CS1450 – Data Structures and Algorithms – Additional Instruction Pamphlet

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Guru Information:

My name is Daniel Lemmond and I am a current post-baccalaureate sophomore here at UCCS. I've been writing code and perusing the field of computer science since I was roughly 11, when I started with HTML and CSS. The past six months of my life have been consumed by data structures and algorithms study in preparation for internship interviews starting this fall. I currently work in the Vision and Security Technology (VAST) Lab here on campus, where I do machine learning and deep learning research underneath Dr. Boult.

Resources:

As supplemental material to the book recommended in the CS1450 syllabus, I would like to offer three additional resources as a starting point for your data structures and algorithms adventures.

The first is **Algorithms, 4th Edition, by Sedgewick**. Sedgewick is a professor at Princeton University who studied underneath Donald Knuth, one of the fathers of modern day computer science. He's known for being an exceptionally intelligent individual, and I hope his book serves you as well as it has served me, should you decide to purchase it. The book will prove priceless throughout the entirety of your computer science degree, so I highly recommend keeping it after this semester.

Link: http://a.co/d3GA2uY. ISBN: 978-0321573513

The second is **Introduction to Algorithms, 3rd Edition, by Cormen, Leiserson, Rivest, and Stein - commonly abbreviated as CLRS.** Please be aware that if you are planning to purchase this book that it is both *very dense* and *math intensive.* CLRS is the book that the Massachusetts' Institute of Technology uses for the entirety of their algorithmic journey through college, and as can be expected of material from MIT, the book covers very complex subjects in immense depth, and can be easily overwhelming to a new computer science student. Should you decide to purchase this book, it will be invaluable for years to come. While there is no better resource for data structures and algorithms on the planet, **this book is not for the faint of heart.**

Link: http://a.co/ghUVzEE. ISBN: 978-0262033848

The third and final resource I will recommend is **GeeksForGeeks**, a data structures and algorithms website. GeeksForGeeks contains an immense amount of knowledge covering a vast array of subjects, and while there is great power here, there is also crushing responsibility. Many of the resources on this website will provide the exact code necessary to complete the homework in this class. While this may seem like a boon, should you simply copy and paste this material, you will be left woefully unprepared and drowning in the material contained within the courses following this one. Proceed wisely. **Plagiarism is strictly prohibited by UCCS and its Code of Conduct.**

Link: www.geeksforgeeks.org

Planned Meeting Times:
As I'm sure many of you can understand, I'm currently studying a full course load, working during the week at the lab, and preparing for internship interviews. Because of this, my time is limited, and I am trying to find times which can accommodate as many people as possible.

The current plan is to teach on **Fridays from 5:15 until you're tired of hearing me talk**. We'll meet in front of Engineering and commandeer an appropriately sized room based upon the number of students that show up. These sessions will be very informal, and I won't be assigning homework (for obvious reasons). They will be drop-in/drop-out, meaning that you are free to come in at any time after 5:15 and free to leave at any point. Should you have to leave for a prior commitment, or you simply feel like you've mastered the material, that is perfectly fine.

Disclaimers and Caveats:

- I am not responsible for your grades or your homework.
- I cannot guarantee that these sessions will improve your understanding of the material.
- I talk at a very high rate of speed. You may want to bring something to record with.
- Complaints about our current instructor should be brought to the chair of the department, not me. I have done all I can.
- Unlike the concept of a syllabus, this document is subject to change at any time. Material that we cover may vary as needs demand.
- Sessions are subject to change or cancellation at any point. **This is not my desired outcome**. However, should my homework or study demand attention, it has priority.

Discord Server:
The last service that I think will prove valuable is an invite to a Discord server. For those unaware of what Discord is, it's essentially a chat and voice service provider marketed towards gamers. I currently serve as a Helper/Pro on a large (8000+ person) Discord geared towards teaching programming to beginners. This server, while filled with people with extensive knowledge, is not meant to spoon feed you answers or solutions. **If you choose to join this server, you are subject to the rules of the server and the server's strict moderation. Please be respectful to mods and helpers alike – they are both volunteer roles for people who choose to take them on.**

Link: https://discord.gg/9zT7NHP

Very Loose Discussion Plans:

Friday, September 29th, 2017	**Exam 1 Review** – Linked Lists and Stacks
Friday, October 6th, 2017	**No Session – Guru Travelling**
Friday, October 13th, 2017	Syllabus covers a *lot* of complicated topics. Dynamic programming, recursion, and greedy algorithms are not in the scope of this class.
Friday, October 20th, 2017	Sorting – we can do this.
Friday, October 27th, 2017	PriorityQueue – we can do this.

Friday, November 3rd, 2017	Greedy algorithms and dynamic programming – this is really advanced. I'm covering this material in my senior capstone class. Not in the scope.
Friday, November 10th, 2017	**Exam 2 Review -** ?
Friday, November 17th, 2017	Homework stuff, miscellaneous questions.
Friday, November 24th, 2017	**No Session – TURKEY DAY**
Friday, December 1st, 2017	**Final Prep** – Homework and Miscellaneous
Friday, December 8th, 2017	**Final Prep** – Homework and Miscellaneous