CHM2046L GEN CHEM II LAB UF ONLINE

SUMMER A 2025; CLASS #: 15043

INSTRUCTOR INFORMATION

Instructor	Email	Phone	Office Hours
Dr. Korolev	Email in Canvas only korolev@ufl.edu	352-392-1087 (email preferred)	Virtual office hours M 1-3 PM EST

GRADUATE TEACHING ASSISTANT

TBA in the first week of the semester. TAs will have weekly virtual office hours throughout the semester.

GENERAL INFORMATION

REQUISITES

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

COURSE FEES

Materials & Supplies Fee: $45.45

COURSE DELIVERY AND MEETING TIMES

This course is delivered in a hybrid format. Students complete pre-lab and post-lab work online at home. Students attend in-person labs June 9 – June 13. In-person lab sessions meet twice a day, 9:30am-12:15pm and 2:00pm-4:45pm. All due dates and times are in EST. See due date schedule below.

DESCRIPTION/GOALS

As both a general education requirement and major's course, CHM2046L is designed to introduce you to common laboratory techniques and equipment used in the general chemistry laboratory, 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 CHM2046 lecture.

By the end of this course, students will be able to apply the scientific method, to collect data and perform calculations, to create and analyze tables of data and graphs of various forms, and to analyze experimental error. Students will be able to refer to literature data and will acquire library skills. Students will be able to use a variety of laboratory glassware and equipment safely, and will be able to handle chemicals safely. Students will learn fundamentals of safety in an academic laboratory setting.

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

GENERAL EDUCATION

Primary General Education Designation: Physical Sciences (P) (area objectives available here)

A minimum grade of C is required for general education credit. Courses intended to satisfy the general education requirement cannot be taken S/U.

Physical science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern physical systems. Students will formulate empirically-testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

The course objectives align with the UF General Education student learning outcomes and physical science area learning outcomes:

General Education SLO	Physical Science SLO	Course Objective Alignment	Assessment
Content	Identify, describe, and explain the basic concepts, theories and terminology of natural science and the scientific method; the major scientific discoveries and the impacts on society and the environment; and the relevant processes that govern biological and physical systems.	Objectives 1-6	All assessments offer opportunities for students to demonstrate content knowledge.
Critical Thinking	Formulate empirically-testable hypotheses derived from the study of physical processes or living things; apply logical reasoning skills effectively through scientific criticism and argument; and apply	Objectives 1-6	All assessments offer opportunities for students to demonstrate critical thinking skills.

	techniques of discovery and critical thinking effectively to solve scientific problems and to evaluate outcomes.		
Communication	Communicate scientific knowledge, thoughts, and reasoning clearly and effectively.	Objective 3-6	Pre- and post-lab notebooks, during-lab assignments, post-lab assignments.

A complete list of student learning outcomes and technical skills is posted in Canvas, organized by laboratory experiment.

LABS

Each week you may be asked to participate in a variety of activities including discussion board assignments, quizzes, graph creation, calculations, data analysis, etc. Introductory assignments are due the first week after Drop/Add – check Canvas for due dates. The pre-lab assignments for the in-person labs are due the second week of the course.

The in-person labs meet the week of June 9 - June 13. You are not permitted to enter the lab without proper safety attire, including approved eye protection. If you have familiarized yourself with the labs, you should be able to complete them within the lab period. If you have an unexcused absence for a lab, you will not be able to submit the post-lab assignments. Post-lab assignments are due one week after the labs.

