# American University of Armenia, CSE
# CS 121 Data Structures
# Spring 2024

## Advice For Future Generations

Below you can find some feedback and advice given by students that took this course before you.

1. ***What learning habits of yours worked for you in the scope of this course?***

   - "Attending the office hours. Sometimes attending the pss (before exams because the times conflicted with other pss). Leaving the class early if I realized I can't concentrate and instead eating, then going over the slides.".
   - "My attentiveness helped me a lot. I was attentive during the class and that was enough to understand theoretical parts completely, so I didn't need to spend time on that parts at home."
   - "As always, working hard, going to OHs and PSSs and asking questions work."
   - "I think my learning habit was constantly paying attention to what is happening in the classroom, not getting distracted by anything and carefully listening to the instructor."
   - "Worked - Visiting office hours."
   - "I have enhanced my level of responsibility, because homework always required high level attention. The biggest learning habit was never giving up, even if you receive a bad grade or your code doesn't work entirely. Hardly I can find a learning habit that failed for me."
   - "When studying for a quiz or an exam, writing down the code on paper without actually looking at the slides was really helpful in understanding what the program is doing, thus, further helping me understand how each structure worked."
   - "Learning the topics really well before starting coding. Also going to the PSSs and flooding Abik with numerous questions :D"
   - "Reading (beyond) the textbook, starting assignments early, not cheating."
   - "Flooding Abik with questions. Not letting Abik breathe. Abik the best. Abik <3"
   - "Attending lectures and PSS"
   - "My determination to learn helped."
   - "In the past I spent too much time on reading chapters and got exhausted. Once I got to that point, I quitted both studying and practicing coding. Due to the spending so much time on reading the chapters, I used to lose my interest to the topic at all. And I even grew hateful towards online videos which could help me a lot. I was so angry that I even quitted attending the office hours. This time I changed my strategy. I paid attention more to online videos and teacher's office hours and PSS. Sometimes when I wasn't able to attend office hours, I turned to neural nets, chatGpt (my elder bro :D) and sometimes Bard (my younger bro :D). I asked these chats so much questions that when the teacher started explaining the topic, I already had a clue what was going on. This blend encouraged me a lot. I got rid of that disgusting pessimism and set new goals. This time I mostly liked his approach of reviewing slides of code chunks before starting to solve problems."
   - "I think the one which ultimately worked is starting the homeworks early enough. I think for me that was the key, as the homework assignments were designed in such a way, that you're guaranteed to write good exams if you can solve the homeworks on your own. Seems obvious, but noy every course is designed in such optimal way."

- "I was getting familiar with the theory, making sure I understand every concept, and only then I started wring the code."
- "Just read the book and use the AI for practical examples."
- "Consistency helped me very much."
- "Consistency, dedication."
- "worked FLAWLESSLY - email the instructor who will reply you for sure, same goes to asking questions during the class, go to OHs (try to go during her OH's, but she might not dequeue you if you come at other time)."
- "For successful homeworks: first I looked through all the slides necessary for the homework, tried to solve basic problems, e.g. when the scope were sortings, first I tried to implement on my own trivial sortings (on arrays), then switch to more difficult, in-place sortings, the on linked lists etc. It's not efficient to switch to difficult problems immediately, those seem much simpler, when you implement trivial algorithms first. For successful exams: I closed all the slides and source codes and tried to implement all the data structures passed on my own, how I would implement those if I was to write them from zero. I would advise doing so for each data structure. The key point is not remembering by heart everything, key point is understanding how to implement them from zero, how those work, the internal structure." "Reading the main textbook, using online visual tools to understand the concept better, solving pss problems." "Starting to work on homeworks not on the very last day was a good idea. I have learned quite a lot through trial and error, but I think that's what university is all about, isn't it?."
- " I tried visualizing every single data structure to better imagine what it was and to correctly be able to implement the codes as there were a lot of codes to remember which I didn't remember much. Turned out watching Indian youtubers (especially this guy Abdul Bari) helped a lot to understand the course better. The classes were too overwhelming for me, the pace was too fast, and it felt like there was no time to ask questions. And also, figuring out my own learning pace and style for myself turned out to work really well for me as well."
- "Getting the idea of the topic after looking it up on youtube, then reading slides. Also sketching the data structures and recursive functions."

