SCOTTSDALE COMMUNITY COLLEGE
A MARICOPA COMMUNITY COLLEGE

Course Information

- **Semester & Year:** Fall 2025
- **Course Title:** General Chemistry 1 with Lab
- **Course Prefix & Number:** CHM151AA
- **Section Number:** 12182 with Lab Section 12183
- **Credit Hours:** 4
- **Start Date:** Lecture & Lab start M 8/25/2025
- **End Date:** 12/19/2025
- **Room Number:** NS-318
- **Meeting Days:** Mondays & Wednesdays
- **Meeting Times:** 9:00 - 11:45 a.m.

Instructor Information

- **Instructor:** Philip Root, BAE Chemistry, MNS Physics, Arizona State University
- **Email:** philip.root@scottsdalecc.edu
- **Phone:** 480-423-6196 (office); 480-900-7697 (text)

- **Office Location:** NS-131 and online via appointment! (message me to set up!)
- **Office Hours:** This semester I will hold **student** office hours at the times & days listed below. To meet with me during those hours, you *can* make an appointment, but you do not need one unless indicated. So just stop by!

  Student office hours are a time when you can come to ask me for help with specific questions, or they can be a time to talk more generally about the course or your field of interest. Please come prepared with what you would like to discuss! If you cannot make it to my student office hours because you have a conflict, you can message me via canvas or email to schedule a different time to meet.

  Mon/Wed: **NS318: 8:30 - 9 am;** **NS131: 11:50 am - 12:50 pm**

  Tu/Th: **NS314: 8:30 - 9 am;** **NS131: *After 3:20 pm by appointment**

  Fridays: **NS-131 (my office) or Google Meet by appointment.**

Course Description

Detailed study of principles of chemistry for science majors and students in pre-professional curricula.

The course format is In Person. Please view your CHM151AA Welcome Letter here!

Prerequisites

- A grade of C or better in [(CHM130 and CHM130LL), or CHM130AA, or one year of high school chemistry taken within the last five years] and (a grade of C or better in MAT151 or higher level mathematics course, or satisfactory placement), or permission of the Instructor, or Department or Division Chair.
- ***Completion of the prerequisite courses within the last 2 years is strongly recommended.**

Course Competencies

There are a total of 11 course competencies that students should be able to perform by the end of CHM151AA.

1. Employ general chemistry terminology, symbols, and formulas.
2. Perform general chemistry calculations involving scientific measurements.
3. Predict the qualitative outcomes as matter undergoes physical and chemical transformations.
4. Predict the properties of matter based on the materials' classifications and structure
5. Draw connections between general chemistry phenomena and observations.
6. Predict the quantitative outcomes as matter undergoes physical and chemical transformations.
7. Calculate quantitative characteristics of matter related to properties and composition.
8. Use theories of quantum mechanics and chemical bonding to predict structures of atoms and chemical compounds.
9. Demonstrate safe laboratory conduct.
10. Manipulate scientific equipment.
11. Summarize experimental findings.

A full list of the course competencies and the course outline are available here.

Note: specific Learning Objectives will be provided during each Unit to help you achieve these competencies.

Texts and Course Materials

1. COURSE TEXTBOOK:
    a. **Course and Lab Manuals** - The Course Manual for this course, including class and lab activities, will be distributed in paper form during the first week or two of the semester. Electronic versions will also be available on Canvas. You are responsible for keeping this packet in a 3-ring binder and bringing the appropriate handouts to class each day.
    b. **Textbook** - "*Chemistry: Atoms First*" 2nd edition by Openstax. This is an Open Educational Resource (OER) textbook available **at no cost** at this link: https://openstax.org/details/books/chemistry-atoms-first-2e

