Should I take CS 225 with CS 173?

NOTE: From Fall 2019 forward, it is no longer possible to take these two classes together under any circumstances. This page is kept for historical insight.

NOTE: From Spring 2018 forward, this may or may not apply. The main change is that due to the overhaul of the prerequisite system, it is no longer possible to take CS 225 and CS 173 together. The main way to get out of this is to get an A in ECE 220, which allows you to take the courses together. On the programming side, this could be a good idea, due to the programming maturity making CS 225 a bit simpler. The issue however is that the block is due to an increased emphasis on proofs, which are more frontloaded now. ECE 220 has a very minimal amount to do with actual discrete mathematics and nothing to do with proofs, so should one be expecting to be fine on the mathematics side, they may be mistaken. In this case however it is VERY possible to self teach and keep pace with the material; as mentioned above, the overlaps in topics is barely important, so it is very possible to pick topics required and learn one at a time. One more option is to simply learn the proofs outside of the class later; Big-O is the only thing tested from 173, should the CBTF standards remain, it is possible to get an intuition for Big-O and then (should the 220 A condition be met) wait until the material is taught in 173 and go back to the 225 material.

Relevancy:

CS 225 - Data Structure - As the name states, the class focuses on different kind of data structures: link list, stack, queue, tree, etc. The first part of the course is mainly on C++, then it progress to the different types of structures and their efficiency.

CS 173 - Discrete Structures - This class deals with many types of proofs: induction, contradiction, etc. There are also a lot of math, such as number theory, graphs, and functions.

There are a couple things that are covered in CS 173 that will be covered again in CS 225. These are Big O, tree, recursion, proofs and proofs notations. These overlaps in topics are trivialized by the style of the instructors, and the focus of the course. For example, in CS 173 recursive proofs are expected to written in very specific steps of base case(s), induction hypothesis, and induction steps. Whereas in CS 225, one must follow another proof guideline, which is very crucial to the exam, since it’s generally fill in the blank. Another example is Big-O. This topic is covered very briefly in CS 173. However, in CS 225, it is very extensive and it's worth 25 percent on the second midterm. The only part of CS 225 that really requires you to know everything from CS 173 is HW0. HW0 is the first assignment in CS 225, which test the student's basic knowledge in discrete math (CS 173). It is worth one percent of the total grade - so it isn't really that important. Prior experience in CS 173 will definitely help with CS 225, but it is definitely possible to take both at the same time.

Workload:

In term of work loads, CS 225 requires a lot of time. There are seven MPs, 6 of which have extra-credit checkpoints - essentially, this boils down to completely part of an MP every week. MPs are due even on exam weeks. In addition, there is a lab section every week. In contrast, CS 173’s workload is very minimal. Its mini-homework and homework are very important and the grading is very harsh, especially for the mini-homework. The MPs for CS 225 are usually due on Friday at midnight. As for CS 173, the homework is usually due on Wednesday, and the mini-homework on Monday; thus, you'll almost never have anything due in both classes on the same day.

Recommendation:

Although CS 173 is listed as a prerequisite for CS 225, it is not necessary to take these classes in order. In an ideal situation, one should take CS 173 and then CS 225 in the following semester. But sometime scheduling just does not really work out this way. For example, the courses could fill up, or other required classes may be scheduled at the same time, which can make it harder / impossible to take CS 173 or CS 225 in different semesters. It is definitely okay to take both at the same time. However, one might want to consider the amount of work required for other classes before deciding on this path. A nice and easy way to take them both together is to take one other major course, a Gen. Ed. course, and a required science or rhetoric course. But this really depends on how hard you are willing to work. If you think you can handle more, go for it. As mentioned in the relevancy section of this document, the overlap of the course is negligible. It is also possible to take CS 173 after CS 225, though very few people end up doing this.