How Things Are Supposed to Work

Here I'll explain how the lecture, exercises, etc. will be run and why, alongside the grading. You may have heard a lot of this already before, but I'm positive that sticking to it is indeed a good idea.[1]

Lecture

In the lecture, I will focus on presenting the key definitions, algorithmic ideas, and sketch the proofs. I'm slow in writing on a board, in particular since you will have to constantly remind to write sufficiently large and legible (seriously, keep telling me!). Unless this is important for your personal style of learning, there's no need to take notes, as the presented material is covered in full in the script.

Script

After each lecture, the accompanying part of the script will magically appear on the lecture's webpage. The material serves several purposes:

- Repetition of the lecture's content, to commit it to memory and/or see where you missed a pointed that needs clarification.
- Proofs are given in detail, pseudocode is spelled out, etc.; here you see how it's done *precisely*, not just conceptually – you'll see that the devil *is* in the detail.
- Additional remarks putting the material into a wider context. Most likely many of them will not be made in the lecture to avoid the distraction, while on the second pass they provide a glimpse at the bigger picture.

I recommend to plan for at least two hours of time of studying the script for a lecture.[2] It may go faster if you already got everything, but it's better to be surprised positively. If you spend this effort, I expect the exercises to be straightforward.[3]

Exercise Sheets

Here comes maybe the first surprise. I *want* you to work together. In one way or the other, communicating complex ideas is one of the essential skills in most jobs where computer scientists are found. More precisely, here's what I would like you to do:

1. Take some time to think about how the exercises are to be solved on your own. Figure out the key ideas and have a fair idea of how to implement them.[4]

[1] Of course, you should never trust someone who rants as much and/or uses a stylistically unadvisable number of footnotes as I do, but that means you'll have to try to be certain that I'm wrong!

[2] That's much less than it takes for me to prepare it. So you will read it and you will LIKE IT, AM I CLEAR?!?

[3] I know they're easy, I figured out the answers before I had even read them! Just to be sure, we checked how Cosmina handled them, though.

[4] If you don't get a solution for everything in the end, that's fine. But don't give up easily! During my studies, staring seemingly without result on exercise sheets for hours was the key to at least get the solution in the TA sessions. Apparently, the brain still works, even if all other internal and external indicators say otherwise. There's even science saying this!

2. Team up in groups of 3 or 4. Discuss your approaches, pin down issues they may have, and try to determine what works best. Don't fall into the trap of letting the strong students take this job away from you! Likewise, if that's you, make sure that the others also practice to put their thoughts into words.

3. Produce a joint write-up of your group's solutions. Try to present it *well*. This is not just about correctness, it's also about making it easy for the reader to understand!

4. Be ready to present your solution in the TA session (see below).

There are plenty of different ways of doing this (meeting physically, discussing one-on-one, emails,...), and we won't enforce this procedure or even group sizes. However, it's not only a way of learning something really important, it will also improve your scores and greatly simplify your life in the TA sessions. Also, take into account that Cosmina can give more careful and detailed feedback if there are fewer hand-ins.

There will be one exercise sheet per week, with two regular exercises and possibly one starred "bonus" exercise each. The ones without stars are "traditional" exercises that you're handing in as detailed above. We'll provide sample solutions to the groups that handed in solutions by email. The scores will amount to 25% of the points towards the grade. You can get bonus points from starred exercises, so in theory you'll be able to get above 100%.[5]

TA Sessions

TA sessions will be biweekly, each session covering two lectures and the corresponding exercise sheets. They will be different, too, in that they'll essentially be run by you. A typical session will go like this:

1. Summaries of the two lectures are presented (about 5 minutes each).

2. Solutions to the standard exercises are presented (about 10 minutes per task on average).

3. Presentations/discussions concerning the starred exercises, as appropriate (also about 10 minutes each).

4. In between, Cosmina will answer questions related to these things, comment and correct where she sees fit, and may add something if she feels like it.

Note that everything except for the last point is done by you! That means that you should prepare for presenting this stuff. Ideally, you'll do this and then ask whether you can present it. However, this should be fairly balanced throughout the semester, i.e., everyone should get their turn at summarizing lectures and presenting solutions to exercise tasks (starred ones are optional, but think of these sweet extra points!). *No one will like it when Cosmina has to pick someone!* Not Cosmina, not the one who's picked, and also not the ones who have to listen to the result. Always keep in mind that your job is to present the important stuff so that your fellow students understand it! Take into account the time limit and determine what you'd like to say in case you can't fit everything into your time slot. Sometimes (not always!) more is less.

Your participation in the TA sessions will contribute another 25% of the points, with everything related to starred exercises yielding bonus points.

[5] If anyone manages this, I pledge to buy chocolate for everyone and offer a job to the culprit.

Final Exam

There's going to be a final exam worth 50% of the points. However, it's going to be nigh impossible to actually get all of these. The exam will be designed to leave plenty of room to shine: each question can be answered for full points individually, but there'll probably not be enough time to finish everything. I'll test it on Cosmina, but don't expect her to complete it for full points within the given time frame either. That's alright,[6] because you *won't need a total of 100% to get the top grade*! The grading will be more flexible and gauged by the overall performance of the class. On the other hand, there will be no such thing as a 50-50 rule – I hope for most of you to pass, and I will set the threshold for passing such that I feel comfortable in claiming that you achieved the main goals of the course. Finally, in my experience (I was a student once, too) it's always the students that do well in the exercises and TA sessions that do well in the exam![7]

Note that the bottomline of this is that the exercises and TA sessions are likely to have a larger impact on your grade than the final exam![8]

[6] Also for me, as it gives me a chance of not having to buy chocolate or offering a job to half of the class.

[7] Yes, I *do* know the difference between correlation and causality, thank you very much. Did you ever consider the remote possibility that the exercises might be meant to prepare you for the exam?

[8] Totally unrelated note: Be nice to Cosmina!