five points will be deducted** from the grade received from the new experiment. The higher score between the two trials will be your final score for that experiment.

- **Missing a Lab Meeting:** TA will take roll at each lab meeting. **If a student misses a lab due to extenuating circumstances** (Medical emergency, funeral attendance etc.) and wishes to make up the time, he/she must obtain permission from Dr. Qin within 1 week of missing the lab. You must inform us about your absence ahead of time. We request documentations about your absence. Upon approval, Dr. Qin will notify the TA that you will be attending his/her laboratory section to make-up a lab). **In addition, you MUST attend your assigned lab section.**
- **Lab Locker Check Out:** When you have completed all laboratory work for the entire course, you should check out of your locker. To avoid waiting at the end of the semester, it is a good idea to check out as soon as you can. Otherwise attendance on the equipment check-out day is mandatory.
- **Lab Notebook Check:** Your lab notebook will be checked four times during the semester. Your lab notebook will be graded based upon the degree to which the notebook follows the notebook guidelines. You must submit your entry as a single file on Canvas for each notebook check.

Laboratory Notebooks (pp. 10 – 12, lab manual; also see sample notebook in lab):

- Each entry must begin with the date and signed and dated at the end of lab period.
- The beginning of each experiment should be clearly identified with its title.
- All writing must be legible.
- All data must be recorded directly onto the notebook with units.
- All calculations must be done in the notebook.
- Calibration plots must be included in the notebook.
- Pay attention to the instructions in the manual – some experiments require extra calculations or plots as explained in the lab manual.

Teaching Assistants:

- Help sessions/office hours are for help with calculations, pre-lab and practice questions.
- TA office hours will be held at 1215 Gilman Hall.

Section	Lab Time	TA	Office Hours	Email
1	MW 12:05 -2:55 PM	Rasmin Akhter	MW 3 – 4 PM	rasmin@iastate.edu
2	TR 9 – 11:50 AM	Donghyun Ryoo	R 12 – 1 PM F 1 – 2 PM	rydh2000@iastate.edu
3	TR 3:10 – 6:00 PM	Ruhul Amin	TR 2 – 3 PM	ruhul41@iastate.edu

Check in: Tuesday January 21 & Wednesday January 22

1st Lab Experiment: Thursday January 23 & Monday January 27

Important Course Policies:

- Late lab report submissions are generally not accepted. Rare exceptions are made for serious reasons such as severe illness or family emergencies. If such is the case, email your TA, instructor or lab coordinator as soon as humanly possible for a deadline extension.
- You must attend your assigned section. You may not makeup an experiment in a different section without permission from your instructor.

- It is your responsibility to make sure that submissions are properly submitted by the deadline. In case of technical problems, please email your TA IMMEDIATELY. Do not wait until the next day or your submission will receive a zero.
- Any complaint regarding a grade MUST be brought up within 1 week of receiving the grade to have any issue addressed. DO NOT WAIT UNTIL THE END OF THE SEMESTER.
- Presence at Lab Check-out is mandatory unless you have an excused absence. Lab Check-out must be done on the scheduled day at the scheduled time. Check-out is worth 40 points.
- Grade concerns brought up after final grades are submitted will not be considered unless there is a demonstrable error on the part of instructor or TA involved.
- Use of personal electronic devices of any type (e.g., laptops and cell phones) is strongly discouraged in the lab. If you choose to use your own personal device in the lab, you do so at your own risk since it is a lab environment.

Syllabus Statements

- **Free Expression:** Iowa State University supports and upholds the First Amendment protection of freedom of speech and the principle of academic freedom in order to foster a learning environment where open inquiry and the vigorous debate of a diversity of ideas are encouraged. Students will not be penalized for the content or viewpoints of their speech as long as student expression in a class context is germane to the subject matter of the class and conveyed in an appropriate manner. No employee, student, applicant, or campus visitor is compelled to disclose their pronouns. Anyone may voluntarily disclose their own pronouns.
- **Accessibility Statement:** Iowa State University is committed to advancing equity, access, and inclusion for students with disabilities. Promoting these values entails providing reasonable accommodations where barriers exist to students' full participation in higher education. Students in need of accommodations or who experience accessibility-related barriers to learning should work with Student Accessibility Services (SAS) to identify resources and support available to them. Staff at SAS collaborate with students and campus partners to coordinate accommodations and to further the academic excellence of students with disabilities. Information about SAS is available online at www.sas.dso.iastate.edu, by email at accessibility@iastate.edu, or by phone at 515-294-7220.
- **Discrimination and Harassment:** Iowa State University does not discriminate on the basis of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. Veteran. Inquiries regarding non-discrimination policies may be directed to Office of Equal Opportunity, 3410 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, Tel. 515-294-7612, Hotline 515-294-1222, email eooffice@iastate.edu
- **Religious Accommodation:** Iowa State University welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request the reasonable accommodation for religious practices. In all cases, you must put your request in writing. The instructor will review the situation in an effort to provide a reasonable accommodation when possible to do so without fundamentally altering a course. For students, you should first discuss the conflict and your requested accommodation with your professor at the earliest possible time. You or your instructor may also seek assistance from the Dean of Students Office at 515-294-1020 or the Office of Equal Opportunity at 515-294-7612.

- **Mental Health and Well-Being Resources:** At Iowa State, we're committed to your success and well-being. As a Cyclone, you can access 24/7 resources, services, and people dedicated to helping you achieve your goals and be your best in and out of the classroom. Whether you need academic support or just someone to talk to, we're here for you at Cyclone Support: cyclonesupport.iastate.edu.