CHM2045 – GENERAL CHEMISTRY I - FALL 2025
(Dr. Simon E. Lopez)

M,W,F (Period 6); Class #: 10583, 10584, 10585, 10586, 10607, 10609

FALL 2025 – GENERAL EDUCATION (P) – 3 CREDIT HOURS

INSTRUCTOR INFORMATION

INSTRUCTOR

Instructor	Contact Information	Office Hours
Dr. Simon Lopez D'Sola	Email in Canvas preferred	M,W,F: Time hours 10:40-11:30 am (P4)
352-392-9700	simonlopez@ufl.edu	Office hours in Leigh Hall 312, my office

TEACHING ASSISTANTS

You will meet your teaching assistant at your first discussion section. Your teaching assistants will hold office hours during the week in the Chemistry Learning Center (CLC) in SFH 105. Their schedule will be posted on Canvas. You can get help from any of the CHM2045 or CHM2046 teaching assistants in the CLC.

TAs: TBA.

Schedule: TBA.

GENERAL INFORMATION 1

CREDITS / PREREQUISITES

3 Credits. Prerequisites: CHM 1025 with a minimum grade of C, or a passing score on Chem placement plus no attempt of CHM 1025 with grade <C or W, and MAC1147, or MAC1140 plus MAC1114, or higher MAC course with a minimum grade of C.

Corequisite: CHM2045L

Please refer to the Undergraduate Catalog for placement and prerequisite information.

COURSE DESCRIPTION AND GOALS

CHM 2045 is the first semester of the CHM2045/CHM2045L and CHM2046/CHM2046L sequence. Stoichiometry, atomic and molecular structure, the states of matter, reaction rates and equilibria. A minimum grade of C is required to progress to CHM2046. (P)

This course is designed for students pursuing careers in the sciences or who need a more rigorous presentation of chemical concepts than is offered in an introductory course. Students will engage in problem solving and critical thinking while applying chemical concepts. Topics will include the principles of chemistry including atomic theory, electronic structure, measurement, stoichiometry, bonding, periodicity, thermochemistry, nomenclature, solutions, and the properties of gases.

COURSE FEES

Additional course fees: $1.14. Course fees are used for exam processing, printing.

FIRST DAYS

Log into Canvas and access the course. You should check frequently for new *Announcements* and/or emails containing important information and reminders. Click on the *Syllabus* tab. Click on *Modules* and read all the information.

GENERAL EDUCATION OBJECTIVES AND LEARNING OUTCOMES

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 and student practice assignments 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 techniques of discovery and critical thinking effectively to solve scientific problems and to evaluate outcomes.	Objectives 1-6	**Independent Practice:** • Graded Homework • Graded Chapter Problem Sets **Formative:** • Lecture Video Playposit questions • Quizzes • Practice Exams

			Summative: 4 Exams
Communication	Communicate scientific knowledge, thoughts, and reasoning clearly and effectively.	Objective 3-6	• Discussion Assignments

COURSE LEARNING OUTCOMES

Students will apply the law of conservation of matter and energy.

Students will implement rules of significant numbers to all measurements.

Students will explain the fundamental properties of matter including but not limited to atomic and electronic structure, and periodicity.

Students will apply IUPAC rules of nomenclature.

Students will predict molecular geometry and properties from bonding theories.

Students will predict and explain the products of chemical reactions (e.g. acid-base, oxidation-reduction, precipitation, dissociation).

COURSE DELIVERY/MEETING TIMES

Lectures will be held in CLB 130 from 12:50 pm to 1:40pm (Period 6) on Mondays, Wednesdays and Fridays. Students must attend in-person. The recording link of lectures (Mediasite) will be posted on the Canvas homepage. Discussion sections will be held in person at the time listed on your schedule. Exams will be held on campus only during the evening assembly periods, E1-E2.

REQUIRED & RECOMMENDED COURSE MATERIALS

TEXTBOOK (ONLINE EBOOK WITH HW; REQUIRED IN FULL)

Listed below you will find the Macmillan Learning ISBN and pricing information for the Interactive General Chemistry, Reactions, 2.0 Achieve.

Can also acquire an older version of Silberberg to use as a reference and extra practice problems (6th, 7th, 8th, 9th)

There are two options for purchasing access to homework/ebook: Option 1: consent to have the purchase price charged to your student account following the directions posted on the course homepage in Canvas; this is a time-limited option after which only Option 2 is available. Option 2: purchase an access code for the materials at the UF Bookstore (at a slightly higher price).

