

# CHM2095L: CHEM LAB 1 FOR ENG, FALL 2024

CLASS #: 10957, 10958, 10959, 10960, 10961, 10962, 10963, 10964, 10976, 10977

## INSTRUCTOR INFORMATION

### COURSE COORDINATOR

Instructor	Email	Phone	Office Hours
Dr. Korolev Instructional Professor	Email in Canvas preferred korolev@ufl.edu	352-392-1087 (email preferred)	MWF 9:30am-10:30am in LEI 308 and by appt

### LAB MANAGERS

The lab managers are Candace Biggerstaff and Autumn Chiotti. They can be contacted via Canvas email.

### TEACHING ASSISTANT

Your teaching assistant will be assigned during the first week of the semester. You will meet your teaching assistant during the first lab meeting and they will provide you with their contact information.

## GENERAL INFORMATION

### COURSE DELIVERY

This course will be delivered 100% face-to-face. All lab meetings will occur during your scheduled lab time. The schedule is subject to change and changes will be communicated via Canvas announcements.

### MEETING TIMES

CHM2095L meets once per week in SFH 110 during your scheduled lab period. The meeting time can be found on your schedule on ONE.UF. You will enter the lab from the atrium in SFH once the lab managers let you in.

### DESCRIPTION/GOALS

CHM2095L is designed to introduce you to common laboratory techniques and equipment used in the general chemistry and engineering laboratories, to help you gain understanding and proficiency in their use, and help you explore the process of doing experimental chemistry, and to illustrate representative examples of the useful and important concepts you are learning in the CHM2095 lecture. The course serves to teach the scientific method, skills for problem solving, general chemistry knowledge, and a connection to the principles that govern the natural world.

Specifically, students will be able to:

1. Safely handle, use and dispose of chemicals, identify chemical hazards and risks, and use databases to locate chemical safety information.
2. Apply the scientific method and demonstrate proper and safe use of lab equipment and proficiency in relevant techniques to conduct experiments, and to work effectively in small groups and teams.
3. Describe the importance of ethical and responsible conduct in a laboratory setting.
4. Design, construct, and interpret data tables and graphs accurately to communicate experimental findings.
5. Perform accurate and precise quantitative measurements, analyze data statistically and assess reliability of results.
6. Communicate scientific findings and demonstrate scientific reasoning effectively in written form
7. Apply the principles of the engineering design process to solve engineering problems.

## COURSE REQUIREMENTS

### REQUISITES

Requisite information and credit suitability can be found in the Undergraduate Catalog.

### REQUIRED MATERIALS & FEES

You will require: a computer with an internet connection and Excel, a suitable laboratory notebook such as a standard composition notebook, and department approved safety glasses or goggles. See the safety glasses requirements at <https://otl.chem.ufl.edu/safety-glasses/>. Additional course fee: \$30.00

### GOGGLES AND ATTIRE

You must be wearing department approved safety glasses or goggles and be properly attired to be admitted to the laboratory at all times, including on the first day of lab. Anyone without safety glasses, or who is inappropriately attired, will not be allowed into the lab. Additionally, no gum chewing or headphones will be allowed. If you are asked to leave the lab due to improper attire, you will not be permitted a makeup. You can leave and return as long as it is within 15 minutes of the start of the period.

### LAB SAFETY

You are responsible for reviewing the safety information provided in Canvas. All of the activities worth credit for the course will be locked in Canvas until you satisfactorily complete the Safety Contract.

## LAB SCHEDULE (SUBJECT TO CHANGE)

This lab schedule is subject to change - students should keep their schedule free so that they are available during their scheduled lab meeting time every week. Flex days may be used if regularly scheduled lab days need to be rescheduled for reasons such as inclement weather, lab closure, etc. If no lab days are cancelled, then flex days may not be utilized. Changes will be clearly communicated via Canvas announcements; it is students' responsibility to read the Canvas announcements.

