

CHM2047 Fall 2023 SYLLABUS

Syllabus might be subject to changes during the semester. For the latest information, visit the [CANVAS site](#). Designed for entering (not transfer) students who wish to move more quickly into advanced coursework. Electronic structure and bonding, gases, liquids, solids, kinetics, equilibria, acids and bases, thermodynamics, oxidation-reduction.

TEACHING TEAM

Professor Valeria Kleiman (she/her/ella). e-mail: kleiman@ufl.edu To meet with Dr Kleiman see the table below or by appointment.

In addition, 5 "peer mentors" will help you through lecture and discussion sessions. These students successfully completed CHM2047 last Fall.

The Teaching Team includes a FANTASTIC Graduate Assistant:

Namodhi Wijerathne	wijerathne.h@ufl.edu
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Abe Daoud	abraham.daoud@ufl.edu
Elizabeth Michel	elizabethmichels@ufl.edu
Gabriella Sprague	gabriellasprague@ufl.edu
Leah Kessler	leah.kessler@ufl.edu
Nguyen Tri	ng.tri@ufl.edu

Not only did they come out in the top of their class; THEY WERE ALSO RECOMMENDED FOR THIS POSITION BY THEIR PEERS. Having taken the class last fall, they are very attuned with the fast pace and demands of this course.

CLASS TIME and OFFICE HOURS

OFFICE HOURS might change after the first week of classes. Please check back to confirm they are available. Prof. Kleiman and all TAs are available to help students in any of the five sections. You are not limited to only the TA assigned to your section; you are encouraged to go to multiple office hours to help the learning process. **Office hours are held in CBB Room 203**

Period	Time	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
2	8:30 - 9:20	Namodhi		DISCUSSION Lei 242 ABE (10969)		
3	9:35- 10:25		LECTURE CCB 221	DISCUSSION Lei 242 Gabi (10968)	LECTURE CCB 221	Abe
4	10:40 - 11:30			Namodhi Lei 142 (10966)		
5	11:45 - 12:35	Leah	VDK	DISCUSSION Lei 242 Tri (10941)	VDK	Gabi
6	12:50 - 1:40	Leah	Leah	DISCUSSION Lei 242 LEAH (10967)	Elizabeth	
7	1:55 - 2:45	Elizabeth	Gabi		Elizabeth	
8	3:00 - 3:50	Elizabeth	Gabi			Abe
9	4:05- 4:55	Abe			Namodhi	Tri
10	5:10- 5:30	Tri				
	5:30- 6:00		Tri (5:30-6:30)			
	6:00 - 6:30					

PREREQUISITES

AP, IB, AICE, (Chem and Math) or dual enrollment chemistry courses with credit for CHM2045/L CHM2046/L; Coreq: CHM 2047L. Students are expected to have a solid grasp of pre-calculus algebra and trigonometry and should either be co-registered for MAC2311 (Calc.1) or have credit for it. During lectures, concepts from Calculus may be discussed. When derivatives or integrals are mentioned, the focus is primarily on their graphical interpretation to aid understanding of chemical or physical concepts. When homework problems require their use, feel free to employ computational solvers such as Wolfram Alpha: <http://www.wolframalpha.com/> ([Links to an external site.](#)).

TEXTBOOK

Trying to make the college experience more accessible I created an online FREE BOOK for this class. This book has been designed following the syllabus of CHM2047. The book is part of Open Education Resources and can be accessed within the Libtext Library: [CHM2047 BOOK](#) Reading assignments ought to be completed before coming to class to allow for better comprehension of the material during lecture.

GRADES

Grades are based on your own performance, as **is independent of your classmate's work**. The final grade is an evaluation of how much you've learned and achieved in regard to the course goals. The course grade is a combination of your effort and achievements in several activities and the grading scheme corresponds to the final letter grade in the class.