To opt in, navigate to: https://bsd.ufl.edu/allaccess. Click the “Opt In” tab or view the “View Eligible UF All Access Classes” button. You will be prompted to log in using Gatorlink credentials. Follow the prompt to authorize charges to your student account. The access code will then be provided. Copy the access code to your clipboard. In the Canvas course, click on the MacMillian module, and provide the access code when prompted to do so. If you have any questions about the authorization process or refunds contact Included@bsd.ufl.edu.

All other assigned material will be available through Canvas.

CALCULATOR (REQUIRED, MUST PURCHASE)

You will require a non-graphing, non-programmable scientific calculator capable of logarithmic functions.

ICLICKER (REQUIRED, NO CHARGE)

You will use iClicker to answer in-class clicker questions. Access is provided free of charge to students. An access code will be provide on Canvas the first week of the semester to all students, at the Home-page. You will use your own device (phone, tablet, or laptop) during class to answer clicker questions with iClicker.

CODE: https://join.iclicker.com/DCLL

COURSE COMMUNICATIONS

GENERAL OR ACADEMIC QUESTIONS

General course questions and all academic inquiries should be posed to your instructor during office hours, or to TAs during their office hours or during discussion sessions. Please be prepared before coming to office hours. Emails are for administrative purposes only, and not for distance instruction.

PRIVATE OR GRADE-RELATED QUESTIONS

Direct private or grade-related to your instructor via the mail function in Canvas. Do not email outside of Canvas to your instructor's external email address – we prefer to discuss grade related questions within Canvas. Instructor response time to email queries is <48 h during the workweek, or the first business day for emails received Friday or over the weekend. Grades will not be discussed during office hours as other individuals may be present.

NETIQUETTE

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

SCHEDULE

The following list details the order of topics that will be covered in this course:

Chapter 1: Science & Measurement

Chapter 2: Atoms and the Periodic Table

Chapter 3: Compounds and the Mole

Chapter 4: Chemical Reactions and Aqueous Solutions

Chapter 5: Stoichiometry

Chapter 6: Thermochemistry

Chapter 7: Gases

Chapter 8: The Quantum Model of the Atom

Chapter 9: Periodicity and Ionic Bonding

Chapter 10: Covalent Bonding

Chapter 11: Molecular Shape and Bonding Theories

Chapter 12: Liquids and Solids

Chapter 13: Solutions

Chapter 14: Chemical Kinetics

Course Schedule (page numbers correspond to the Achieve/McMillan e-Book):

Monday	Tuesday	Wednesday	Thursday	Friday
August 18	19	20	21	22 Intro & Ch. 1 Review (pages: 02-58) Ch. 2 Review (pages: 72-97)
25 Ch. 3.1-3.3 (pages: 108-117)	26 Discussions (Worksheet Ch.1-2)	27 Ch 3.4-3.8 (pages: 117-136)	28	29 Ch 3.8-3.12 (pages: 136-148
September 1 Ch. 4.1 (pages: 164-169) Ch. 3. Quiz	2 Discussions (Worksheet Ch.3)	3 Ch. 4.2-4.3 (pages:169-178)	4	5 Ch. 4.4-4.5 (pages:178-195) Ch. 5.1-5.5 (pages:206-211)
8 Ch. 5.6-5.8 (pages:211-225) Ch 4 Quiz	9 Discussions (Worksheet Ch.4-5)	10 Ch. 7.1-7.3 (pages:259-274)	11	12 Ch. 7.4-7.5 (pages:284-296)
15 Ch. 7.6-7.12 (pages:296-318) Ch. 5 Quiz	16 Discussions (Worksheet Ch.7)	17 Exam 1 review **Exam 1 (Ch. 1-5,7)**	18	19 Ch. 6.1-6.4 (pages:246-251)
22 Ch. 6.5-6.8 (pages:251-259)	23 Discussions (Worksheet Ch. 6)	24 Ch. 8.1-8.2 (pages:331-344)	25	26 Ch. 8.3-8.7 pages:344-361)
29 Ch. 9.1-9.3 (pages:374-385) Ch. 6 Quiz	30 Discussions Worksheet Ch. 8	**October** 1 Ch. 9.4-9.5 (pages:385-392)	2	3 Ch. 10.1-10.2 (pages:402-410) Ch. 8 Quiz
6 CH. 10.3-10.4	7 Discussions	8 Ch. 10.5-10.6	9	10 Review Exam 2

