

Computer Science I – Foundation Exam Lecture

The website with information and all relevant links for the exam is here:

<http://www.cs.ucf.edu/computer-science/#foundation-exam>

Here is perhaps the most important information that a student needs to know WHILE THEY ARE TAKING COP 3502 about the exam:

- 1) Only required of Computer Science majors!
- 2) Only eligible to take the exam within one year (12 months) of passing COP 3502 with a grade of C or higher.
- 3) Given the first Saturday of every semester. (We aim to start at 10 am, asking students to arrive where the exam is being given, typically CB2, at 9:30 am.)
- 4) If you pass COP 3502 in the Fall 2023 semester, for example, then you would be eligible to take the exam in the Spring of 2024 (Jan), Summer of 2024 (May) and Fall of 2024 (Aug).
- 5) If you choose not to attend an exam you are eligible for, your eligibility is NOT extended. (Thus, if you pass COP 3502 in Fall 2023 but do not take the Spring 2024 exam, you would have at most two chances, Summer 2024 and Fall 2024, to pass the exam.)
- 6) If you are an SAS student, you must sign up for the exam with the CS department, and then sign up with SAS. Since SAS is closed on Saturday, if you take the exam with SAS, you'll have to take it the day before (Friday) and sign a form stating you won't discuss the exam with anyone until all other students complete the exam.

Foundation Exam Structure/Rules

- 1) The exam lasts 2 hours.**
- 2) The exam has four sections, now labeled A, B, C and D. You get all four sections at the beginning of the exam.**
- 3) Each section has 3 questions. Two of those questions will be worth 10 points and one of the questions will be worth 5 points. Thus, each section has 25 points total to earn and the exam is scored out of 100 points.**
- 4) Each question comes from a specific list of topics. To see which question is from which topic, go to the link “FE Exam Structure” on the Foundation Exam Webpage.**
- 5) AIDS: Formula Sheet (also on the Foundation Exam Website) and scratch paper. In particular, no calculators are allowed.**

How to Sign Up

- 1) Go to the Foundation Exam website and click on “Ready to Sign up”.**
- 2) Registration Deadline: Wednesday at noon BEFORE the exam. (So, roughly 70 hours before the exam starts.)**
- 3) When you can sign up: After results are posted for the previous semester’s exam. In practice, this is usually about one month after the previous exam is given. So, COP 3502 students can sign up NOW!!!**
- 4) Please triple check that the email address you enter (your ucf address) is entered properly when you register. This is how you receive communication about the exam (which room, time, etc.)**

How is Passing Determined?

The difficulty of the questions is assessed and the distribution of grades is examined. Both data points are then used to determine a passing line. Each of the following has been chosen as the line for the passing score: 50%, 55%, 60%, 65% and 70%.

On the website, off the link “Past Exams”, the third column for each exam from August 2015 has an “Info” document. This document shows the average scores (on the exam, per section and per question) as well as the passing line for each exam. Examination of these documents will reveal that a fixed percentage of students are not chosen to pass, nor is the passing line fixed. Care is taken to maintain the rigor of the exam while accounting unforeseen difficulties that may have hampered students’ grades. The goal is usually to set passing around 60%, but adjustments are made based on the distribution of scores and the perceived difficulty of questions, as necessary. There have been both unusually strong cohorts of students and unusually weak ones. (Spring 2020 was quite strong, January 2017 was weak.)

Process if you Pass

- 1) Go to the website after results are posted and click on the link “Current Exam Results” to find your results.**
- 2) If you pass, you will be assigned an advisor. You will receive an email with your advisor’s name and email address. Also, you may click on the link “Find Advisor” about a week after you receive your results to find your advisor.**
- 3) You must contact your advisor to arrange an advising meeting to discuss a plan of study.**
- 4) Either you or your advisor should submit your plan of study, signed by your advisor, to Jenny Shen.**
- 5) Jenny will send you an email with instructions to register for COT 3960 on myUCF for the appropriate semester. (Not the semester you took the actual Foundation Exam,)**
- 6) Follow those instructions!**
- 7) Then you can sign up for COP 4331, COT 4210, etc.**

My Study Tips (when you are in COP 3502 and right after)

If you are in the class currently, just do the class work required and do your best to prepare for the final exam. After the final exam, assess your strengths and weaknesses.

Pick 2 or 3 weaknesses to work on:

- 1) Go back over the notes on these areas.**
- 2) Do some practice questions from old exams on these topics (click on Past Exams from the Foundation Exam website)**
- 3) Review your solutions with the posted ones.**
- 4) If your weakness is code related, type up related code (say a linked list, binary search tree insert) from scratch and test it on your own IDE. The testing and debugging process is enormously educational.**

Then, finally, take one practice exam in a timed setting, so you get an idea of time management during the exam.

Day of the Exam Tips

- 1) Sleep well for several nights before the exam (7 or more days).
- 2) Have a decent breakfast, but don't stuff yourself.
- 3) Read ALL the questions by the 30 minute mark!!!
- 4) On the first pass reading through the questions, you are trying to identify each of the 12 questions into the following categories:

- (a) I know how to do this and it's fairly quick to solve,
- (b) I know how to do this, but the solution is somewhat lengthy,
- (c) I am not sure how to do this.

- 5) On the first pass, only stop to solve questions in category (a).
- 6) On the second pass, do all of the questions in category (b).
- 7) On the third pass, do the best you can on all the questions in category (c). It's important to try to earn partial credit on every question. Even if you're not sure how to solve a problem, maybe you know what the base case ought to be, or how to set up the equation necessary. Write down these steps as there are usually points allocated for them.

- 8) There is a happy medium between "tunnel visioning" (which is working on one problem and never giving up until you get it), and "thrashing" (switching between too many questions).

If you spend too much time getting stuck on one question, you may not have enough time for other questions. But...switching your mind from one question to another has the cost of context switching – it takes your brain a bit of time to forget about the question you were working on and shift gears and "load into working memory" all the relevant facts about the new question. So, watch out for both extremes (don't get too into one problem that you spend 30 minutes on it, but give yourself enough time on a problem before giving up on it).

Study Tips (if you fail the exam the first time)

Cramming doesn't work!

Identify your weaker areas by looking at your question by question scores (can be obtained via meeting after the exam).

To incorporate an idea into long term memory, it usually takes about three weeks worth (20 times or so) of repetition.

So, for each of your targeted areas, schedule a week or two of 2 -4 hours to work on that area and drill on it. You may reserve 5 practice exams for focused study. After reading over notes and searching general items, in an untimed setting, work on questions from these exams on the area upon which you want to focus. Go over the answers and see what you did well and what you need to adjust. Keep in mind there is more than 1 way to solve problems when doing this review. Also, for coding questions, you can actually code up solutions and test them. This is the best way to learn for coding questions.

As you are doing your focused review, sprinkle in some timed practice exams. This forces you to recall information from all domains of the class near the same time and switch from category to category. Again, review the answers and ask yourself how well you did on the questions as well as with time management. Reflect upon what, if anything you would want to do differently. Reserve up to 5 exams for this sort of diffuse practice.