

**COURSE DATA****DATA SUBJECT****Code:** 34805**Name:** Informatics I**Cycle:** Undergraduate Studies**ECTS Credits:** 6**Academic year:** 2026-27**STUDY (S)**

Degree	Center	Acad. year	Period
1402 - Degree in Telecommunications Electronic Engineering	Escola Tècnica Superior d'Enginyeria	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1402 - Degree in Telecommunications Electronic Engineering	Information technology	BASIC

COORDINATION

MARTINEZ PLUME JAVIER

SUMMARY

The course "Informàtica" is a core course of the first year of the Telecommunication Electronics Engineering Degree. The course workload is 6 ECTS and it is given in the first four-month period of the first year.

This course tries to teach some basic computer concepts like, its basic components, potential uses and limitations.

Students will understand and management some basic concepts related to operating systems as well as the description and use the network as a key part in communicating information between computers.

They also will learn a basic knowledge of different tools, as well as a brief introduction to the concept of database.



One main objective of the course is to get a deeper knowledge of the design of algorithms using a deeper knowledge of the design of algorithms using

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

No prerequisites are established

COMPETENCES / LEARNING OUTCOMES

1402 - Degree in Telecommunications Electronic Engineering

B2 - Basic knowledge of the use and programming of computers, operating systems, databases and computer software with applications to computer engineering.

G3 - Acquisition of the knowledge of the basic and technological subjects that allows students to learn new methods and theories and endows them with the versatility to adapt to new situations.

G4 - Ability to solve problems with initiative, decision-making and creativity, and to communicate and transmit knowledge, abilities and skills, understanding the ethical and professional responsibility of the activity of a telecommunications technical engineer.

DESCRIPTION OF CONTENTS

1. introduction

The computer concept: Basic concepts. Computer Internal structure.
Software: Operating system. Utilities. Information management.

2. Computer networks.

Introduction and Basics.
Utilities to share information.



3. Programming in high level languages.

Algorithm concept.
Languages and programming paradigms.
Characteristics of high-level programming languages: Variables and constants. Simple Data Types.
Program development phases: Analysis of the problem. Algorithm design. Programming.

4. Structured programming.

Structured programming Theorem.
Design of structured programs.
Flow control structures: Sequential structure. Conditional structure. Iterative structure.

5. Modular programming.

Module definition
Modular programming.
Subprogram definition: Functions.
Subprogram parameters.
Identifiers scope.
Recusivity.

6. Structured Data Types

Vectors, matrices, strings and records

7. Files and DataBase

The file concept.
Access types.
Logical and physical files.
Binary and text files.
Processing files.
DataBase.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	30,00
Laboratory	20,00



Classroom practices	10,00
Total hours	60,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	15,00
Preparation of lessons	35,00
Preparation for assessment activities	20,00
Resolution of case studies	10,00
Total hours	90,00

TEACHING METHODOLOGY

Theoretical activities.

Description: The lectures will present the course contents providing a global vision, a detailed analysis of the key concepts and encouraging the student participation. The workload of this section for the students is 20% of the total of the course.

Practical activities.

Description: The practical activities complement the theoretical classes and allow the students to put into practice the contents and improve the understanding of the course concepts. They include the following types of classroom activities:

- Solving problems in class.
- Regular discussion of exercises and problems that the students have previously tried to work out.
- Laboratory sessions.
- Support tutorial sessions (individualized or in group).
- Individual evaluation of questionnaires to be done in class with the help of professors.

The workload of this section for the students is 20% of the total of the course.

Personal work.



Description: It is the work that the student must carry out individually out of the classroom timetable. It tries to promote the autonomous work habit. Activities in this group are: monographs, guided literature search, exercises and problems as well as preparation of classes and exams. The workload of this section for the students is 45% of the total of the course.

Teamwork in small groups.

Description: It will be carried out by small groups of students (2-4). It consists of work to be done out of the class timetable in form of exercises and problems. This work tries to improve the teamwork and leadership skills. The workload of this section for the student is 15% of the total charge of the course.

During the course the e-learning (pizarra virtual) platform of the University of Valencia will be used to support the teaching activities. This platform allows the access to the course materials used in the classes as well as additional documents, solved problems and exercises.

EVALUATION

The breakdown of the course assessment is the following:

(C) Continuous assessment. It is based on participation and the degree of involvement in the teaching-learning process. In this section it will be taken into account the attendance to classroom activities and the resolution of exercises and problems. The weight of this part will be 20% of the final mark.

(I) Individual examination. Consisting of several exams, they will include both theoretical and practical questions and problems. There will be some midterm exams distributed during the period of classes and a final exam out of this period that is fixed in the official exam calendar. This part of the assessment will represent the 50% of the final mark and the weight of each individual exam is as follows:

$$I = 50\%(\text{average of midterm exams}) + 50\%(\text{final exam})$$

The weight of all of the midterm exams will be the same.

(P) Laboratory activities assessment. The marks of this part will take into account the achievement of objectives in the laboratory sessions. These activities will be carried out individually and/or in-group and its weight is 30% of the final mark.

The final mark of the course will be calculated as follows:

$$M = 0.2 * C + 0.5 * I + 0.3 * P$$



A minimum mark of 3,5 out of 10 for each part is required to obtain a final average mark (M), which must be equal or higher than 5 out of 10 to pass the course. At least 75% attendance is required. The student will fail the course if some mark is below 3,5 or the average is lower than 5.

Alternate assessment: aimed at students study part-time or who can not attend class

$$M = 0,1 \cdot C + 0,7 \cdot I + 0,2 \cdot P$$

The second exams session for this course will be based on a single final exam.

In any case, the evaluation system will be governed by what is established in the Evaluation and Qualification Regulations of the University of Valencia for Degrees and Masters.

(<https://webges.uv.es/uvTaeWeb/MuestraInformacionEdictoPublicoFrontAction.do?accion=inicio&idEdictoSeleccionado=5639>).

REFERENCES

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- [H. Korth, A. Silberschatz (2006)] Fundamentos de bases de datos (MacGraw Hill)
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- [L. Joyanes, I. Zahonero (2001)]. Programación en C: Metodología, algoritmos y estructuras de datos (MacGraw Hill).
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