A student contending that a HW, exam or quiz has been miss-graded or miss-scored must report this to the Graduate TA within one week of receiving the original grade or score. Failure to follow this policy results in no reconsideration of the contended grade or score. If this does not resolve the issue you may talk to Professor Kleiman. When an assignment is regraded, the regrading will be done by Prof. Kleiman and will include the full assignment.

Activity	Contribution to grade	Please note that a C ⁻ is not considered a passing grade for majors requiring a General Chemistry course. See Catalogue (grades) for more info on UF grade policies.
Think Aloud Videos	30 %	
Video Quizzes	10 %	
HW	35 %	
Engagement	10%	
Creative Project	15%	

PROPOSED CALENDAR (subject to change)

CHM2047 FALL 2023 PROPOSED CALENDAR		
Week 1		Syllabus, Introductions, Scientific Method. 24-Aug
Week 2	ATOMS and MOLECULES	Experimental breakthroughs, 29-Aug Failure of Classical Mechanics Waves , Matter 31-Aug
Week 3		Intro to quantum concepts. H atom models. nlms 5-Sep 7-Sep
Week 4		Beyond H and the Periodic Table . Models for Chemical bond 12-Sep 14-Sep
Week 5		Molecular orbitals for Diatomic Molecules 19-Sep Homonuclear and Heteronuclear molecules 21-Sep
Week 6		Molecular Geometry (Hybridization) VSPER 26-Sep Isomers (Inorganic and Organic Chem concepts) 28-Sep
Week 7		Inorganic Chemistry: CoordinationComplexes MOs 3-Oct
week 7		
Week 8	FROM 1 MOLECULE to 1 MOL	Kinetic Theory of gases. 10-Oct Thermodynamics State Functions Work and Heat 12-Oct
Week 9		Enthalpy, Heat Capacity. 17-Oct Introduction to Entropy and Directionality. 19-Oct
Week 10		ENTROPY Classical and Statistical perspectives. 24-Oct Entropy of the Universe, Directionality 26-Oct
week 11		Equilibrium, Free Gibbs Energy. 31-Oct Vapor pressure, Liquids 2-Nov
week 12		
week 13	EQUILIBRIA	Acid Base equilibria 14-Nov 16-Nov
week 14		Electrochemistry Equilibrium 21-Nov NO CLASS THANKSGIVING 23-Nov
week 15		Electrochem Equilibrium / Kinetics. Student presentations 28-Nov 30-Nov
week 16		Student presentations 5-Dec

UF GUIDING POLICIES

- Contact Hours:** "Contact Hours" refers to the hours per week in which students are in contact with the instructor, excluding office hours or other voluntary contact. Often, the number of contact hours in this course equals the number of credits the course offers. Chem 2047 has 5 contact hours (4 in lectures and 1 in discussion).
- Workload:** As a Carnegie I, research-intensive university, UF is required by federal law to assign at least 2 hours of work outside of class for every contact hour. Work done in these hours may include reading/viewing assigned material and doing explicitly assigned individual or group work, as well as reviewing notes from class, synthesizing information in advance of exams or papers, and other self-determined study tasks. CHEM2047 has 5 contact hours and hence a minimum of 10 hours of work outside the classroom.

- **Accommodation for Student 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 the [Disability Resource Center](#). This class supports the needs of different learners; it is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.
- **Counseling Services:** The University of Florida provides counseling services for students, staff, and faculty. See <http://www.counseling.ufl.edu/cwc>.

If you or a friend are in distress, call (352) 392-1575 (available 24/7), email umatter@ufl.edu, or [walk in](#) for an emergency consultation during regular service hours (8:00am – 5:00pm) at the Peabody Hall Site, on the 4th floor of Peabody Hall, adjacent to Criser Hall. For other hours or weekends, call the Alachua County Crisis Center, (352) 264-6789. For sexual assault recovery services call the [Student Health Care Center](#) at (352) 392-1161. For life-threatening emergencies always call 911.