DATES	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
Aug 19 - Aug 23	NO LABS			
Aug 26 - Aug 30	NO LABS - First Online Assignments due August 30 <sup>th</sup> at 11:49pm			
Sep 2 - Sep 6	NO LABS	DC0: Restore and Improve Urban Infrastructure: Intro Lab		
Sep 9 - Sep 13	DC0: Intro Lab	DC1: Provide Access to Clean Water: Design Phase		
Sep 16 - Sep 20	DC1: Design	DC1: Provide Access to Clean Water: Conduct Phase		
Sep 23 - Sep 27	DC1: Conduct	DC1: Provide Access to Clean Water: Analyze Phase		
Sep 30 - Oct 4	DC1: Analyze	DC2: Make Solar Energy Economical: Design Phase		
Oct 7 - Oct 11	DC2: Design	DC2: Make Solar Energy Economical: Conduct Phase		
Oct 14 - Oct 18	DC2: Conduct	DC2: Make Solar Energy Economical: Analyze Phase		
Oct 21 - Oct 25	DC2: Analyze	DC3: Develop Carbon Sequestration Methods: Design Phase		
Oct 28 - Nov 1	DC3: Design	DC3: Develop Carbon Sequestration Methods: Conduct Phase		
Nov 4 - Nov 8	DC3: Conduct	Flex Days		
Nov 11 - Nov 15	NO LABS	DC3: Develop Carbon Sequestration Methods: Analyze Phase		
Nov 18 - Nov 22	DC3: Analyze	Flex Days		
Nov 25 - Nov 29	NO LABS			
Dec 2 - Dec 6	Flex Day	NO LABS		
Dec 9 - Dec 13	Final Lab Exam on Wednesday, December 11 <sup>th</sup> from 12:30pm-2:30pm			

## ATTENDANCE INFORMATION

### FIRST DAY OF LAB

Your first in-person lab meeting will be the week of September 2<sup>nd</sup> (Monday students will begin September 9<sup>th</sup>) but you have assignments due the week prior. The first deadline for online assignments is August 30<sup>th</sup> at 11:59pm - check Canvas for details. During your first lab meeting, you will meet your TA and fellow classmates, and complete the first lab activity. You will not be allowed to enter lab without proper safety attire, including approved eye protection. Prior to attending each lab period, you must familiarize yourself with the lab background and procedure, and complete the pre-lab quiz and submit your pre-lab notebook online. Pre-lab assignments will be due at 8:00am on your scheduled lab day. During the lab meeting, you will work on performing the lab and completing all post-lab assignments. Your lab workstation is equipped with a computer on which you can access all of the lab materials. Your attendance will be recorded during the lab period. After the lab period, you will submit your post-lab assignments online to be graded. Post-lab assignments will be due at 11:59pm on the day of your scheduled lab.

### LAB PERIOD

You are required to attend lab in-person during your scheduled lab period. If you are well-prepared, you should not experience difficulties completing the experiments within the allotted timeframe and submitting post-lab assignments that day. Your attendance will be recorded during lab. If you are more than 15 minutes late, you will not be allowed to enter lab and you forfeit your attendance points for the day. Any student who has an unexcused absence will not be allowed to submit any post-lab assignments.

### ABSENCES

Excused absences are for extenuating circumstances only: documented illness, family emergencies, or university approved absences. Travel, non-emergency doctor or dentist appointments, or extracurricular activities do not justify an excused absence. Missing lab due to improper lab attire does not qualify for an excused absence. Emailed requests to “preview” excused absences will be ignored; it should be clear what constitutes an excused absence.

Students who miss lab due to extreme circumstances beyond their control may submit a request for a deadline extension within 7 days of the missed deadline. To have a request considered for approval, you must (1) complete an Absence Request Form on Canvas; and (2) provide documentation by either attaching a doctor's note (if due to illness) or request an excuse note from the Dean of Students Office if due to a family emergency. Requirements for class attendance and make-ups in this course are consistent with university policies that can be found in the [Undergraduate Catalog](#). Any student who misses more than 2 lab sessions (excluding religious observances, disability related absences, or military leave), whether excused or unexcused, will receive a grade of E in the course.

## GRADING

### DEADLINES AND LATE POLICY

The first assignments for the course are due online on August 30<sup>th</sup> at 11:59pm. The remaining lab activities will be locked on Canvas until the safety contract is completed. If you miss any assignments due to not completing the contract, you will forfeit the grades.

Each week you will have pre-lab assignments and post-lab assignments. The pre-lab assignments will be due at 8:00am the day of your scheduled lab period. All other lab-related assignments are due by 11:59 pm the day of your scheduled lab period.

Pre-lab assignments cannot be completed late for any credit. For best performance, use only Firefox or Chrome for quizzes. Make sure you start well in advance of the deadline in case your computer's clock differs from official Canvas time. All due dates/times are in EST.

Post-lab assignments that are submitted late will be deducted 25% credit per day that they are late. The penalty is applied even if the submission is received by Canvas one second past the 11:59pm deadline, so be mindful of time. Emailed assignments are not considered for grading.

We highly recommend you submit assignments early and verify they've been submitted through Canvas. We do not recommend using the Canvas App to submit assignments - please use a web browser to avoid issues.

