CHEM 403: GENERAL CHEMISTRY
Fall 2025

Instructor: Dr. Samantha Reynolds; Lecturer of Chemistry; Department of Life Sciences
Preferred address: Dr. Reynolds; pronouns: she/they
Email: Samantha.Reynolds@unh.edu
Office: Room 580
Office Hours: By appointment – in person or over Zoom - feel free to contact me by email with your questions or to set up a meeting time. Please include your own availability and preference for in-person or Zoom in your request for an appointment time.

Lecture: Mondays 9:10 am-12:00 pm
Lab, Two Sections: Tuesdays and Wednesdays 6:10-9:00 pm
(Lab Instructors: John Welsh and Joanna Schofield)

Required Materials:

Lecture Text – Chemistry: Atoms First. OpenStax. ISBN-13: 978-1-938168-15-4.

This is an open access textbook, available online. You may access chapters directly online, download a pdf of the text for free, or order a hard copy. We will be using this text for both semesters. You will also need a scientific calculator for use in class and on tests and exams.

Course Objectives:

The objective for this course is to teach the fundamental concepts and physical laws of chemistry. At the end of this first semester, a student will be familiar with the components of matter, including atoms, molecules, mixtures and solutions. A student will be able to discuss periodic trends, depict chemical bonding, write and balance reactions, calculate stoichiometry, and perform calculations involving thermochemical reactions and gas laws. A student will become proficient in using SI units and showing work for calculations.

This course introduces the following Student Learning Outcomes for Biological Sciences (B.A.) and Biotechnology (B.S.) majors: Be competent in basic biology and chemistry laboratory skills and with the use of common laboratory equipment and instrumentation; Demonstrate the ability to function as a member of a team. This course satisfies the Physical Sciences Discovery and Discovery Lab Course requirements for graduation.

Grades:

LECTURE:

The lecture grade is based on a midterm and final exam, worth 200 points each, weekly online homework sets worth 20 points each, and in-class "team tests" worth 50 points each. While the midterm and final exam will primarily focus on new material covered in that section, please recognize that chemistry is a highly cumulative subject, and many principles and topics throughout the entire year will build on previously learned material. The lecture is worth 80% of your overall CHEM 403 grade.

Lecture Points Overview	
Weekly Homework	
10 x 20 points	200 points
Team Tests	
4 x 50 points	200 points
Midterm	200 points
Final Exam	200 points
TOTAL	800 points

This syllabus reflects the federal definition of a credit hour, which entails a minimum of 3 hours of engaged time per week per credit over a 15-week semester (180 hours total for the combined lecture and lab). Engaged time includes class time, but the best way to understand the concepts in this course is to practice them. Non-graded tasks for the lecture include reading assigned chapters and supplemental notes linked in the modules ahead of the lecture, along with taking preliminary notes and/or working through practice problems. Homework sets will be assigned most weeks to be completed online before the next lecture meeting. You are welcome to freely collaborate on these homework sets with your peers, course tutors, or by using other resources. Team tests will be completed during class while working together in your assigned teams. A portion of these assignment grades is based on participation.

An extra credit assignment will be available that will be worth 25 points. Details of the assignment will be announced mid-semester.

LABORATORY:
The CHEM 403 General Chemistry laboratory is a supplement to the lecture. As such, it counts as 20% of your total grade in the course. Please note that you must pass the lab in order to pass the course. A syllabus for the laboratory will be distributed separately by your lab instructor.

ASSIGNMENT OF A LETTER GRADE:
After your lecture and lab grades have been combined, your overall letter grade for the course will be based on the percentage grading structure below.

A = 93.0-100	B- = 80.0-82.9	D+ = 65.0-69.9
A- = 90.0-92.9	C+ = 77.0-79.9	D = 60.0-64.9
B+ = 87.0-89.9	C = 73.0-76.9	F = 59.9 and below
B = 83.0-86.9	C- = 70.0-72.9	

Late Work:
It is imperative that you keep up with assigned homework each week. Homework will be available in the style of an online "quiz" that will be available to submit up to the time of the next lecture meeting. Class sessions may begin with a homework review where correct answers will be provided. For this reason, no late homework submissions will be accepted, and students that have not submitted answers prior to class will receive a zero grade for that assignment.

Attendance:

This is a fully in-person class; there is no option to attend *via* Zoom if you cannot make it to campus. Each lecture covers a week's worth of content; missing even one lecture may put a student at a significant disadvantage in the course. Please plan to attend all lectures. If you are unable to attend class, it is your responsibility to review this lecture content, obtain notes from a classmate, and come to me with any follow-up questions on the material. Please note that I cannot reteach a full lecture during one-on-one office hour meetings.

If circumstances beyond a student's control prevent them from completing a homework assignment or from taking a team test or exam, arrangements can be discussed so that the student is not penalized for an excused absence. Please let me know as soon as possible if you will have to miss a lecture assignment, team test, or exam due to a legitimate excuse. If circumstances do not allow you to make prior arrangements for your absence, please contact me as soon after the missed assignment or class as you are able.

Accommodations for Absences and Missed Work:

If a personal or medical emergency, such as an illness, personal injury, or family situation, impacts your ability to attend multiple lectures, complete work in this course, and/or take a scheduled exam, please contact Lisa Enright (lisa.enright@unh.edu) to provide documentation. She can inform your instructors of the dates your coursework has been affected, and arrangements can be discussed so that you are not penalized for these circumstances. While you should not send me any documentation directly, I would appreciate an email as soon as you are able so that we can begin working on an accommodation plan to get you back on track in the course.

myCourses (Canvas):

myCourses is UNH's course management system. You can access your UNH myCourses page at mycourses.unh.edu and use your UNH ID and password to log in. All course announcements, assignments, and documents, including homework "quizzes", lecture problem sets, and answer keys will be made available on myCourses during the semester. Academic Computing Services can help if you have issues with access to myCourses; it is your responsibility to resolve any technical issues.

