# Advice for Succeeding in College-Level Chemistry

1. Work with others in groups, but make sure you allow quiet time to study alone.
2. Attend class, take good notes, and listen actively. Read over/rewrite notes after class.
3. **Don't** cram the night before an exam, but do study a lot the few days prior. This is in addition to practicing and reading daily. Learning chemistry is like learning a foreign language, it takes a lot of **practice**.
4. Recognize that grades are lowest in science and math at any university. Chemistry requires both memorization and problem-solving, making it a particularly demanding subject.
5. Study two hours for each lecture hour and one hour for each lab hour **each week** (this is about 12 hours a week for 4 credit hour chemistry courses).
6. Practice working problems, then study the problems before the exam so that you can put problems in categories and know exactly what steps you need for a certain type of problem.
7. Predict the content of exams.
8. For problem-solving: identify what is given, identify what is asked for, develop a plan (should already have one for most problems), do calculations, see if answer is reasonable, check significant figures, check your units, and make sure you rounded correctly.
9. **Beware of solution manuals**…you must attempt problems on your own, check for the correct answer in the back of the book/chapter, try to identify errors in your setup and calculations, and then use the solution manual as the absolute last resort.
10. Watch for connections between your everyday life and chemistry. Read labels, explain events, watch the news, and notice connections between chemistry and your other classes.
11. Try another chemistry textbook if you read something in your textbook several times and still don't understand it. Another book may have a clearer explanation.

12. Make sure you are comfortable with the math required. If not, review on your own. You might need to drop chemistry and take another math course if this still does not work.
13. Chemistry is foundational; it builds on itself (atoms to molecules, molecules to reactions). Make sure to learn the necessary algebra, the metric system, the factor-label method, scientific notation, significant figures, symbols and names of common elements and polyatomic ions; **don't** just memorize these things for the test. General chemistry is the foundation for analytical, organic, physical, and inorganic chemistry, organic chemistry is critical for understanding biochemistry, etc. This makes it particularly important to not get behind in any individual course and to be willing to review content from prior chemistry courses. Keep your chemistry textbooks!
14. Chemistry textbooks are dense. Read and work problems for one section at a time then take a break before doing the next section.
15. Read the experiment and complete the pre-lab exercises **before** coming to lab. Make sure to **bring your safety goggles to lab** or you will not be allowed to participate and will lose the grade for that day.
16. Make connections between lecture content and lab.
17. Keep an organized notebook for your notes and problems you have worked. You will need to study notes, problems, exams, and homework for the final exam since most chemistry finals are comprehensive.
18. If you do not understand a topic in lecture and the textbook does not help, do not hesitate to request time with your faculty member. Faculty members can often clarify points one-on-one because they can identify where you are struggling. This needs to be done at the first sign of trouble, not later in hopes of a miracle. If you are struggling, don't wait for things to magically get better. If study efforts are not working, immediately seek help from your professor during office hours.