Before attending the class:

1. Lecture class is not the best way of learning to write but you can get more out of a lecture by following the tips, given below.
2. Writing takes more time than you would expect, and be prepared to spend more time per week than on other courses. Spend that time evenly over the entire semester. You expected to complete the assignments on a timely manner.
3. Read the syllabus and keep track of the class schedule. We will not stray too far.
4. Read the reference book on a regular basis.
   a. Keep the reading focused – do not read too much ahead.
   b. Use the first-reading to get an idea of what will be covered in the class. Familiarize yourself with the terms, concepts, and techniques.
   c. Do not get hung-up because you did not understand some detail. Make a note. Highlight areas that you are not clear and move on with the reading. Yes, writing requires reading, sometimes a lot of reading. These issues may be addressed in the class, if not, work on them with your group.
   d. Always read with a writing implement in your hand and write questions or comments in the book, as you read. Do not go back and forth between the book and the notebook. That process creates an unnecessary barrier to learning.
   e. Highlight only sparingly, if needed. Do not overdo. You can also highlight PDF files and take notes. Get yourself a laptop.
5. Skim the notes or the assignment from the last class and figure out how it is connected to the next class. Finish any assignments or questions that are due. Be up to date.
6. Bring pencil and paper or your laptop to the class.

During the class:

1. Attend the lecture! Half of life is just showing up. We take attendance and this becomes important when we want to adjust your grade, write a reference letter or when your grade may be improved by adding a few points.
2. Pay attention: When in the class, spend that time focusing on the lecture. Be an active participant. Think about what is going on. Figure out how the analysis is being used in effective writing, or graphing or messaging etc.,
3. Volunteer answers: There is nothing more demoralizing to the instructor than to ask a question and face stunning silence. Be brave. Perhaps, others in the class are also thinking about the same answer as you do, and give your best shot. The goal of asking you to ask questions in the class is to tailor the material to your learning needs. This is the important feedback that we are looking for. Right or wrong, answers are useful to instructors to adjust to the class needs.
4. Take notes: Writing, listening and visualizing engage different parts of the human brain and multimodal learning increases cognition and retention. It also results in a better understanding of the material. Most handouts are provided to you on the web but take notes and compare. Write more explanations! Leave extra space to write more comments, later.
5. Ask questions: If you are confused about the meaning of a term, word or a concept, or where the class is heading, ask. Each and every question is important in tailoring the lesson to the class needs. Most instructors value such contributions.
Chem 3170  
Dr. Challa Kumar

6. **If you cannot attend the lecture** for very compelling reasons, then borrow notes from a classmate. Read, work the assignments and do not expect the instructor to provide you with notes. It is your responsibility to make it up and submit the assignments in time.

**After the class:**
1. **Working in groups.** Meet your group after the class at the Chem Cafe. Have coffee or snack. Discuss the lecture and go over the questions and the assignments with your group members. If they are unable to answer, then approach the instructor. Annotate your notes. Fill the blanks, correct any errors, add examples, work and rework the assignments. Writing is fun when you notice the progress you are making. Compare your old work with revised ones.
2. Read the book and **update your notes.** See if you could answer the questions you got before the class. Add additional material from the book.
3. **Do the assignments** and the literature search required for the assignment.
4. **Discuss** your assignments with your group. Compare notes but be careful to keep a clear distinction between your work and that of others. **Do not plagiarize!**

**Working in groups:**
1. **Sign-up** for groups during the first class. Each group will have a leader who will coordinate the group’s activities and report to the instructor how the group is doing.
2. All members should participate frequently with no one dominating. **Set ground rules** in the first week and make sure everyone understands them. Go over the assignments before you discuss them with your group.
3. If a member of the group is not contributing their fair share, let the leader know. If the issue is not solved then bring it to the instructor. **Intervene early** and do not wait until it is too late.

**Writing assignments:**
1. **The moment of truth** arrives with the writing assignments. Knowing is one thing and expressing it in written form is an entirely different thing. Three important things: a. writing is a skill and practice makes it perfect; b. there is more than one way to describe an idea, argument or concept; c. little knowledge is too dangerous. Writing is a true discovery! Find what is already there.
2. **Keep three time-slots** for writing. Rough-in, revise and proof. Write frequently and do not allow long time gaps between sessions. These can make you forget what you wrote, the last time.
3. **There is no exact, or one correct way** to write. Try different approaches to suit your skills. Revise, revise, and revise.........
4. **Consistently go at it,** and do specific writing assignments. These assignments are important for improving your writing skills.

**Techniques For Good Writing**

**Prepare.**
1. **Read.** Know well to write well. Pay careful attention to the wording in the assignment. Try to understand what is being asked and how to address it.
2. **Brainstorm.** Imagine that you are telling a story. Figure out how you can help the audience to easily understand the material. Do not expect them to assume. Figure out what to include and what not. Evaluate your audience needs. Imagine doing the experiment or collecting data or analyzing the results. Write the same way.
3. **Draw.** Most assignments are centered around an experiment or a concept. Be the person doing the experiment. Draw the set-up and indicate what needs to be described. Good writing is accompanied by stunning graphics. Charts, schemes, figures and tables help.

4. **Set goals.** Write the topics to be covered (goals), and pay attention to what is important and why. Look-up relevant articles in the literature. Be thorough. Read extensively and take notes.

5. **Outline.** Try breaking down the assignment into smaller pieces or intermediate steps. Connect them by concepts or examples in a logical sequence. Synthesis should come before characterization, for example. Outline your strategy to write.

6. **Format.** Each and every technical document has a specific format. Familiarize yourself with the required format. Pay careful attention to details. Once an agency returned a science proposal by a prominent scientist without review, because the references cited were not formatted correctly. Follow the format literally. No ifs or buts!

**Write.**

7. **Execute.** Use the data and the literature gathered to describe the central idea or the concept. Be technical and avoid flowery writing. Write in words which are simple to understand, in clear sentences. Use multiple modalities such as a graph, a cartoon or an equation to supplement the text. Try continuing the writing, after a break. Use proper punctuation, grammar, and sentence construction. Ideas should flow spontaneously.

**Revise.**

8. **Revise.** Make alterations in your strategy to clarify the document, if necessary. Five to nine revisions are common. Divide the document and re-align until the content flows well in a scientific manner.

9. **Final check.** Check if the document is lucid, concise, and well structured. Check grammar, punctuation, spelling and structure. Check for transitions, summaries, clarity, examples, equations and format. Proof it. Judge if your writing is good or not. Make changes, if necessary. Never submit without proofing your work.