

Syllabus

Course Information

- Semester and Year: Fall 2026
- Course Title: General Chemistry II with Lab
- Course Prefix and Number: CHM152AA
- Section Number: 19029 with Lab Section 19030
- Credit Hours: 4
- Start Date: 8/25/2026
- End Date: 12/18/2026
- Room Number: NS-318
- Meeting Days: Tuesdays and Thursdays
- Meeting Times: 12:30 – 3:10 pm
- Class Format: In-Person

Instructor Information

- Instructor: Mitchell Sweet, BS Chemistry, MS Forestry
- Email: mitchell.sweet@scottsdalecc.edu
- Phone: 480-423-6372
- Text: 602-529-6765
- Office Location: NS-127
- Office Hours: I am available for individual Academic Support in Person (NS-127). Any changes or updates will be posted weekly via a Canvas announcement.
Tuesdays: 7:00 - 8:30 am
Wednesdays: 3:30 - 4:30 pm
Thursdays: 7:00 - 8:30 am
Fridays: 9:00 - 10:00 am

Course Description

A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics.

Prerequisites and/or Corequisites

A grade of C or better in [(CHM150 or CHM151) and CHM151LL], or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.

***Completing prerequisite courses within the last 2 years is strongly recommended.**

Course Competencies

There are a total of 23 competencies that students should be able to perform by the end of CHM152AA:

1. Describe the factors that influence the rates of chemical reactions and the mechanisms by which reactions proceed.
2. Use chemical kinetic data to calculate rates of reaction.
3. Describe the nature of equilibrium systems and factors that influence the position of equilibrium.
4. Solve equilibrium problems involving weak acids, weak bases, and insoluble salts.
5. Define acids and bases using common theories and describe acid-base behaviors in solution.
6. Apply the three Laws of Thermodynamics to determine spontaneity of processes.
7. Describe the relationship between free energy changes and equilibrium.
8. Predict products of and balance redox reactions.
9. Perform calculations involving electrochemical reactions.
10. Write and balance nuclear reactions.
11. Perform calculations involving nuclear reactions.
12. Identify and evaluate chemical hazards and hazard warning signs (GHS System, 4-bar NFPA system, SDS).
13. Cite the location and operation of common laboratory safety equipment.
14. Use lab equipment properly and safely.
15. Accurately measure and dispense reagents.
16. Use pH meters or sensors to measure the pH of solutions.
17. Use scientific measuring devices to obtain chemical data.
18. Record quantitative and qualitative data.
19. Standardize solutions and analyze samples by performing titration experiments.
20. Apply principles, concepts, and procedures of chemistry to lab experiments.
21. Analyze collected data using graphical techniques.
22. Interpret chemical data generated by application of the scientific method.
23. Prepare written reports, present data in a logical format, analyze data, and report conclusions.

General Education & Institutional Learning Outcomes

General Education provides foundational learning experiences that contribute to academic and career success. It is reflected in [Scottsdale Community College's Institutional Learning Outcomes](#): Arts & Humanities Awareness, Career Readiness, Critical Thinking and Problem

Solving, Effective Communication, Information Literacy, and Social Responsibility. Students who take CHM152AA will learn about the principles of general chemistry. Students will demonstrate critical thinking and problem solving by drawing reasoned conclusions based on information and evidence.

Program Learning Outcomes

Credit-bearing courses at Scottsdale Community College can count toward the completion of a degree or certificate program. Each program has Program Learning Outcomes, which are learned assets that students can claim to have acquired by completing their academic or occupational program at SCC. Program Learning Outcomes can be found on the [Degrees and Certificates page](#) of the SCC Website. For each degree, look under “What You’ll Learn.”

This course is a General Education course that is foundational to many degree programs and a key component of the Arizona General Education Curriculum (AGEC) certificate program. This course fulfills an SQ requirement for the AGEC.

By the end of the course, you will increase your ability to:

- Distinguish between processes of change at a particle level
- Develop and use models that closely represent actual physical situations.
- Use fundamental physical laws and principles to solve problems encountered in academic and non-academic environments.
- Apply qualitative and quantitative problem-solving techniques in terms of logic, efficiency, and effectiveness.

Texts and Course Materials

1. RECOMMENDED COURSE TEXTBOOK: “Chemistry: Atoms First” 2nd edition by Openstax. This is an Open Educational Resource (OER) textbook available at no cost at this link: [Chemistry: Atoms First 2e - OpenStax](#)

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. TWO NOTEBOOKS: You will need two bound notebooks for this class. (You can usually find these for a dollar or two)
 - a. One for note-taking during class or lab
 - b. A second for keeping a Reflection Journal outside of class.

*For more info on keeping a scientific lab notebook, see: <https://bit.ly/2C8HEGa>

3. THREE-RING BINDER: Class Activities and Lab Investigations will be provided for you. The binder will help you keep and organize these and other course materials. 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).
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. Ask me for advice if you need it.

5. GOGGLES: We will provide protective eyewear for use during class. At the end of class, you will return the eyewear undamaged. If you fail to return the eyewear, or if it 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 Expectations:

Participation is a requirement! Students are expected to come to class prepared. If one group member comes unprepared, then the entire group will be impacted. Students are expected to work together, assist and teach each other, and present to the class. Students should not expect a lecture style of instruction from the instructor. For more information, please consult the research article, [“Large-scale comparison of science teaching methods sends clear message.”](#)

Cell Phone Policy: You will sometimes 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 lectures is distracting and, in the lab, dangerous. I will ask you to leave the lab or lecture hall for personal cell phone use, including texting and talking.

Attendance Policy

Attendance is required for this course! I will record attendance 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 would result in an absence, even if you attended class.

