How to Succeed in CS 1302

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# Attributes that Lead to Success

There are four attributes that lead to success in this course:

1. A good understanding of all the material in CS 1301 and the ability to write code given a description of the need.
2. Work ethic – This means lots of practice, experimentation, perseverance. See list below.
3. Intellectual maturity:
* You know what you are supposed to know
* You know what you know and what you don’t know

If you can’t explain in words, and illustrate/solve on paper, with no outside resources a concept/topic/problem, then you don’t know it.

1. Analytical/logical/mathematical ability – You probably think that this is innate. Maybe it is; however, it can be improved by following the steps below. You must continue to strengthen you analytical ability.
2. The ability to experiment to solve problems. Simple example: you’ve tried to get something to work, perhaps over multiple days. Solution: find a piece of code that is similar that does work. The labs for this course, and the examples in the text can always help. So, load that code up and slowly modify the code with your problem. That is a type of experimentation.

# Daily Activities

You should do the following things and spend at least 4 days a week working on this course outside of class, probably 9-12 hours per week. That may not be enough for some. You may need to relearn portions of CS 1301.

1. Read the text before class over the material we will cover that day in class, 15 minutes or longer. The tentative pages are always posted on the Schedule.
2. Attend class with notes printed and take hand written notes on them. There is strong statistical evidence that writing notes by hand increases the information you remember long-term[[1]](#footnote-1).
3. Reread the portion of the text covered in class as soon as possible after class.
4. Use the sample code that accompanies each chapter to experiment with the code we go over in class.
5. Write, compile, and run the Exercises in the text.
6. Start work on homework the day it is assigned.
7. Take notes on the things you didn’t understand and then resolve them by: talking with me, class mates, tutors, supplemental instructor, and/or independent study.
8. As you do the items above create an ongoing Knowledge Base (*e.g. study guide*). This should be a record of everything you need to know for the unit we are covering: definitions, syntax, short snippets of code that illustrate something important, class diagrams. You should aim for this to be 1 page front and back, preferably only the front page. It is OK to just jot things down in a journal for this, but at some point you should condense it down to just 1 page, the essence expressed in your own language.

# Preparing for a Test

If you have diligently done the daily items above, with intellectual maturity, you are mostly done. In that case, I suggest:

1. Reread the text (this will be for at least the third time).
2. Use homework problems, Exercises in the text, and problems in the body of the text.
* Write some code by hand.
* And/or explain in words (speak it to yourself or someone else) the solution.
1. Practice explaining everything in your Knowledge Base. Repeat this regularly, for instance as you walk across campus to/from your car.

Appendix

1. Take notes on things you don’t understand

If you skim over something you don’t understand, how are you going to remember to go back to it? When it pops up again? Maybe you will remember, or maybe you will forget. If you remember, how are you going to remember what you didn’t understand? You may have to recreate what you already went through. This is a poor strategy. A good strategy is to take notes on what you don’t understand. Write it down. Be specific. For example, you understand X, Y, but not how that leads to Z. Then, you have a focus. I’ve seen students do the following: (1) using highlights in a digital form of the book that also allows notes, (2) printed copy of text with post-its and written notes on page, (3) Written in a file or a piece of paper, with careful connection back to the text/lab/hw, etc by using page/section numbers, etc.



1. <http://www.psychologicalscience.org/index.php/news/releases/take-notes-by-hand-for-better-long-term-comprehension.html> [↑](#footnote-ref-1)