For extensions due to illness/emergency, a Dean of Students note must be provided for at least the 2 days prior to the assignment's deadline for accommodations to be considered. Extensions will not be given because of technical or personal issues that occur within 24 hours of the assignment deadline.

## RE-GRADES

All lab assignment grades are graded by your TA so you should communicate any lab notebook grade disputes to your TA. Your TA will address your concerns at that time and make any necessary corrections. If your TA finds it necessary to re-grade your lab notebook, he/she will correct the grade on your notebook and on his/her grade sheet immediately. The notebook must be scanned and submitted to Canvas to the relevant assignment in order for points to be considered toward your course grade.

Regrades of assignments submitted through Canvas, typically via file upload, must be requested within 7 days of a grade being assigned, and should be directed to your TA. If there was a technical issue with the file that was submitted on Canvas, the file can be resubmitted via the comments section to be regraded, but the assignment will suffer a 50% penalty. Technical issues are the student's responsibility so it is recommended that you check your submission when you upload it on Canvas.

## GRADE BREAKDOWN

Each laboratory exercise is comprised of a Pre-Lab quiz, a Pre-Lab Notebook grade, a Post-Notebook grade, a Post-Lab exercise, and various other assignments specific to that lab. Each lab exercise as a whole is weighted equally to your final grade. Within each lab exercise, assignments are weighted according to the published point value. If there is any confusion about this, please see the instructor. Detailed information regarding each of these grading items is provided in Canvas. Assignment weights are as follows:

Assignment Group	Weight %
Safety/Syllabus/Surveys	5%
Pre-Lab Assignments	30%
During-Lab Assignments	10%
Post-Lab Assignments	40%
Final Lab Exam	15%

Grade scale (note: there is no rounding to your score in Canvas):

Letter	A	A-	B+	B	B-	C+	C	D+	D	D-	E
Cutoff	≥93.0	≥90.0	≥86.0	≥83.0	≥80.0	≥76.0	≥70.0	≥66.0	≥63.0	≥60.0	<60.0

## ASSIGNMENT DESCRIPTIONS/TIME COMMITMENT

**Syllabus Quizzes** are designed to assess your knowledge of the content of the course syllabus. The syllabus does

contain a lot of information, and you can refer to the syllabus when needed.

**Safety Quizzes** are designed to assess knowledge of safety terms, pictograms, and other safety information we cover each week. Also included in the 'Safety' category is the Safety Contract, which is an acknowledgement of general safety considerations for the lab, specific safety information related to our general chemistry lab, and familiarity with portions of the American Chemical Society's Guidelines for Chemical Laboratory Safety (a document is provided for you to review throughout the semester).

**Pre-Lab Quizzes** are designed to assess your knowledge of the background information for each lab activity. Questions include content and calculations similar to those you will perform during or after the lab.

The **Pre-Lab Notebook** is designed to assess your preparedness for each lab activity and familiarity with the safety of chemicals used, knowledge of procedural steps, or readiness otherwise (calculations performed, data looked up in a reference, etc.).

**Pre-lab quizzes and notebook** typically involve <30 min of video instruction and 2-5 p reading, and can all be completed <90 min for students who have completed or are enrolled in the corequisite course (CHM2095).

**During-Lab Assignments** include various graphs or pictures that are required for a lab and attendance quizzes. The **During-Lab Attendance Quiz** is due within the first 20 min of the scheduled lab period and must be completed in the lab from a lab workstation. The attendance quiz counts as part of the during-lab assignment grade category. If you fail to complete the quiz within the first 20 min you can complete it later during your lab period only, but will incur a late penalty of 25%.

**Post-Lab Assignments** are .pdf scans of your laboratory notebook. You can write more than is required in the grading rubric for each but each lab has specific requirements, so refer to the grading rubrics each week. You will record observations, make calculations, you may write abbreviated procedural steps, discuss sources of error, and make tables of data and sketch experimental set-ups in your lab notebook.

**Surveys** may be part of educational studies or may ask you about specific aspects of the course or for an evaluation of your TA near the end of the semester.

**During- and post-lab assignments** are designed to be completed during the allotted lab period.

## FINAL LAB EXAM

The final lab exam will be administered during our assigned final exam time on Wednesday, December 11<sup>th</sup> from 12:30pm to 2:30pm in rooms TBA. This is a timed and proctored exam that will assess skills that you have used throughout the semester.

Bubbling errors will not be negotiated. A 5 point penalty will be applied for failure to bubble in a UFID correctly or not taking the exam in the assigned room. A 30 point penalty will be applied for failure to bubble in a form code or the wrong form code or for using a writing implement that cannot be scanned (e.g. a pen).

