

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

Program (2023-2024)

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,
IEEE754. 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.

Week	Classroom	Lab
2021-37 (1)	Presentation, Unit 1	
2021-38 (2)	Unit 1 and Unit 2	Assignment 1
2021-39 (3)	Unit 2 and Unit 4.1	Assignments 2 and 3
2021-40 (4)	Unit 4.2	Assignment 4 (sect. 1)
2021-41 (5)	Unit 4.3	Assignment 4 (sect. 1)
2021-42 (6)	Unit 4.4 (first quiz)	Assignment 4 (sect. 1)
2021-43 (7)	Unit 4.5	Assignment 4 (sect. 2)
2021-44 (8)	Unit 4.6	1st partial exam
2021-45 (9)	Unit 4.7	Assignment 4, section 2
2021-46 (10)	Unit 4.8	Assignment 4, section 2
2021-47 (11)	Unit 4.9	Assignment 4, section 2
2021-48 (12)	Unit 4.10	Assignment 4, section 3
2021-49 (13)	Unit 4.11	Assignment 4, section 3
2021-50 (14)	Unit 4.12	Assignment 4, section 3
2022-51 (15)	Questions/requests from students	2nd partial exam

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.