

Success in General Chemistry

Students committed to learning will find many possible paths to success. No path is error free, but the path best for you may not look like the same path as another student. For this reason, students should continuously assess their academic progress in courses and adjust their academic strategies accordingly.

While there is no magic formula, the following suggestions may improve your ability to succeed in chemistry and increase your retention of knowledge.

1. **Attend class and lab:** This is like stating the obvious, but there is a lot of content in chemistry classes and labs that may be presented to you for the first (and possibly only) time. If you skip, you will never know what you missed.
2. **Read ahead of lectures:** If you are frantically taking copious notes during class (or are lost) you likely are not reading enough before class. You can control your reading pace but you cannot control your instructor's lecturing. Hence, make your "first contact" with new course material be under your control by reading before class. You will find that reading ahead allows you to focus on new details in class that you might otherwise have missed.
3. **Understand the steps to problem solving:** For example, the CHEM 177/178 textbook suggests the following steps to solving problem solving:
 - Analyze: Restating the problem and the given facts. Determine what you will need to discover.
 - Plan: Determine the steps you will need to solve the problem. Consider formulas and other values that will be needed. Write down the equations needed for solving the problem.
 - Solve: Step by step, work your way through a problem. Ensure you can rationalize each step.
 - Check: First, review your steps for simple mistakes you may have made. Second, test yourself-can you provide a reasonable explanation of your answer?
4. **Use your online resource:** This is a tool provided by the textbook publisher that will allow you to self-test your knowledge in numerous ways.
5. **Embrace repetition in problem solving:** If your instructor expects you to solve 10 problems, consider this your minimum. You should work out every problem twice and do extra problems. The practice problems at the end of the chapter are a great

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resource to get some extra practice with the concepts from that chapter. This extra effort is the difference between testing your luck and being a good student.

6. **Do all homework:** Chemistry homework replicates what may appear on exams/quizzes. Hence, all homework is test preparation.
7. **Determine the purpose of what you are doing/solving:** Your ability to use full sentences to explain why these problems are important and what the goal is will improve your understanding increase your learning pace overall.
8. **Learn the processes:** You can get the right final answer as a fluke, without having any idea how you did. Focus on understanding the solution process as the right answer.
9. **Use extra study opportunities to learn with peers:** Problem solving in groups is a key consequence of long-term retention of knowledge. Be actively involved in labs, Supplemental Instruction, the chemistry help room, recitation, or other study group opportunities.
10. **As soon as you struggle, determine why:** Chemistry concepts build upon each other, and you need to resolve your struggles before they compound. Besides using group study opportunities to develop your ability level, also connect with your instructor or TA. You don't need to struggle to reach out. Your TA/instructor are great resources for learning the material.
11. **Be logical and critical:** Problem solving is a process of logical steps, but to be a good problem solver requires critical thinking ability. Be conscious of the process it takes to solve the problem.
12. **Study often:** Find the best way for you to study whether its by yourself or in a study group. After each lecture go through your notes and summarize the material. The minimum amount of time students should devote to chemistry is not the same for everyone. Determine your minimum amount per day and seek to exceed this goal.