    Please see the "Our Course Textbook - Openstax Chemistry: Atoms First 2e" page in Canvas for more information on textbooks and to view or download our textbook.
2. THREE RING BINDER: This binder will help you keep and organize your Course and Lab Manual and any other materials for the course. If you like to work electronically, I also suggest keeping files & folders in an organized Google Drive, using your school provided MEID account with Google access included.
3. COMPOSITION BOOKS: You will need **two** bound composition books for this course. Plain composition books can usually be purchased for $1-$2.
    a. **The Class/Lab Notebook**: your class/lab notebook is a place for you to jot down ideas, notes for your future self, and record data from class and laboratory activities. *For more info on keeping a scientific lab notebook, see: https://bit.ly/2C8HEGa.
    b. **The Learning Journal**: This notebook is used *outside* of class (NOT during class), and is a place for your personal reflections on how you are growing and what you are learning each week. More info on Learning Journals is available in Canvas.
4. SCIENTIFIC CALCULATOR: A scientific calculator is one that allows you to enter and display numbers in scientific notation. If you need to purchase one, you can find a good one for less than $15. Graphing calculators are also permitted during class, but may not be used on exams. Ask me for advice if you need it.
5. GOGGLES: We will provide you with protective eyewear for use during the class. At the end of the class, you will return the eyewear in undamaged condition. If you fail to return the eyewear or the eyewear is excessively scratched or damaged from mishandling, you will be charged a $7.00 replacement fee.

    **SCC is not responsible for damaged clothing or jewelry.*
6. CANVAS: We will use the Canvas Learning Management System (LMS) for a variety of purposes. Please familiarize yourself with the site and our Course in Canvas. Log in at: https://learn.maricopa.edu/login

Course Policies

The following are policies specific to this course. Students are also responsible for the college policies included on the Student Regulations page of the Maricopa Community College District website.

Participation & Group Work Policies:
Individual participation and engagement is a requirement for both you as students, and me as the instructor! We are both expected to come to class prepared. If a student comes unprepared, their work and their entire group will be impacted. Please expect to be active and engaged, and do not expect a lecture style of instruction during this course. If you are interested in more information, please consult the research article, "Large-scale comparison of science teaching methods sends clear message."

In addition, we will mostly work in student groups during class time. When you as students collaborate, you practice essential skills: communication, leadership, teamwork, and a variety of important executive functions. Students are expected to work together, assist each other, and present ideas to groups and the class. I understand that group work is demanding and rigorous, requires social skills, and introduces a level of interdependency that might make you anxious. So instead of grading this work, we will focus on fostering and developing these skills, helping you improve your Career Readiness.

Cheating and Plagiarism Policy:
I also encourage students to work together when doing homework and labs; however, I would not expect your solutions to be identical! Discussing and sharing ideas is different from copying. Cases of cheating or plagiarism (as defined in the SCC Student Handbook) will not be tolerated and I will pursue the strongest punishment allowed by the College. This is not limited to any student who submits copied/plagiarized work, but also to the student that supplies the material. I will punish both the copier and the person they copy equally, as both are equally guilty. If in doubt, just say No when someone asks to use your work!!!

Cell Phone Policy:
There will be times that you will use your cell phone to research a topic in class or lab, or to communicate with each other during live online group discussions. Appropriate use is understood and acceptable. However, personal or social use of cell phones in lecture is a distraction and, in the lab, is a danger. I will ask you to leave the lab or lecture hall for personal use of cell phones, both texting or talking.

Late Work Policy:

- Due dates are posted in Canvas. Email the instructor immediately if you notice any issues/mistakes with a due date, as instructors are human and also make mistakes.
- You are encouraged to still complete assignments late for feedback and learning. Partial credit can be earned for late assignments IF you contact your instructor to discuss the issue.
- Any late work must be completed prior to each midterm exam to receive any partial credit.

Exam Absence Policies:

- If you are going to miss an exam due to an excused absence, you must inform the instructor at least 2 weeks prior and include documentation.
- If you miss an exam for an unexpected reason, you must contact the instructor within 24 hours of the exam, and when able, provide appropriate documentation.
- If you do not contact your instructor within 24 hours after the exam ends, you may be given a 0% for that exam and you may be withdrawn from the course (with grade of W or Y, depending). A valid excuse with written documentation is needed to make up an exam.
- ***All exams must be taken to avoid being withdrawn from the course.***

Withdrawal Policy:
If you must withdraw from the course, see the Withdrawal Policy information located in the **College Policies & Student Services page** found in the First Steps module of your Canvas course.

**Notes:* *Deadline to withdraw without instructor approval: End of Week 7*
Final Deadline to withdraw: End of Week 14 (requires instructor approval)

Attendance Policy

Attendance is required for this course! Attendance will be recorded for all class and lab sessions. To be considered in attendance:

- Engage in breakout sessions / group work: You will often work together in breakout session groups, allowing you to converse with your group and at times, your instructor. Converse with your group and actively use whiteboards and any other idea sharing technology!
- Engage in whole class discussions: Participate and share ideas, questions, and concerns with the instructor and/or the class.