- **Teaching 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/>.
- **Course Recording:** Pursuant to Florida House Bill 233, which you can see [here](#), please note the following:

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

CHM2047 FALL 2023 ACTIVITIES & ASSIGNMENTS

This class uses different environments to learn chemistry. All activities and assignments have been designed to maximize student/instructors and student/student interactions. A combination of in-class and out-of-class assignments provides a more meaningful environment to understand new material and to demonstrate proficiency.

ATTENDANCE

Attendance to class-time and discussions is fundamental to understand the material and engage with the instructor and other students. **Attendance to lectures, discussion and office hours, though not required, is expected.** The 2-period class (T and R) will combine a discussion of the pre-viewed video, with group work solving problems. Watching the **pre-recorded lectures** and **reading the book** BEFORE lecture time is paramount to keep up with the fast pace of the course. Students who do not watch the videos before class will have their participation grade diminished.

Repeated absence in class and discussion session will make it impossible to earn full participation points, but more importantly, the one-semester Gen Chem course has a fast pace making it imperative to stay on task, otherwise it becomes very hard to catch up on the missed material. To help you stay on track, **Attendance will be graded** as part of the engagement rubric (see below).

Acceptable reasons for absence from or failure to engage in class include illness; Title IX-related situations; serious accidents or emergencies affecting the student, their roommates, or their family; special curricular requirements (e.g., judging trips, field trips, professional conferences); military obligation; severe weather conditions that prevent class participation; religious holidays; participation in official university activities (e.g., music performances, athletic competition, debate); and court-imposed legal obligations (e.g., jury duty or subpoena). Other reasons (e.g., a job interview or club activity) may be deemed acceptable only if pre-approved by the instructor. For all planned absences, a student in a situation that allows an excused absence from a class, or any required class activity must inform the instructor as early as possible prior to the class. For all unplanned absences because of accidents or emergency situations, students should contact their instructor as soon as conditions permit.

ENGAGEMENT 10%

In order to engage with the course material and your classmates, active participation is expected at all class sessions. Furthermore, because each class discusses material from the pre-recorded videos it is imperative that students be ready to participate in every lecture, in every discussion session and when attending office hours.

Rather than attempting to quantify an arbitrary “class participation” construct, in this class you will be assessed on any and all demonstrations of your willingness and ability to engage with the course material, with your classmates, with the Teaching Assistants and with your professor. Evidence of engagement can take many formats, and it is **evaluated during lectures, discussion, and office hours.** (If you do not attend lectures, discussions and OH, you cannot demonstrate evidence of engagement.) It includes all ranging from (but by no means limited to):

- Offering thoughts and reactions to the videos
- Asking questions in or out of class
- Solving problems during class and during discussion sessions

- Treating classmates, colleagues, professors with respect
- Visiting office hours (at least once a week)
- Sharing additional readings or resources with classmates
- Offering assistance/guidance/advice to your classmates

We will keep track of your Engagement throughout the semester, with grades assigned approximately every three weeks, following the [RUBRIC published in CANVAS](#).

HOMEWORKS 35%

They are assigned weekly and, in most cases, the deadline for submission is one week after assignment. Late HW policy: **HW is late if it is not uploaded by the deadline**. Each day late will incur a 20% deduction of the total points value. Do your HW!

By doing HW problems you will be able to understand the material better. **If it's deadline time and you have not finish the HW, submit it anyway**. You will still get feedback on the problems you solved, and you will get partial credit!

HW problems come from multiple sources, including the instructor's own personal list of problems. Since these will be the hardest problems you will encounter in CHM2047, we encourage you to form study groups with other students to work on them. **However, simply copying someone else's work is plagiarism and will be treated as such!** Sometimes you will find the solutions to the HW online. Copying these solutions without your own intellectual contribution will not only remove points from your grade (plagiarism) but will be detrimental to your understanding of the material and preparation for the exams. Your HW solutions has to show that YOU solved it, and not a team.

Submission of HW: HW are submitted ONLINE as a single pdf file. A **high quality** picture or scan of your HW can be used to create the compiled single pdf file. You can use free apps (like CamScanner) or go to the Martson Library, where scanners are available for free. Give yourself some extra time to go through the pdf creation and submission procedure. Multiple-file or unreadable submissions will be returned to the student ungraded.