(pages:410-422)	Worksheet Ch. 9	(pages:422-429) Ch. 9 Quiz		**Exam 2 (Ch. 6, 8-10)**
13 Ch. 11.1-11.2 (pages:440-452)	14 Discussions Worksheet Ch. 10 Ch. 10 Quiz	15 Ch. 11.3-11.5 (pages:452-469)	16	17 Ch. 12.1-12.2 (pages:480-492)
20 Ch. 12.3-12.4 (pages:492-503)	21 Discussions (Worksheet (Ch. 11)	22 Ch. 12.5-12.7 (pages:503-517) Ch. 11 Quiz	23	24 Ch. 13.1-13.3 (pages:530-543)
27 Ch. 13.4 (pages:543-550)	28 Discussions (Worksheet (Ch. 12)	29 Ch. 13.5 (pages:550-554) Ch. 12 Quiz	30	31 Ch. 13.5 (Problems)
November 3 Ch. 14.1-14.2 (pages:566-577)	4 Discussions (Worksheet Ch.13)	5 Ch. 14.4 (pages:584-590) Ch. 13 Quiz	6	7 Ch. 14.3 (pages:577-584)
10 Ch. 14.4 (Contd…) (pages:584-590)	11 Holiday (No Discussion)	12 Ch. 14.5 (pages:591-595) Ch. 14 Quiz	13 **Exam 3 (Ch. 10-12)**	14 Ch. 14.6 (pages:595-598)
17 Ch. 14 (Summary and Problem solving) (pages:599-610)	18 Discussions (Worksheet Ch 14)	19 Ch. 14 (Summary and Problem solving) (pages:599-610) (Contd.)	20	21 Ch. 14 Review
24 Thanksgiving	25 Thanksgiving	26 Thanksgiving	27 Thanksgiving	28 Thanksgiving

December 1 Final Exam Review	2	3	4 Reading day	5 Reading day
FINAL EXAM (Ch. 1-14, from Achieve e-Book): Saturday December 6th (3:00 pm-5:00 pm), Room to be announced				

COURSE POLICIES

ASSIGNMENT DUE DATES

All due dates for assignments are clearly posted in the course assignments of the Canvas page and reflect the most up-to-date information. All assignments must be completed by the stated due date and time for credit. Requests for extensions for illness/emergency must be accompanied by documentation. Such documentation must be provided for at least five of the seven days of the week of the assignments' deadline for accommodations to be considered; please do not wait until a due date to complete an assignment.

PRE-LECTURE ASSIGNMENTS

You are expected to complete pre-lecture assignments in preparation for each class day. These assignments are based on the reading in the required textbook and provided videos. Each assignment has problems that match the content for you to master the content before class. These assignments will be posted on Canvas under the quizzes tab and are due prior to class. You will have multiple attempts to successfully answer the **pre-lecture assignments**. Three of these assignment grades are dropped from your overall course grade.

Here is a list of the number of pre-lecture assignments per chapter and time estimate:

Chapter 1: Science & Measurement & **Chapter 2: Atoms and the Periodic Table**

Number of Pre-lecture assignments: eight (8), total time estimate (including all): 45 minutes

Chapter 3: Compounds and the Mole

Number of Pre-lecture assignments: six (6), total time estimate (including all): 35 minutes

Chapter 4**: Chemical Reactions and Aqueous Solutions**

Number of Pre-lecture assignments: five (5), total time estimate (including all): 30 minutes

Chapter 5: Stoichiometry

Number of Pre-lecture assignments: five (5), total time estimate (including all): 30 minutes

Chapter 6: Thermochemistry

Number of Pre-lecture assignments: five (5), total time estimate (including all): 30 minutes

Chapter 7: Gases

Number of Pre-lecture assignments: five (5), total time estimate (including all): 30 minutes

Chapter 8: The Quantum Model of the Atom

Number of Pre-lecture assignments: four (4), total time estimate (including all): 25 minutes

Chapter 9: Periodicity and Ionic Bonding

Number of Pre-lecture assignments: one (1), total time estimate (including all): 10 minute.

Chapter 10: Covalent Bonding

Number of Pre-lecture assignments: six (6), total time estimate (including all): 35 minutes .

Chapter 11: Molecular Shape and Bonding Theories

Number of Pre-lecture assignments: six (6), total time estimate (including all): 35 minutes .

Chapter 12: Liquids and Solids

Number of Pre-lecture assignments: five (5), total time estimate (including all): 30 minutes .

Chapter 13: Solutions

Number of Pre-lecture assignments: six (6), total time estimate (including all): 35 minutes .

Chapter 14: Chemical Kinetics

Number of Pre-lecture assignments: five (5), total time estimate (including all): 30 minutes.