Exam absences will be handled in accordance with official UF academic regulations. For more information, see <https://catalog.ufl.edu/UGRD/academic-regulations/> . See below for further clarification for two different types of situations:

(1) Conflicts with other events: this should be rare, as the final exam is during the registrar scheduled lab period. Such reasons may include religious holidays, military obligations, special curricular requirements (e.g., attending professional conferences), or participation in official UF-sanctioned activities such as athletic competitions, etc. For more information on such absences see the official UF Policy at <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/#absencestext> ). If you must be absent for an exam due to a documented and approved conflict known in advance, you must e-mail your instructor (within Canvas) the documentation at least one week prior to the scheduled exam and an early conflict exam will be scheduled for you.

(2) Missing an exam due to an emergency or sudden illness: If you are absent for an exam due to an unpredicted documented medical reason or family emergency, you must contact the instructor as soon as possible, and you may be asked to have your excuse verified by the Dean of Students Office (DSO). Your instructor will follow UF academic regulations in evaluating the notification and/or documentation received from you or from the DSO on your behalf. Once your instructor is satisfied with the validity of your exam absence a make-up exam will be scheduled after a reasonable amount of time, i.e., before the end of the semester. If your documentation is deemed insufficient to excuse your absence you will receive a zero on the missed exam.

Exams taken at any other time than the regularly scheduled exam time have different questions that assess the same material at a comparable level of difficulty. Students are not able to review these exams until after the semester has concluded.

## EDUCATIONAL RESEARCH STUDY

This semester, CHM2095L is part of a chemical education research study within the Department of Chemistry and the College of Education at UF, investigating persistence in STEM fields among students enrolled in our undergraduate lab courses. The study includes three main surveys, the first of which includes an Informed Consent question. The study also includes weekly post-lab exit surveys.

To participate in the study, students will agree to the Informed Consent Form as part of the first research survey by the survey due date. If you do not wish to participate in the study and have your survey data removed from the collected data, you still must complete the surveys. We do ask you to participate in the study since the data collected may prove valuable. Please note that you will have to complete all surveys prior to their due dates to earn a portion of your course grade; these surveys are included in the Survey category in your gradebook. Participation in the study does not influence your course grade in any way.

## UNIVERSITY POLICIES

### ACCOMMODATING STUDENTS WITH DISABILITIES

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with the instructor and discuss their access needs, as early as possible in the semester.

### ACADEMIC MISCONDUCT

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida. The following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.”

## U MATTER, WE CARE

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing Staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

## EVALUATIONS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## INCLUSIVE LEARNING ENVIRONMENT

We embrace the University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinion or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." We are committed to fostering an open and inclusive classroom and laboratory environment in our College, where every student, guest instructor and contributor feels valued. If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office on Multicultural & Diversity Affairs Website: <http://www.multicultural.ufl.edu/>

## COURSE COMMUNICATION

### NETIQUETTE

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats. Please be mindful of your comments and responses, and make sure that they are respectful and inclusive to all participants.

### CONFLICTS

If you experience issues with the course that you cannot resolve with your TA, please contact Dr. Korolev by email or in-person. Don't wait until the end of term to resolve an ongoing issue.




## DISCLAIMER

This syllabus represents my current plans and objectives. If those need to change as the semester progresses, which is not unlikely, then the changes will be communicated to the class clearly.




## SAMPLE GRADING RUBRICS

Pre-lab notebook assignment:






DC1 Conduct Pre-Lab   			
Criteria	Ratings		Pts
Preliminary Questions	3 pts All preliminary questions are appropriately answered.	0 pts No Marks	3 pts
Dilutions	2 pts Student shows work for all dilution calculations in part 3	0 pts No Marks	2 pts
			Total Points: 5

During-lab graph assignment:

DC1 During-Lab Graphs   			
Criteria	Ratings		Pts
Content	4 pts Student draws both calibration graphs that include all data points and are scaled appropriately.	0 pts No Marks	4 pts
Lines	1 pts Each graph shows a line of best fit	0 pts No Marks	1 pts
			Total Points: 5

Post-lab notebook assignment:

DC1 Analyze Post-Lab   			
Criteria	Ratings		Pts
Equations	2 pts Student determines the equation of the best fit line for each graph.	0 pts No Marks	2 pts
Calculations	4 pts Student determines the concentration of the unknown and % error using both methods	0 pts No Marks	4 pts
Deliverable	2 pts Student writes a technical memo that addresses all of the requirements	0 pts No Marks	2 pts
Report Quality	2 pts Report is legible and clear. All writing is in pen. Date and lab partner are included.	0 pts No Marks	2 pts
			Total Points: 10