2. ***What learning habits of yours failed in the scope of this course?***

- "I was lazy. If I read more books and did coding I am more than sure that I would pass this course better."
- "Not believing in your victory and not seeing you as a winner do not work and make you a loser."
- "Failed - Writing homework in five hours."
- "When I had stuff to get done, I always used to say ok it's 8:20 let me wait until 8:30, and then let me wait until 9 and so on, and eventually it was too late to study, so "Don't wait till the next hour do it now.""
- "My procrastination was a huge burden."
- "Skipping classes, started homeworks late."
- "Cutting classes and then cramming."
- "Being lazy."
- "Being late for most of the classes didn't work out the way it was intended to."

3. ***If you had the opportunity to start this course from the beginning, would you change the way you have studied? If yes, how?***

   - "Yes I will, at first I payed more attention on theoretical part and forgot about the coding itself. So at the end of the course I had problems with coding, because I could solve the exercises theoretically, but couldn't write the appropriate code."
   - "Attend the PSS more."
   - "I would participate more."
   - "I think yes, I would pay more attention to my homeworks."
   - "I would start doing the homeworks sooner (but probably not)."
   - "Yes, I would've done more reading, and would've start doing my homework earlier."
   - "I don't think so, because instructor and TA always where there for me and they always were showing me the best approach for homework/Midterms."
   - "I would spend more time doing practice problems. There's no way around sustained effort and deliberate, methodical practice."
   - "I would do my homeworks earlier. I would dedicate some time to read the book and the problems in the book."
   - "I would've read the slides more carefully before starting each assignment! :p"
   - "Yes, i would start the homeworks earlier."
   - "Yes. I would listen during the lectures"
   - "I would start homework earlier."
   - "I would ask more questions."
   - "Would attend OH more often."
   - "Perhaps, I would start practice coding more intensively and review my OOP knowledge a few months before taking this course. Then during the course I would attend office hours more often and maybe concentrate mainly on lecture slides, online videos and chat bots."
   - "I would not change the way I study, but I would just increase the amount of time I spent on doing what I did cause sometimes I was procrastinating."
   - "Yes, I would attend to pss sessions, dedicate more time to Homeworks, avoid using chatgpt for hws (or at least try to sneak it), attend to classes."
   - "I would try to stay ahead of schedule regarding the course content, and not fall behind it. Would have done the homeworks earlier."
   - "I would manage my time better to attend more ohs."
   - "Yes, I would've attended more OH sessions."
   - "Yes listen to classes more."
   - "I'd work harder."
   - "Yes, I would spend more time on practicing.))"
   - "idk but would like to take it again, tho I cant cuz my grade isn't low enough."
   - "Yes. I am bad at theoretical part mostly. I would try to understand and learn the theoretical part more deeply. Also, I would try not to be late to or skip classes. One class skipped => three more classes understanding almost nothing from the topics discussed."
   - "As this course did not affect my gpa anyhow, it was a bridge course with passed/not passed grade, I didn't try too hard to get a higher grade, did not start the homework a week before the deadline (always completed on last days), did not get prepared for the exams, I just did what was interesting: implementations on my own and even in other languages. May be that was not too efficient for the grade, but it was interesting and efficient learning overall."

- "I would like to solve more problems."
- "I would always come to classes on time, that's for sure T.T"
- "I would focus on understanding and visualizing better."
- "I would change the amount of time and effort put into this course, and I would triple it."