Failure to follow these guidelines results in an absence, even if you attended class.

Student or Instructor Illness Considerations
Students who are not feeling well **should not attend class**. If you physically miss any class it is **your** responsibility to contact the instructor and make up the work. Your instructor will connect with you if there is an option to attend class remotely or will provide information about how to stay current with assignments and lessons online.

- If you show up late to a lab, you will miss key procedural and safety information and will not be permitted to participate in that day's lab.
- If you exceed 3 absences that are not considered "official absences," I have the option to withdraw you (with grade of W or Y, depending).
- If you are absent for an exam, please see the above exam absence policies.

If your instructor is ill and cannot attend class, updates and announcements will be provided in Canvas, Maricopa email, or other class communication channels prior to class that day if possible.

If you have any special needs or considerations related to attendance, contact your instructor immediately. I understand that life is happening all around us. So just notify me before or as soon as possible if something comes up in your life or if you have concerns that attendance will be an issue. I will work with students who will work hard to learn.

Instructional Contact Hours and Minimum Course Expectations

Instructional contact hours are the weekly time students spend directly learning with their instructor or course activities. These activities include, but are not limited to, lectures, discussions, labs, group work, and viewing recordings. Instructional contact hours vary by course; refer to the MCCCD course bank for your course's details.

Minimum course expectations include the number of hours students are expected to spend outside of class (weekly) completing coursework. Students are encouraged to use the Time Management Calculator to help estimate their weekly time commitment for classes.

Course Technologies

View the Accessibility Statements & Privacy Policies of the technologies used in this course.

Maricopa Systems

This course uses key Maricopa systems for course management and communication.

- Canvas Learning Management System
- Student Maricopa Gmail Account
- Maricopa Open Educational Resource Learning System (MOER)

Synchronous Communication Tools

This course may implement the use of web conferencing and/or other synchronous course tools.

- Google Meet

Streaming Media/Audio/Video Tools

This course uses webcasting, lecture capture systems, YouTube, and/or other streaming media services.

- YouTube

Student Assignment Tools

This course may require students to participate in or submit assignments using desktop or cloud-based applications.

- Google Products
- Logger Pro

Generative Artificial Intelligence (AI) Policy

The World Economic Forum defines generative AI as “a category of artificial intelligence (AI) algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more.”

Some examples of generative AI tools include but are not limited to: ChatGPT, Google Bard, Microsoft Copilot, Stable Diffusion, GrammarlyGo, and Adobe Firefly.

Some Generative Artificial Intelligence (AI) Allowed in Specific Circumstances

There are situations and contexts within this course where you may be permitted to use generative AI tools. Specific guidelines are provided below. If you are unsure if the tool or website you are using is a generative AI tool or if it is permitted on a specific assignment, please contact the instructor for further clarification before submitting your work.

AI tools may **NOT** be used when completing the following assignments[1]:

- Learning Journal Reflections
- In Class Assessments (i.e. Exams)

If you wish to try using AI tools, they may be used when completing Lab Work and Homework assignments (worksheets). If you choose to use an AI tool, you will need to provide the following in the assignment:

- Indicate what you used the AI tool for
- Clearly indicate what content and/or work the AI provided
- Provide an analysis or critique of the content and/or work the AI tool provided

Grading Standards & Practices

Grade Scale*:

Letter Grade	Range
A	89.0 – 100%
B	78.0 – 88.9%
C	67.0 – 77.9%
D	50.0 – 66.9%
F	<50.0%

***Note:** The grading scale is not the typical “10 point scale” so that you don’t have to ask for your grade to be rounded up. For example, if you want to earn an A, shoot for an overall 90%, that way if you end up at an 89.4, your grade is still above an 89and is an A. Anything below an 89, however, will not be rounded up.

[1] See the following section on Grading Standards & Practices for information on assignment categories

Assignment Categories (weighted):

Category	Weight
Exams	60%
Lab Work	15%
Reflection Journal	10%
Quizzes	10%
Homework	5%

***Note:** Please visit your Canvas course page for specific assignments.

Explanation of Assessment Categories:

Lab Work (15%):

One of the skills for success in this course (and life) is to reflect meaningfully on your learning. To help you develop this skill, you will keep a professional lab notebook that will be typically checked at the end of each lab period. More information is provided in the Lab Packet handout you will receive.

