

**COMPUTER SCIENCE (INFORMÁTICA)**  
**Grado en Ingeniería Electrónica y Automática Industrial**

**Program (2024-2025)**

**1. Introduction to Computers**

Basic definitions. Functional structure. Von Neumann machine. Machine and assembly languages. Compilers. Programs  
Historical evolution.

**2. Representation of Information.**

Representation of numbers. Binary codification. Integers: sign, 1-C, 2-C, biased representations. Reals: floating point, IEEE-  
754. Alphanumeric information.

**4. The C Programming Language.**

- Introduction to the C programming language. Characteristics and elements. Sample program.
- Data types.
- Input and output.
- Operators and expressions.
- Control flow.
- Functions.
- Vectors and strings.
- Pointers.
- Structures. Unions. Bit-fields. 'typedef'.
- File input and output.
- Dynamic memory.
- The C-language preprocessor.

The program and contents of the laboratory class are published in the associated web page.

**Instructor**

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**Web page**

<http://atc2.aut.uah.es/~nacho/infEng/cs.html>

### Class hours

- Classroom: Tuesdays, 12-14h, room EA1B.
- Lab: Thursdays, 12-14, lab EL7

### Bibliography

#### Basic

- Brian W. Kernighan, Dennis M. Ritchie. The C Programming Language. 2nd Edition. Prentice-Hall Software series, 1988.

#### Complementary

- Pearson Certification Team. Computer Structure and Logic. Pearson.
- David A. Patterson, John L. Hennessy. Computer Organization and Design. 4th Edition. Elsevier, 2009.

### Tentative schedule

This schedule is **tentative** and may be modified during the semester. Updates shall be posted in the web page.

<b>Week</b>	<b>Classroom</b>	<b>Lab</b>
2024-37 (1)	Presentation, Unit 1	
2024-38 (2)	Unit 1 and Unit 2	Assignment 1
2024-39 (3)	Unit 2 and Unit 4.1	Assignments 2 and 3
2024-40 (4)	Unit 4.2 ( <b>first quiz</b> )	Assignment 4, section 1
2024-41 (5)	Unit 4.3	Assignment 4, section 1
2024-42 (6)	Unit 4.4	Assignment 4, section 1
2024-43 (7)	Unit 4.5	Assignment 4, section 2
2024-44 (8)	Unit 4.6	<b>1st partial exam</b>
2024-45 (9)	Unit 4.7	Assignment 4, section 2
2024-46 (10)	Unit 4.8	Assignment 4, section 2
2024-47 (11)	Unit 4.9	Assignment 4, section 3
2024-48 (12)	Unit 4.10	Assignment 4, section 3
2024-49 (13)	Unit 4.11	Assignment 4, section 3
2024-50 (14)	Unit 4.12	<b>2nd partial exam</b>
2024-51 (15)	Questions/requests from students	<b>2nd partial exam</b>

### Final exams

Dates will be published by the School.

## **Grading**

The course follows the standard '*continuous evaluation*' procedure, with the following exams:

- Classroom:
  - First quiz: units 1-2 (15% of the final grade)
  - Second quiz (final exam): unit 4 (35% of the final grade)
- Lab work:
  - Exam: assignment 4, section 1 (10% of the final grade)
  - Exam: assignment 4, sections 1-4 (40% of the final grade)

In accordance with current regulations, (students are advised to contact the *Secretaría de Alumnos* to this respect), students may apply for the non-standard '*single exam*' evaluation procedure. Should this application be accepted, the grading will result from a single exam consisting of three parts, very similar in nature and percentages to those described above under the '*continuous evaluation*' procedure: one quiz for units 1-2, one exam for unit 4, and one last part for the lab work.