DISCUSSIONS/WORKSHEETS

Discussion sections meet per your scheduled day/time and attendance is mandatory. You will work on worksheets during the discussion sections that will help you prepare for exams. You must attend your registered discussion section in order to earn credit. Worksheets will help prepare you for exams. Grade discrepancies should be addressed with your assigned teaching assistant within a week of grades posting.

ACHIEVE HOMEWORK

ACHIEVE homework assignments are due multiple times a week, and deadlines will be posted on Canvas. You have multiple attempts at each homework assignment, with the highest score counting for credit. Three ACHIEVE homework assignment scores are dropped from your overall course grade. You can access ACHIEVE homework via the Canvas course under Modules.

ICLICKER

IClicker is a classroom response system used for in-class participation during lectures. The in-class questions will be presented during class in-pace with the lecture. You can earn points in class by correctly answering clicker questions through iClicker. iClicker points will begin counting after add/drop is over, on August 27th. The lowest three clicker grades will be dropped at the end of the semester.

QUIZZES

There will be periodic quizzes to prepare you for the exams. These quizzes will be available on Canvas.

CANVAS HOMEWORK

Several optional homework assignments are available for each chapter to help you understand the material. The homework is posted in Canvas. You have multiple attempts to successfully answer the questions. These are not worth any points.

EXAMS

Exams occur in the evenings, periods E1-E2, in exam rooms TBA. Exam Dates are provided in the schedule. You are permitted use of a non-graphing non-programmable scientific calculator. Notes, cell phones or other electronic devices are not permitted. Scantrons and blank paper are provided.

PROGRESS EXAM "AVERAGE/REPLACE" POLICY

This applies to all students. No progress exam score will be dropped for any reason. To alleviate the stress of potential issues that do not fall under officially sanctioned absences, we have incorporated an "average/replace' policy: the lowest of the three progress exams will be replaced by the average of the three progress exams. This policy helps to minimize the impact of a single poor performance (it will not disappear but will be minimized). For example, if a student scores the following on their three progress exams: 0%, 65%, 80%, then the 0% would be replaced with the average of 48%. That is a much better score than a 0.

A significant penalty is assessed for student failure to bubble in the correct form code on the scantron.

POSTED GRADE DISPUTES

Should a student wish to dispute any grade received in this class, the dispute must be in writing (via Canvas e-mail to *your* instructor) and submitted prior to the last day of classes for the semester.

ATTENDANCE, EXTENSION REQUESTS

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

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: acceptable 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.

GRADING

GRADE POLICY

There is no extra credit available for this course. Grades are not rounded at the end of term.

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

Current UF grading policies for assigning grade points can be found in the catalog.

Assignments weights are as follows:

Assignment Group	Weight %

Progress Exams	60%
Final Cumulative Exam	20%
ACHIEVE Homework	6%
Pre-Lecture Assignments (PLA)	3%
iClicker	2%
Quizzes	4%
Worksheets	4%
ACHIEVE Assignments	1%
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	90.0	86.0	83.0	80.0	77.0	73.0	69.0	66.0	63.0	60.0	< 60.0

UNIVERSITY POLICIES

STUDENTS REQUIRING ACCOMMODATIONS

Students who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting disability.ufl.edu/students/get-started. 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. 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

University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course. For additional information, see https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.

IN-CLASS RECORDING

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.

CAMPUS RESOURCES

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

ACADEMIC RESOURCES

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.

Enrollment Management Complaints: : View the Student Complaint Procedure webpage for more information.

FEEDBACK

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online. Students can complete evaluations in three ways:

- The email they receive from GatorEvals
- Their Canvas course menu under GatorEvals
- The central portal at https://my-ufl.bluera.com

Guidance on how to provide constructive feedback is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

GETTING HELP

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

CONFLICT RESOLUTION PROCEDURE

Any classroom issues, disagreements or grade disputes should be discussed first between the instructor and the student. If the problem cannot be resolved, please contact Mrs. Melanie Veige, Director of General Chemistry, Director of the General Chemistry Laboratories (genchem@chemufl.edu). Be prepared to provide documentation of the problem, as well as all graded materials for the semester. Issues that cannot be resolved departmentally will be referred to the University Ombuds Office (http://www.ombuds.ufl.edu; 352-392-1308) or the Dean of Students Office (http://www.dso.ufl.edu; 352-392-1261).

DISCLAIMER

Unforeseen circumstances including university closure (weather related, etc.) may necessitate a schedule adjustment. Any changes are communicated promptly to students.