There will be 11 or 12 HW assignments during the semester. The lowest graded HW will be dropped from the HW cumulative grade.

Each week a number of problems will be used for additional evaluation (see "Think Aloud Videos").

On-Line Video QUIZZES 10%

There will be multiple (almost one per lecture) on-line (CANVAS) quizzes. Quiz duration varies and some of them (not all) may be taken twice with the best result counting toward your grade. **Quiz answers must be your own, not shared with other students.**

THINK ALOUD VIDEOS 30%

Think aloud videos will be used to evaluate proficiency. Several times during the semester problems from the HWs will be selected and students will prepare an individual video on how to solve those HW problems.

The task is to create a short video explaining how to solve the HW problems as if you are teaching someone who doesn't know what to do. During the semester you will prepare between 3-5 videos.

CREATIVE PROJECT 15%

This semester we will explore Chemistry with a creative project.

The objective of this project is for you to communicate your understanding of a topic within our General Chemistry material to someone outside the class (a science student with no chem background or a non-scientist with some interest in chemistry). Once you pick a topic to develop, use your creativity to design something that explains this concept. The rubric to evaluate the projects will be mostly based on your ability to summarize and convey a course topic creatively, effectively, and accurately. To complete the assignment, you will submit your product and a less than 1-page long summary that describes the course concept covered and/or how your project relates to the course content.

FINAL EXAM

This course does not have in-class exams.

Final exam: If a student is happy with their grade at the end of the semester, they do not need to pass a final examination. If a student has a grade of B- or lower, they can request a final examination in the form of a cumulative TAV. This means the creation of videos to explain several problems from material covered during the semester.

Since the final exam is cumulative, the instructor reserves the right to consider assigning a letter grade above that which the student would receive based strictly on total points earned. This will only take effect if the final TAV is taken with a performance significantly above the student's overall performance for the semester, and if the student shows clear improvement in their TAV and HW grades during the course of the semester.

ADDITIONAL RESOURCES

UF provides several other resources for students, such as

Library Support can be obtained here: <http://cms.uflib.ufl.edu/ask> ([Links to an external site.](#)), where you can find various ways to receive assistance with respect to using the libraries or finding resources.

The Career Resource Center is located on level One in the Reitz Union, (352) 392-1601, and provides career assistance and counseling. Refer to <http://www.crc.ufl.edu/> ([Links to an external site.](#)) for further info.

The Teaching Center is located in Broward Hall, main phone (352) 392-2010 or appointment phone (352) 392-6420, and provides students with tutoring services and counseling regarding general study skills. Refer to <http://teachingcenter.ufl.edu/> ([Links to an external site.](#)) for further info. It may also provide employment opportunities as tutors for well qualified students.

The Writing Studio is located at 302, Tigert Hall, (352) 846-1138, and provides help with brainstorming, formatting, and writing papers, see: <http://writing.ufl.edu/writing-studio/> ([Links to an external site.](#)).

The Ombuds Office is located at 31 Tigert Hall, (352) 392-1308, and provides students assistance in resolving problems and conflicts that arise in the course of interacting with the University of Florida. By considering problems in an unbiased way, the Ombuds works to achieve a fair resolution and works to protect the rights of all parties involved. For further information go to <http://www.ombuds.ufl.edu/> (Links to an external site.) or refer to the official complaints policy here: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf (Links to an external site.).

ADDITIONAL INFO

Cell Phone Etiquette: Please put all cell phones or other electronic devices on “**silent mode**” during all class and discussion periods. Please do not leave the classroom during lecture to make a phone call, use the 5-minute break. Use your cellphone only for class activities while class is in session. Thank you!

Honor Code This class will operate under the policies of the student honor code which can be found at: <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/> (Links to an external site.). The students, instructor, and TAs are honor-bound to comply with the Honors 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. 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://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>