During each lab meeting you will be expected to engage with the investigation and actively participate with your group. Your participation in the lab, your lab notebook, and/or asynchronous work after the lab meeting may be assessed each week.

After the lab investigation, you will present your findings by completing a lab report or report form. Lab report work is completed *individually* and must be submitted electronically in Canvas by the posted due date regardless of absences.

Daily Work (25%):

- **Learning Journal Reflections (10%):** One of your composition books will be used exclusively as a Reflection Journal. The goal of journal reflections is to honestly and authentically reflect on your learning each week, so that you can apply the concepts when needed. See Canvas for more information!
- **Worksheets / Homework (5%):** Worksheets containing conceptual questions and practice problems are assigned to help you develop and use the major concepts & models we are developing. These are a 'safe' way to learn, fail, and grow. Worksheets must be submitted electronically in Canvas by the posted due date regardless of absences.
- **Canvas Quizzes (10%)**: Quizzes over each activity's material are provided in Canvas. You should complete them as promptly as possible to check your understanding. You may retake each quiz once before the deadline to improve your learning and your score.

Exams (60%):

- **Nomenclature Quiz**: All students in CHM151 at SCC must complete a quiz to ensure understanding of the particle nature of matter, naming, and formulas. This quiz may be taken once a day in the Natural Science Tutor Center (NS-107) until you achieve a passing score of at least 16

out of 20 or 80%. Passing the quiz will earn 50/50, which is worth half the value of an exam. Deadlines and scoring info:

Nomenclature Quiz Deadline: end of week 8, Friday 10/15

**Not passing this quiz results in 0/50 exam score. As the exam portion of your grade constitutes 60% of your overall grade, and the nomenclature quiz itself is worth 50 of the 450 exam points, your overall grade will drop by 6.7% if you do not pass the quiz. So please take this seriously and get help when needed!*

- **Midterm Exams:** Three times during the semester we will complete midterm exams to celebrate our learning ☺. Midterm exams are cumulative and timed. Exams may include multiple choice questions, short answer, and/or free-response questions. Information and review materials for each exam are provided in Canvas!

  **Tentative Midterm Exam Dates: W 10/1, W 10/29, M 12/8*

- **Final Exam:** For the Final Exam, students will take the American Chemical Society (ACS) first semester General Chemistry exam. This is a 40-question multiple choice exam that is nationally normed and assesses all material from the course. The final exam is mandatory:

  **Tentative Final Exam Date: M 12/15*

Student/Instructor Interaction

In this course, you can expect regular and substantive interaction (RSI) that aligns with Scottsdale Community College's mission to provide challenging and supportive learning experiences and the US Department of Education's requirement for regular and substantive interaction (RSI) for online courses. My commitment to your success includes the following:

- Being available during regularly scheduled student support hours as stated in the syllabus.
- Providing group or individual feedback regularly in class and on assignments.
- Promptly responding to student questions about the course sent via email or the Canvas inbox.
- Monitor your academic progress and communicate concerns, as needed.

Response Time

I prefer that you contact me via the Canvas Conversations (Inbox Messaging) feature within Canvas whenever possible. The second choice of communication is via direct email.

Students can expect a response time of **24-48 hours** for the instructor to respond to messages sent via the Canvas Learning Management System or @maricopa.edu email. While I will not guarantee that I will respond to inbox messages or emails during the weekend, it is likely that I will, so please do not wait if you have a question!

Students can expect assignments to be graded within **one week** of the assignment's due date.

Tutoring

SCC's tutors are available online to help with your courses. You may work with an SCC tutor remotely using Google Meet, your phone, or email. Visit the SCC Tutoring & Learning Centers page for detailed information on the five learning center's hours and procedures.

If you need to work with a tutor outside regular hours, online and hybrid students now have access to a 24/7 online tutoring service called Brainfuse. To access Brainfuse and begin working with a tutor, visit the SCC Online Tutoring Services Through Brainfuse page.

MCCCD Policies

MCCCD is committed to providing a safe, fair, and accessible environment for all students. This includes laws such as the ADA and Title IX, which protect against discrimination. These statements explain your rights, available support, and where to go for help or more information. Please review the following policies:

Classroom Accommodations for Students with Disabilities

Addressing Incidents of Title IX Sexual Harassment

Students are responsible for the information contained in this syllabus, the Syllabus page in your Canvas course and the **College Policies & Student Services** page found in the First Steps module of your Canvas course. Students will be notified by the instructor of any changes in course requirements or policies.