How to do well in this (or any) ChemE course

Every one of you is capable of passing this course with a C or better. But every year, many students receive grades of D or F in this course. How can you avoid this fate?

In brief: attend class, take notes, read the lecture notes and the book, do the homework, come to office hours, attend recitation sessions, and stay caught up.

There are several “paths into your brain” that we use in teaching ChemE courses: reading (textbook and lecture notes), listening (lectures), writing (taking notes), practicing (homework), and conversing (office hours). Some people learn better by one means or other, but everyone is helped to some extent by all of these.

Attend class. The lectures do not simply repeat what is in the textbook. Materials will be explained differently in class, with different emphasis. Some information will be presented in lectures only. Listening is another “path into your brain”. And, you have the opportunity in class to ask questions, and to hear questions that others ask. If you have a question, likely others have the same question, so don’t be shy about asking.

Take notes. Taking notes — writing the main points, questions that occur to you, explanatory comments — serves three purposes. The act of writing notes, summarizing what you heard, is another way for the ideas to get into your brain. You then have your own summary of what you understood and what you didn’t. Reviewing your notes helps remember the lecture, and reminds you of what you don’t yet understand.

Read the lecture notes and textbook. You will not understand everything in lecture the first time you hear it. To remedy this, you can read the detailed lecture notes, which my lectures will follow most closely. The textbook gives another “take” on the material. Remember to read slowly. A textbook is not a novel. The reasoning is sometimes hard to follow the first time. Read, ponder, and cycle back if you are confused. Ask yourself what you are confused about — formulate a question — and then read again.

Do the homework. The most important thing you are meant to learn in this class is a set of problem-solving skills. Homework is where you practice these skills. (And, they count for 25% of your grade.) A key challenge of ChE220 is learning how to translate a word problem to be solved into a calculation to be done — what models or equations to use, what approximations to make. This skill is not taught well in your science courses. Pay attention to this.

I strongly advise that you work all the homework problems on your own, before getting together with friends to check your results. It is all too easy to let someone else “carry” you, without you even realizing it, if they provide you the key insight on how to think about and set up the problems. Then, in a quiz or test, you will not be able to figure out what to do.
Finally — use good habits in writing up homeworks. Staple pages together. Print your full name on the upper right. Write legibly. Leave enough white space. Draw figures. Briefly describe in words what you are doing. Stay in variables as long as possible before plugging in numbers. Put a box around your answers. To grade your papers, someone has to be able to read them.

**Come to office hours.** After real effort in understanding the lectures, the book, or the homeworks, if you are still confused, come to office hours. (We will not tell you how to do homework problems, so don’t ask.) Your questions give us useful feedback about what students are confused about. And, your presence in office hours over the semester is an indication of the effort you are making to do well in the class.

**Attend recitations.** The teaching assistants for this course will conduct recitation sessions several times each week. Attendance is not mandatory, but strongly encouraged. In these sessions, the TAs will lead students in solving example problems, covering the same material as the current homework assignment. They will not answer questions about how to do the current homework problems.

**Stay caught up.** Like math or science courses, this course builds on itself. If you are not “caught up” — if you do not understand the material up to the present — then you are not equipped to understand the next lecture, or do the next homework. You cannot cram for this course. And, the schedule of weekly homeworks and quizzes every two weeks are designed to keep you caught up (or remind you that you are not).