

SiMpliFied EduCatiON

DATA STRUCTURES USING C/C++

Course Guide

Data structure is a particular way of storing and organizing information in a computer so that it can be retrieved and used most productively.

And we will be doing just that :)

But for this you must have some basic knowledge of any programming language preferably C/C++ as we will be studying D.S using C or C++ . my personal opinion will be using C++ .But since CS undergraduate students have to study this course using C . So I will be using C eventhough I will give some idea of C++ too. And to understand that I would suggest to learn some basic syntax of C++ .there are lot of videos and text tutorials available just go through them .

Now , for learning Data Structures you must have understanding of following :

- **Data types**
- **Conditional and control Statement**
- **detailed knowledge of printf () and scanf ()**
- **Functions and recursion**
- **Arrays and Structures**
- **Dynamic memory allocation and pointers**
- **Algorithm development skills**
- **Basic Maths**

you must have atleast an idea of all of these and Don't worry, we will be covering some of the essential topics in our course too.

I will give you a short test that will test your understanding of the programming language and problem solving skills

Test will contain Output/Find errors based questions and typical programming questions .

Before jumping into course contents ,these are the books and resources I would suggest you to follow :

- **onlinecourses.nptel.ac.in**

great website for Free lecture videos by IIT ,plus is ! you also get a certificate from them !!

- **mycodeschool channel on youtube**

you can search and follow various good channels on youtube .in free time or whenever you are bored just watch some videos

- **Data Structures and Algorithms made easy by Narsimha Karumanchi Careermonk publications**

Very good book I would recommend it as a course book .Finish it thoroughly

- **Interviewbit.com**

good website for interview related questions

- **Algorithms by CLRS**

Do not IGNORE this book, try to finish it and solve all exercises . Standard book for understanding algorithms .

- **Data Structures and Algorithms using C++ by Mark Allen Weiss**

for learning DS using C++ it uses STL, vectors and all latest development in C++ .

- **GATE previous papers**

without solving good quality questions studying DS is = nothing . And what's better than GATE papers ?? It will also help you If planning to go for M.tech . Even if Not I recommend solving papers .

- **Hacker's Delight by Henry Warren**

Good for Maths and other related operations .Not a hacking book :p

- **Codechef.com**

Competitive programming : Good Questions, Editorials are also good

- **topcoder.com and codeforces.com**

You may study some topics from these sites . Champions live here :)

- **hackerearth.com**

same as codechef but with better editorials and notes. Also helpful in getting Job interviews

- **Spoj.com**

Repository of programming questions

- **Cracking the coding Interview by G.Laakmann**

Good book .Give it a try

Apart from these ,

I will be giving you notes ,Questions and all other important stuff .

Here's a link to my Drive that contains Data Structures related contents

[https://drive.google.com/folderview?](https://drive.google.com/folderview?id=0B9DryvRG0KjLThKTERHVVHNCRWs&usp=sharing)

[id=0B9DryvRG0KjLThKTERHVVHNCRWs&usp=sharing](https://drive.google.com/folderview?id=0B9DryvRG0KjLThKTERHVVHNCRWs&usp=sharing)

You will get this link via WhatsApp too . I will be creating WhatsApp group where I will share all important Questions ,notes and news of concern.

You can also ask questions that would be definitely solved (Sometimes might take time)

I would recommend creating an account on **ideone.com** here you can compile and run your code online and thus have access to them anywhere .Also it will help in sharing your codes with me.

Note : I will not be coding each and every topic of DS in class as it will stretch the course for long rather I will give you codes of all topics .You have to study them and ask doubts .