

Sistemas Informáticos (Computer Systems)

# Unit 02. Study guide

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Consejería d'Educació,  
Investigació, Cultura i Esport

I.E.S. SERRA PERENXISA



Fons Social Europeu

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Authors: Sergi García

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## UNIT 02. INFORMATION REPRESENTATION

### 1. DATES

From 25/09/2023 to 08/10/2023. The length of the unit is 2 weeks (16 hours).

### 2. PREVIOUS KNOWLEDGE

- How to perform basic mathematical operations.
- How to convert between two general units.

### 3. OBJECTIVES

- To learn how the computer systems manage information.
- To learn how to convert from decimal to binary, octal and hex.
- To learn how to convert from binary, decimal, octal and hex.
- To learn how to convert between octal and hex.
- To learn how to perform basic mathematical operations in binary code: addition, subtraction, multiplication.
  - The division is not in the scope of the objectives.
- To learn how to perform logical operations.
- To learn how to represent negative numbers in binary code.
- To learn how to represent real numbers in binary code.
- To know how to represent alphabetic characters in binary code.
- To know the information units.
- To learn how to change information units.
- To learn how to install Python 3 and set an environment to work with him.
- To learn how to use basic commands to print and read information in Python.

### 4. CONTENTS

- Numeral systems
- Binary code
- Operations with binary numbers
- Negative numbers
- Real numbers
- Boolean algebra
- Octal
- Hexadecimal
- Alphanumeric Representation
- Numeric and alphanumeric data
- Internal representation
- Unit system
- Python 3 installation.
- Python environment.
- Print and read information in Python.

### 5. ACTIVITIES

It is very important to read the notes and perform the exercises. These exercises (both unit 2 exercises and Python exercises) are not part of the assessment, but note that it is very common to have several questions from this unit in the exam.

## 6. RECOMMENDATIONS

It is very important to go to the TC with the main concepts studied.