COURSE MATERIALS AND SAFETY

REQUIRED MATERIALS

- All UF students are expected to have reliable access to a computer, especially for an online course. The computer must have an internet connection, webcam, microphone, and Excel. Computer must meet UF's computing requirements and meet Honorlock's system requirements: honorlock.com/support.
- You require a suitable laboratory notebook. Our recommendation is a standard composition notebook. Electronic devices are not suitable for notetaking.
- You are required to log in to Canvas while in the laboratory. UF requires use of DUO multi-factor authentication to do so. You must bring with you a device capable of and registered to enable DUO multi-factor authentication to each scheduled lab period. Information about DUO, including how to purchase a Token and how to generate up to 5 passcodes for future use, is posted here. For questions, contact the UFIT Help Desk.
- Department approved safety glasses/goggles, required for the first day of lab. These must be worn prior to entry and at all times while in lab. Suggestions are here: https://otl.chem.ufl.edu/safety-glasses/ .
- Proper attire:
    - Shirt: loose fitting, covers whole back, torso and abdomen with raised arms, sleeves cover shoulders
    - Pants: full length (no shorts, capris, cropped pants), no leggings, no holes/rips, skin should not be visible at ankle.

- Shoes: close-toed and cover whole foot, no holes (i.e. not Crocs)

Safety is our priority. Anyone without the necessary safety glasses, or who is inappropriately attired, will not be allowed into the lab. No gum chewing or headphones are permitted. 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 you return within 15 min of the start of your lab period.

Your course will be in a lab environment where corrosive, flammable, liquid, and other hazards are present. Any personal items brought in the lab are subject to these hazardous conditions. The department is not liable for damages to personal items.

SAFETY

You are responsible for reviewing the safety information provided in Canvas. In addition, there is a series of safety-focused assignments in the course which are worth a dedicated portion of your grade.

DUE DATE SCHEDULE (SUBJECT TO CHANGE)

THEME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
WEEK 1: ORIENTATION WEEK	May 12 No assignments due; drop/add	May 13 No assignments due; drop/add	May 14 Discussion: Introductions	May 15 Syllabus Quiz Netiquette Quiz Pre-term Survey Practice Quiz	May 16 Safety Contract Safety Quiz Safety Photo Safety Assignment
WEEK 2: PRE-LAB ASSIGNMENTS	May 19 Beer's Law Pre-Lab	May 20	May 21 Equilibrium Pre-Lab	May 22	May 23 Le Chatelier Pre-Lab
WEEK 3: PRE-LAB ASSIGNMENTS	May 26 HOLIDAY	May 27 Acids & Bases Pre-Lab	May 28 Gel Electrophoresis Pre-Lab	May 29	May 30 Thermodynamics Pre-Lab
WEEK 4: PRE-LAB ASSIGNMENTS	June 2 Electrochemical Cells Pre-Lab	June 3	June 4 Transition Metals Pre-Lab	June 5	June 6 Radioactivity Pre-Lab
WEEK 5: IN-PERSON LAB WEEK	June 9 Beer's Law Lab Equilibrium Lab	June 10 Le Chatelier Lab Acids & Bases Lab	June 11 Gel Electrophoresis Lab Thermodynamics Lab	June 12 Electrochemical Cells Lab Transition Metals Lab	June 13 Radioactivity Lab Lab Practical

WEEK 6: FINISHING UP	June 16 Beer's Law Post-Lab Equilibrium Post-Lab Le Chatelier Post-Lab	June 17 Acids & Bases Post-Lab Gel Electrophoresis Post-Lab Thermodynamics Post-Lab	June 18 Electrochemical Cells Post-Lab Transition Metals Post-Lab Radioactivity Post-Lab	June 19 HOLIDAY	June 20 FINAL LAB EXAM

ATTENDANCE INFORMATION

LAB PERIOD

You are expected to attend lab in-person during your scheduled lab period, and to leave the laboratory prior to the end of your lab period. Everyone is given the same amount of time to complete the experiments. If you are well-prepared, you should not experience difficulties completing the experiments within the allotted timeframe. You may not arrive early, stay late, or attend during a different lab period to complete your laboratory activities. If you are more than 15 min late, you will not be allowed to enter lab and will forfeit attendance points for the day. Any student who has an unexcused absence is not allowed to submit any during-lab and post-lab assignments related to the missed lab period.