Use of Technology in the Classroom:

Electronic notetaking is welcome in the classroom; audio recording is allowed with permission of the instructor. Other electronic devices (headphones, earbuds, etc.) are not to be used during class. If you must leave your phone on, please set it to silent so as not to disrupt the class, and step out of the classroom if you need to answer a call. No electronic devices other than a calculator are allowed during exams.

Students do not have permission to take photos of instructor lecture notes projected at the front of the classroom; students arriving late or who miss a portion of the lecture are welcome to review and write down any missed notes during a break or after class.

Academic Honesty:

The Biology Program at UNH Manchester will strictly adhere to the University policy on academic honesty, as published in the UNH Student Rights, Rules, and Responsibilities Handbook (http://www.unh.edu/vpsas/handbook/academic-honesty). By turning in any piece of work in this course, you declare that you have read and understand the policy, and that you did not engage in any form of academic dishonesty as defined in the Handbook.

Plagiarism can take many forms, such as: submitting someone else's work – in whole or in part – as your own; collaborating on answers for individual assignments, or allowing your own work to be used by another student; copying information from a web site or other text without proper documentation; buying a pre-written paper or lab report.

Cheating is mainly concerned with copying on exams or in lab, bringing crib notes into an in-person exam or referring to notes, the textbook, or any prohibited device such as a programmable calculator, tablet, or cell phone during an exam. All electronic devices must be turned off and put away for the duration of an in-person exam. Ear buds are not permitted.

Posting any portion of faculty-created materials such as homework assignments or exam questions to "tutoring" or "study" websites is a serious violation of the Academic Honesty policy of the University. Any instances of this form of cheating will be brought directly to the department chair and dean's office.

Any instances of cheating or plagiarism will result in consequences that can range from a failing grade on the assignment for all students involved to dismissal from the University, as defined in the UNH Student Rights, Rules, and Responsibilities Handbook.

Academic Support/Tutoring:

Knack is a peer-to-peer tutoring platform that is available to all enrolled students for all undergraduate courses in Durham and Manchester at no cost to students. Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. UNH has partnered with Knack to provide students with access to verified tutors who have successfully completed your course. To view available tutors, visit unh.joinknack.com and sign in with your student account. Any questions about Knack Tutoring services can be sent to Stephanie Kirylych, Director of Advising, at stephanie.kirylych@unh.edu.

Student Accessibility Services at UNH Manchester:

The University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you are a student with a documented disability or believe you may have a disability that requires accommodations, please contact Student Accessibility Services (SAS); 227 Smith Hall on the Durham campus, or sas.office@unh.edu. Accommodation letters are created by SAS with the student. It is then the responsibility of the student to discuss the letter with the instructor as soon as possible to ensure timely implementation of identified accommodations.

Mental Health Services at UNH Manchester:

In partnership with The Mental Health Center of Greater Manchester, UNH Manchester offers free mental health sessions for students. Students can schedule virtual counseling sessions by emailing unhm.advising@unh.edu or by clicking "Request an Appointment" on the Student Wellness webpage (https://manchester.unh.edu/academics/academic-services/student-wellness). Counselors' availabilities can be found on this webpage.

Class Cancellations and Delayed Openings:

UNH Manchester makes weather-related decisions independent of UNH Durham. For information on cancellations and closings, call the UNH Manchester Information Line at **603 641 4100**, or visit the UNH Manchester website. You can also sign up for text alerts specific to the Manchester campus here: https://www.getrave.com/login/unh. Closing and delay information will also be announced on the following stations:

WMUR Channel 9 TV; WGIR 101 FM and 610 AM; WJYY 105.5 FM; WMLL 96.5 FM; WOKQ 97.5 FM; WZID 95.7 FM; WFEA 1370 AM.

TENTATIVE LECTURE SCHEDULE*
CHEM 403 - Fall 2025

Date	Lecture Topics	Textbook Chapters	Assignments
8/25	Course Introduction, Phases of Matter, Measurements	1.1-1.4, 1.6	
9/1	*Labor Day – No Class*		
9/8	Significant Figures, Atomic Theory	1.5, 2.1-2.3	HW 1 Due
9/15	**Team Test I** Electronic Structure of Atoms	3.3-3.4	HW 2 Due
9/22	Periodic Properties, Ionic Bonding	3.5-3.7, 4.1, 4.3	HW 3 Due
9/29	Covalent Bonding, Molecular Geometry	4.2-4.6	HW 4 Due
10/6	**Team Test II** Composition of Substances	2.4, 6.1-6.2	HW 5 Due
10/13	*Midsemester Break – No Class*		HW 6 Due
10/20	**Midterm**	**Chapters 1-4, 6**	
10/27	Stoichiometry of Reactions	7.1, 7.3-7.4	
11/3	Solution Chemistry & Molarity	6.3	HW 7 Due
11/10	Precipitation Reactions **Team Test III** (@ end of class)	7.1-7.2	HW 8 Due
11/17	Thermochemistry	9.1-9.2	
11/24	Thermochemistry (cont.)	9.3	
12/1	**Team Test IV** Gas Laws	8.1-8.2	HW 9 Due
12/8	Gas Laws (cont.)	8.3, 8.5-8.6	HW 10, Bonus Due
12/15	**Final Exam**	**Chapters 6-9**	

*In the event of a class cancellation or campus closure, any changes to the schedule will be announced on myCourses.