SUBJECT TEACHING GUIDE

G266 - Introduction to Software

First Degree in Computer Systems Engineering

Academic year 2026 - 2027

1. IDENTIFYING DATA					
Degree	First Degree in Computer Systems Engineering			Type and Year	Core. Year 1
Faculty	Faculty of Sciences				
Discipline	Subject Area: Fundamentals of Computer Science Basic Training Module				
Course unit title and code	G266 - Introduction to Software				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Knowledge Field	Computer and systems engineering				
Web	http://www.istr.unican.es/asignaturas/intro_sw/				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERÍA INFORMÁTICA Y ELECTRÓNICA
Name of lecturer	HECTOR PEREZ TIJERO
E-mail	hector.perez@unican.es
Office	Facultad de Ciencias. Planta: + 3. DESPACHO DE PROFESORES (3053)
Other lecturers	ALFONSO DE LA VEGA RUIZ RICARDO DINTEN HERRERO MARIO MARTIN PEREZ

4. OBJECTIVES
To achieve the learning outcomes

6. SUBJECT PROGRAM	
CONTENTS	
1	THEMATIC UNIT 1: Imperative programming
1	Introduction to the course
1	Introduction to programming languages. High-level languages. The compilation process. The software life cycle. Concept of algorithm. Program structure.

1	Fundamentals of programming in C. Program structure in C. Input / output of text and characters. Input / output of numbers. Functions.
1	Data and expressions. Primitive types. Variables and constants. Operators and expressions. Type conversion. Parameter passing. Using mathematical functions.
1	Algorithmic structures. Conditional instruction. Multiway branch statement. Loop statements. Recursion. Describing algorithms with pseudocode.
1	Composite data. Arrays and tables. Iteration and search algorithms. Multidimensional arrays. Enumerations. Structs.
1	Modular programming. Modular design. Scope of variables. Libraries.
1	Dynamic data structures. Definition. Pointers and memory assignment. Pointers and functions. Pointers and structs.
2	THEMATIC UNIT 2: Tools
2	Using operating systems. Basic concepts. Common operating systems. The filesystem. The shell. Running programs. The graphical file manager. Using the USB memory. Scripts.
2	Using an integrated software development environment. Program development process. Compiling and executing. Integrated development environment. Debugging. Document generation.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessment	%
Student participation and tests	Others	No	Yes	15,00
Presentation of solutions to short exercises solved at home	Activity evaluation with Virtual Media	No	Yes	10,00
Written exam with questions and short exercises.	Written exam	Yes	Yes	30,00
Assessment of lab assignments and reports.	Laboratory evaluation	No	Yes	15,00
Lab exam: notes and books are allowed during the final lab exam, but not electronic media such as laptops, tablets and mobile phones.	Laboratory evaluation	Yes	Yes	30,00
TOTAL				100,00

Observations

The course can be passed through two different options:

(1) continuous assessment of assignments, in which final exams represents the 60% of the mark.
(2) assessment of final exams which represents the 100% of the mark.

By default, students are assigned to the first option.

To pass the course is necessary to score a minimum mark in the final exams. Should one of these parts not be passed with the minimum mark, the final mark will be the minimum of 4.9 and the average obtained.

Observations for part-time students

Part-time students could choose option (1) or (2) to pass the course.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

C programming : absolute beginner's guide / Greg Perry and Dean Miller. 3ª edición. 2014.
Paul Deitel, Harvey Deitel. "C: How to program". 9ª Ed. Pearson Educación, 2022.