

Algorithms and Data Structure 01

- ✓ Semester #01
- ✓ Grads 06
- ✓ Coefficient 4
- ✓ First Year, Degree in Automatic and Computer Science

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- **Content**
- **Aims and Objectives**
- **Requirements**

Aims and Objectives

- ✓ As you can see, the title of the course is composed by two main parts:
- ✓ **Algorithms:** design, analyze and write a step by step way to solve a problem by a computer
- ✓ **Data Structure:** describe and model the way the data should be saved, manipulated, transferred in the computer.
 - ✓ An introductory basic knowledge in Algorithms and Data Structure.
 - ✓ Understanding how computer programs are designed and written
 - ✓ Understanding how data could be stored and retrieve in computers.
 - ✓ Gaining the ability to write simple algorithms using conditional instructions, loops and nested loops.
 - ✓ Ability to use the simple data structure such as Arrays and Strings.
 - ✓ Ability to use the personalized data types.

What is required

- Minimum knowledge about computers.
- Able to use text editor, simple command such as copying files on Windows or Linux, or any Operating System.
- Minimum knowledge of mathematics, logic, electronics.

Content

- **Chapter #01 Introduction**

- Historical fact about algorithms and computing
- What is Algorithm, and its properties

- **Chapter #02 Simple Sequential Algorithms**

- Algorithmic language
- Main component of an Algorithms
- Data type, Variables and Constant
- Basic operations
 - Assignment, Input and Output Instructions
- Writing basic algorithm
- Implementing Algorithm in computer programming languages

Content

- **Chapter #3 Conditional Instructions**
 - Conditional instruction (simple and combined)
 - Conditional instruction with multi-choices
- **Chapter #4 Loops**
 - Loops
 - While loop
 - Repeat Loop
 - For loop
 - Nested loops

Content

- **Chapter 5 Array and Strings**
 - Store retrieve and access data in Array
 - 2Dimensions array (Matrix)
 - Strings and textual data.
- **Chapter 6 Personalized Data type**
 - Enumeration
 - Record
 - More Data personalized types.

Grads & Teaching

- 2 courses per Week (online)
- 1 Tutorial per week
- 1 practical tutorial per week (onsite)
- 50 % Final Exam
- 50 % continuous control
 - **Assignments**
 - **Homework**

Tools

- **Course official website**

- <https://elearning-facsci.univ-annaba.dz/enrol/index.php?id=1812>

- **Google Class Room**

password : q5kljnu

<https://classroom.google.com/c/Njl1NTM5ODUyODM1?cjc=q5kljnu>



- Install it on your phone
- Also you could use it from the browser (Web)

- **Google Meet**



- Install it and check your Mic and Sound settings.
- Also could be used from web.

- **Programming environment :**

- From a Web browser : <https://www.onlinegdb.com/>
- From a mobile application <https://shorturl.at/dyQV1>

From PC : Visual Studio Code <https://code.visualstudio.com/> , DevCpp