ABSENCES FOR IN-PERSON LABS

Requirements for class attendance in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/. Students who must miss lab due to extreme circumstances beyond their control must contact the instructor as soon as possible to discuss making up the missed lab in person.

Please understand that personal issues with scheduling conflicts, such as volunteering, work, non-emergency dentist or doctor appointments, exams for other courses, extracurricular activities, or travel, do not justify an excused absence. Any student who missed more than two 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

DEALINES AND LATE POLICY

For best performance on Quizzes, use only Firefox or Chrome for quizzes. Chrome must be used for the Exam. Make sure you start well in advance of the due date/time, in case your computer's clock differs from official Canvas time. There are no extensions due to travel or computer issues. All date/times are in EST.

For all assignment submissions, the late penalty is applied even if the submission is received one second past the deadline, so be mindful of time. The late penalty is quite strict; 1 s after the deadline is penalized as a full day late. Emailed assignments are not considered for grading. We highly recommend you submit assignments early and verify they've been submitted through Canvas. We recommend using computers to turn in work rather than apps on a student's phone. Verify all submissions. All due dates/times are in EST.

All assignments submitted through Canvas can be turned in late for reduced credit, -25% per day submitted late, with the exception of the Final Lab Exam. Extensions will not be given because of technical or personal issues that occur within 24 hours of the assignment deadline. 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.

RE-GRADES

All Canvas lab assignment grades are graded by your TA so you should communicate any disputes directly to your TA via Canvas email. Your TA will address your concerns. Note that your assignments must be scanned and submitted to Canvas as a .pdf to the correct assignment in order for points to be considered towards your overall course grade.

Regrades of assignments submitted through Canvas, typically via file upload, must be requested within 3 days of a grade being assigned, and should be directed to your TA. If there was a technical issue with submission of the file, the file can be resubmitted to the comments section for a regrade but the assignment will suffer a 50% penalty. Technical issues are completely avoidable, as students can submit an assignment, verify it has been submitted correctly, and verify the contents of the file submission prior to the deadline. Do not use the mobile app to submit assignments.

LAB PRACTICAL

Part of your course grade will be based on your performance on the Lab Practical. This is a timed and proctored in-lab assignment that is scheduled during one of your regular lab periods following the lab schedule. You will complete the lab practical individually and it will assess skills that you have used throughout the semester. More details regarding the lab practical will be posted on Canvas.

Absences will be handled in accordance with official UF academic regulations. For more information, see https://catalog.ufl.edu/UGRD/academic-regulations/ . 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 absence a make-up lab practical 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 lab practical.

LAB EXAM

A final lab exam will be available over a 4 hour period, 6pm-10pm EST, on June 20th. The exam has a 2 hour time limit. The exam is a cumulative final exam that covers everything in the lab manual (the modules in Canvas). The final lab exam cannot be submitted late – it will be auto-submitted by 10pm on June 20th.

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.

HONORLOCK

Honorlock will proctor your exams this semester. You do not need to create an Honorlock account, download software, or schedule an appointment for your exam. Honorlock is available 24/7 and requires a computer, webcam, microphone, and a stable internet connection.

To get started, you will need Google Chrome and to download the Honorlock Chrome Extension. You can download the extension at www.honorlock.com/extension/install.

When you are ready to test, log into Canvas, go to your course, and select your exam. Click “Take the Quiz” to begin the Honorlock authentication process, during which you will take a picture of yourself and show your ID. Honorlock will record your exam session and record your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it's on a secondary device.

Honorlock support is available 24/7/365. If you encounter technical difficulties with Honorlock, contact Honorlock directly. You may live chat, phone (855-828-4004) and/or email support@honorlock.com. You should spend some time reading about their service and testing your system on their website at https://honorlock.com/support/. For other technical issues contact the Help Desk.