4. ***What advice would you give to your past self and the future students who will take this course?***

   - "Don't think that this course is evil, actually it is not as hard as everyone thinks. If you don't skip classes, do homework, read the book and attend PSS/OH everything will be smooth and reachable. Time to time you will think that you will fail this course anyways, but you shouldn't give up. Your hard work will pay off."
   - "Do the goddamn homeworks."
   - "It's an easy course, you just need to spare some time and participate more. Everything will be cool."
   - "Practice more by doing additional exercises from books."
   - "Write code by hand."
   - "Start doing your homework at least a week before the deadline, or at least open and read the problems :D"
   - "Chasing motivation won't lead to success (or excellence). It's really hard to get motivated about something you don't think is relevant to your goals or if it feels like a chore. It's important to regularly reflect on the personal significance of what you're doing. It's also important to set realistic goals. Make a routine that you can stick to with relatively little effort, e.g., one problem a day. If you feel overwhelmed, you'll keep procrastinating. Good habits like these are a great way to master (or survive, if mastery isn't your goal) DSA."
   - "Be organized and try to learn each topic after the lesson. Try to solve as many problems as possible. In this course if you know the theory very well, coding party will be much easier for you so try to concentrate on theoretical part as well. Believe in yourself!! Try to find someone who can motivate you during hard times of the course and vice versa."
   - "Take seriously all assignments, because as a working student, I can say that they depict tasks that employees are given in the Industry (write reports detailed, pay attention to the all minorities that make your code work better). Also, don't hesitate to ask questions."
   - "Paying attention in class, attending the PSS's, studying consistently and asking questions, are the main factors to pay attention to if your goal is to gain or improve your knowledge about the topics of this course."
   - "Please attend the pss and office hours and don't think that you can do a 2-week homework in a day cause you can't."
   - "Try to not miss the lectures, even though you are sure that you know the topic, believe me, you don't."
   - "Do the homeworks, read the book and ask more questions."
   - "Learn everything in time."
   - "Don't fall behind."
   - "Study."
   - "I would apply for this Master's Program a year later and during that year solve as many coding problems without Stackoverflow, GeeksForGeeks and other online sources help. I had a bad habit of copying the codes from those platforms and paste them in my job tasks. And that was crucial in deceiving myself as if I was already a quality coder."
   - "Start doing the homework as soon as possible. Work constantly, don't let the information collect for the last days."

- “There is no need to be afraid of this course just because others told you so.”
- “Be sure you’re working smart and not just justifying your laziness.”
- “Attend OH and PSS sessions, be attentive during lectures.”
- “Study. Attend to classes. Don’t rely on Indian youtubers.”
- “Don’t skip classes and start doing homeworks early.”
- “Attend All PSSes especially when it’s Apig.”
- “DO MORE, don’t fall behind.”
- “Study more.”
- “Manage your time so that you can both study theory part and practice coding.”
- “Use memes, it is highly appreciated by the Supreme Power.”
- “Do NOT be late to classes. Do NOT skip classes. If you skip, keep up with the topics to not fall behind, it would be much harder understanding staff on your own.”
- “I would advice future students to try to implement everything from zero on their own(all the data structures interfaces, abstract classes, concrete implementations), to understand why the things are written as they are, what works efficiently and what doesn’t, to understand the internal structure and functionality. It’s a huge help for understanding and also for the exams, I successfully passed the exams due to that, as I didn’t get prepared for the exams anyhow.”
- “Rear more then once the same topic. Each time I read the familiar topic I found always something new in it.”
- “It would be hard to keep up with things, once they pile up. Respectively, I would advise the same to the future students :D ”
- “Understand the data structures then read/write code.”
- “Doing the readings is important. Even if you understand the topic, doing the reading gives a deeper perspective. In the ”Data Structures and Algorithms” book, there are exercises after each topic, and doing them is a great way to train your mind and practice coding. Doing these exercises will also make the exams easier for you. Additionally, LeetCode is a great place for practicing coding.”