If you miss any class, you are responsible for contacting the instructor and making up the work. I am not inclined to give make-ups on quizzes or exams unless you have a valid excuse with written documentation and you have spoken with me beforehand.

- If you show up late to the lab, you will miss key procedural and safety information and will not be permitted to participate in that day's lab.
- If you have 3 absences in a semester that are not "official absences," I may withdraw you (with a grade of W or Y, depending).
- If you miss an exam and I don't hear from you by e-mail (or phone if you can verify email is not possible) with a valid excuse within 24 hours after the exam ends, you may be given a 0% for that exam, and I may withdraw you (with a grade of W or Y, depending).

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.

For all MCCCDC attendance policies, please consult Section 2.3.2 at:

<https://district.maricopa.edu/stewardship/maricopa-governance/common-pages/student-regulations>

Student or Instructor Illness Considerations and Class Access

Students who are not feeling well **should not attend class**. Notify your instructor before class starts that day. Your instructor will connect with you if you can attend class remotely or will provide information on how to stay current with assignments and lessons online.

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

Withdrawal Information:

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: October 9, 2026
 This is the end of the 7th Week
 Final Deadline to withdraw: November 25, 2026 (requires instructor approval)
 This is the end of the 14th Week*

Instructional Contact Hours and Minimum Course Expectations

Instructional contact hours are the weekly time students spend learning directly with their instructor or through 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. The [SCC Help Desk](#) provides students with a primary point of contact within SCC for college-supported technology services and technical assistance.

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)

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 requires students to participate in or submit assignments using desktop or cloud-based applications.

- Google Products
- [Graphical Analysis](#)

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 Gemini, 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. In these cases, specific guidelines will be provided in the assignment details. 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:

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

If you want to use AI tools, you may use them for 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 and Practices

Grade Scale*

Table 1 Course Grading Scale

Letter Grade	Points Range
A	89.0 – 100%
B	78.0 – 88.9%
C	67.0 – 77.9%
D	56.0 – 66.9%
F	0 – 55.9%

Assignments

Table 2 List of Assignments

Assignment Name	Points	Percent of Grade
Exams		60%
Lab Work		15%
Reflection Journal		10%
Quizzes		10%
Homework		5%
TOTAL:		100%

***Note:** The grading scale is not the typical “10-point scale,” so 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 89.4, your grade is still above 89 and is an A. Anything below 89, however, will not be rounded up.

Explanation of Assessment Categories:

Lab Work (15%):

One skill for success in this course (and life) is reflecting meaningfully on your learning. To help you develop this skill, you will keep a professional lab notebook, which will typically be 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. Complete lab report work individually and submit it electronically in Canvas by the posted due date, regardless of absences.

Daily Work:

Reflection Journal (10%): One of the most effective ways to learn is to spend time reflecting on the subjects you have been studying. You will write a reflection (with specific guidance) on the topics we discuss each week; it will go in your reflection journal, a separate notebook from your class notebook. Submit the assignment by taking a picture of your reflection and uploading it to Canvas. You are allowed to use your reflection journal while you are taking each of the midterm exams.

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 ‘safe’ ways to learn, fail, and grow. Submit worksheets electronically in Canvas by the posted due date, regardless of absences.

Canvas Quizzes (10%): Quizzes over each activity’s material are provided in Canvas. Complete them as soon as possible to check your understanding. You may retake each quiz once before the deadline to improve your learning and your score by contacting your instructor via Canvas or email and explaining which questions you got incorrect and why the answer was incorrect. In order to have sufficient time to retake the quiz, any requests for retakes must be submitted at least 24 hours before the quiz due date,

Exams (60%):

Midterm Exams: We will complete midterm exams three times during the semester. Midterm exams are cumulative and are timed. These may include multiple-choice, short-

answer, and/or free-response questions. You will receive a periodic table and reference sheet for each exam.

*Tentative Midterm Exam Dates: 10/1, 11/5, 12/8

Exams are typically administered during class time through Canvas. **Any navigating away from the Canvas Exam to a different browser window, to your computer desktop, or any other app (as noted by Canvas) will result in a “0” for individual questions and/or the entire exam.**

Nomenclature Quiz: All students in CHM152 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 4, Friday 9/18

**Not passing this quiz results in a 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!*

Final Exam:

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

*Tentative Final Exam Date: Tuesday 12/15

Additional Exam information:

- All exams must be taken to avoid being withdrawn from the course.
 - If you are going to miss an exam due to an excused absence, please 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.

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.
- Late Work Policy: You are encouraged to still complete assignments late for feedback and learning. You can still earn credit for late assignments, with a 10% credit reduction per day late, up to a maximum penalty of 50%.
- Complete any late work by the end of each unit.

Response Time

Students can expect a **24-48 hour** response time for messages sent via the Canvas Learning Management System or @maricopa.edu email. 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 [Tutoring & Learning Centers](#) page for detailed information on the five learning centers' 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

In accordance with the Americans with Disabilities Act (ADA), the Maricopa County Community College District (MCCCD) and its associated colleges are committed to providing equitable access to learning opportunities to students with documented disabilities (e.g. physical, sensory, neurological, chronic illness, mental health, learning disabilities, or other health concerns). If you require accommodations for this course, please contact [Disability Resources and Services](#) (DRS) at your college.

Contact with [DRS](#) should be made as soon as possible to ensure academic needs are met in a reasonable time. Additional information can be found in the [Non-Discrimination Statement](#) and [MCCCD Non-Discrimination Policies](#).

[Addressing Incidents of Title IX Sexual Harassment](#)

Students are responsible for the information contained in this syllabus, the Syllabus page in the Canvas course, and the College Policies & Student Services page located under SCC Student Resources in the Canvas course navigation menu. The instructor will notify students of any changes to course requirements or policies.