To help you prepare for an exam proctored by Honorlock, please read: https://dce.ufl.edu/media/dceufledu/pdfs/Honorlock-Student-Exam-Preparation-Information.pdf

A Honorlock student privacy guide is available at: https://honorlock.com/student-privacy-statement/

GRADE BREAKDOWN

Each laboratory exercise is comprised of a Pre-Lab quiz, a Pre-Lab notebook assignment, a During-Lab Graph/Image, and a Post-Lab notebook assignment, 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 contact the instructor. Detailed information regarding each of these grading items is provided in Canvas.

Assignment weights are as follows:

Assignment Group	Weight %
Safety/Surveys/Syllabus	7%
9 In-Person Labs (9 @ 7% each)	63%

Lab Practical	15%
Lab Exam	15%
Total	**100%**

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

UNIVERSITY POLICIES

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES

Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT

UF students are bound by The Honor Pledge which states "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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." The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. *See the UF Conduct Code website for more information.* If you have any questions or concerns, please consult with the instructor or TAs in this class.

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 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.bluera.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/

NETIQUETTE

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats. Review the detailed information regarding Netiquette in Canvas. Make sure you complete the Netiquette Quiz, which counts towards your survey/syllabus/safety grade.

GETTING HELP

For issues with or technical difficulties with Canvas, contact the UF Help Desk: https://helpdesk.ufl.edu/ ; (352)-392-HELP.

Other resources are available at http://www.distance.ufl.edu/getting-help for Counseling and Wellness resources, disability resources, resources for handling student concerns and complaints, and library desk support.

DISCLAIMER

This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

SAMPLE GRADING RUBRICS

Pre-Lab Notebook (sample)

Acids/Bases Pre-Lab Notebook			
Criteria	**Ratings**		**Pts**
Materials List	**2 pts** **Student writes down the full list of materials**	**0 pts** **No Marks**	2 pts
Theoretical pH	**3 pts** **Student determines the theoretical pH for each of the solutions in Part 1**	**0 pts** **No Marks**	3 pts
			Total Points: 5

TA Recorded Attendance

In-Lab Attendance			
Criteria	**Ratings**		**Pts**
Student Presence in Lab	**1 pts** **Present** Student present in lab.	**0 pts** **Absent** Student not present in lab.	1 pts
			Total Points: 1

Post-Lab Notebook (Sample)

Density Post-Lab Notebook

Criteria	Ratings			Pts
Solid Metal	**2 pts** **Full Marks** The student shows full calculations of density and % error of the solid metal.		**0 pts** **No Marks**	2 pts
Standard Solutions	**2 pts** **Full Marks** Student shows calculations for the density of the standard solutions.		**0 pts** **No Marks**	2 pts
Unknown Solution	**2 pts** **Full Marks** Student shows calculations of the density and average density for all three portions of the unknown solution. Student calculates the mass % of the unknown solution and calculates the % error.		**0 pts** **No Marks**	2 pts
Sources of Error	**2 pts** **Full Marks** Student discusses 3 relevant sources of error and categorizes as random or systematic.	**1 pts** **Part Marks** Student includes only 2 sources of error and categorizes as random or systematic.	**0 pts** **No Marks**	2 pts
Impact of Errors	**2 pts** **Full Marks** The student describes how all 3 sources of error would impact experimental results and proposes ways to minimize them.	**1 pts** **Part Marks** The student explains affect and how to minimize two of their sources of error.	**0 pts** **No Marks**	2 pts
Table of Group Data	**2 pts** **Full Marks** Student includes table of group data (at least 6 entries) for unknown solution.	**1 pts** **Part Marks** Student tabulates only 4-5 entries.	**0 pts** **No Marks**	2 pts
Std Deviation	**2 pts** **Full Marks** Student calculates mean, range, and standard deviation of group data.	**1 pts** **Part Marks** Student calculates two of the three values.	**0 pts** **No Marks**	2 pts
Accuracy and Precision	**1 pts** **Full Marks** Student discusses accuracy and precision of single data point vs pooled data.		**0 pts** **No Marks**	1 pts
			Total Points: 15	