

# Suggested Course of Study for BCS-OL Students

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A few folks have been asking for advice regarding what order to complete classes in, so I've composed a few thoughts here. Be advised that I have no qualifications to give advice and I am not yet finished my degree, so take these words with a grain of salt. Please feel free to add to or disagree with what I've said!

## General thoughts:

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1. You will get out of this degree exactly what you put in. The vast majority of the content is self-taught from textbooks, free online resources, and your own research and tinkering. If you spend more time on a course, read the textbooks thoroughly, and spend lots of time experimenting and working on assignments, you will learn more than if you rush through and do the bare minimum. If you are independent and self-starting this program offers an incredible amount of freedom to schedule yourself and lets you dive deep on the topics that interest you.
2. Pace. So how long should you expect to spend on each course? It varies by individual and by course, but generally speaking the online courses will keep you as busy as an in person course would. 5 courses/4 months (1.25/mo, the same as an in person program) keeps me *extremely* busy. However, I am only taking CS courses so it's possible that other departments are easier, and I do like to dive deep into the readings and assignments. I think completing courses any faster than this would involve skipping substantial material and not getting your money's worth out of the course.
3. Concurrency. If you're not getting student loans, you can complete courses as many at a time as you like. Personally, I find enrolling in one at a time great when I enjoy the course, and unbearable when I don't. I much prefer to have at least two on the go to soften the blow of unpleasant courses, and to give me something else to work on if I'm waiting on feedback on an assignment or a response to an email.
4. Student loans. If your schedule allows you to take 3+ courses each semester (4 month period starting at any month of the year), apply for student loans. You lose a lot of the flexibility over your schedule, but you may end up getting substantial amounts of student loans, *especially* if you're more than 10 years out of high school. I'm currently receiving ~\$4000 of grant money and ~\$2000 of loans each semester because I graduated more than 10 years ago and am not making any money... because I'm in school.

## Scheduling Suggestions (sorted by course code)

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**1131, 1231** -> Intro Java courses. These should be the first two computer science courses you take, in this order. While you *can* take other courses before or during these, you'll use Java in a lot of your other classes and if you are new to programming it is helpful to get a good grasp on one language before attempting to learn others.

**Math 1651** -> Math for CompSci. It had been 10 years since high school math for me, and it showed. If high school trigonometry and probability concepts are fresher in your memory, you might not struggle as much as I did, but I think that the linear algebra portion will be challenging for almost anyone.

**Math 1701** -> Discrete Mathematics. You don't have to do this course early on, but I think it makes sense to. You learn concepts that you might not depend directly on but will make learning other things easier later on. I don't think it really matters if you do Math 1651 or 1701 first, but you'd have to *really* like math to do them at the same time. I found both math courses extremely difficult.

**2131** -> Computer Systems. This is a heavy, technical, course with lots of reading, but it is *really* important. I recommend completing it as early as possible after 1131/1231.

**2161** -> Mobile App Development. This is a "paced" course... in theory. You have to enroll for a particular offering that seems to follow normal university semesters (i.e., starting in Sep/Jan. Not sure about May). My offering did not feature any paced components other than a requirement to finish the course by a certain date. The final project for this course is very open ended, so it can be very challenging if you want it to be.

**2211** -> Called "Programming Methods", is actually an Intro to Python and C#. This course can be completed at almost any time. The textbooks are *very* beginner friendly so it could even be your first CS course if you want. Be warned, however, that the final exam is much harder than the assignments and quizzes. I rushed through the course content in a week and aced all the assessments prior to the final, only to get an unpleasant surprise...

**2231** -> Data structures and algorithms. I recommend taking this course as soon as possible after 1131/1231. You probably won't directly need it for other courses, but you'll see references to these concepts all over the place, and you'll be able to use these concepts in your assignments throughout your degree.

**2681** -> Web Design. Doesn't really depend on any other courses, but is a prerequisite to the Advanced Web Development course (still not offered by TRU). If you have prior experience with HTML/CSS/JavaScript, this course will be quite easy.

**2921** -> Software Architecture. I recommend taking this course later in your degree. While the second half of the course (about UML modeling) is useful at any point in your degree, the first half (about really big picture software structure concepts) will likely make more sense and be more useful later on.

**3261** -> Internet and Security Issues. Haven't taken it yet, but seems like it would be best to take after 3271.

**3271** -> Computer Networks. Haven't taken it yet.

**3411** -> Operating Systems. There is an enormous amount of reading assigned for this course. You don't have to do it all to complete the assignments (and the final exam follows the assignments closely), but there is a ton of interesting information you might not want to miss. It's interesting and parts of it are very useful, but it is a lot of work.

**3521** -> Software Engineering. Haven't taken it yet, but it seems like it would be best to take this later on for similar reasons to Software Architecture.

**3541** -> Web Design and Programming. Haven't taken it yet.

**3611** -> Database Systems. I haven't take this yet but I've heard it's very challenging.

**3541** -> Human Computer Interaction Design. Haven't taken it yet.

**3711** -> Applied Artificial Intelligence. I haven't taken this yet but I've heard it's very challenging.

**4911** -> Project. Haven't taken it yet.

## Possible Order

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1. 1131, Math 1651
2. 1231, Math 1701

3. 2231, 2131, 2211
4. 2161, 2681, 3411
5. 3611, 3271, 3541
6. 3261, 3541, 3711
7. 2921, 3521, 4911