

Degree	Type	Year
2500895 Electronic Engineering for Telecommunication	FB	1
2500898 Telecommunication Systems Engineering	FB	1

Contact

Name: Joan Oliver Malagelada

Email: joan.oliver@uab.cat

Teachers

Vanessa Moreno Font

Sergi Carreras Sala

Marc Vallribera Ros

Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

There is not.

Objectives and Contextualisation

The subject corresponds to a basic subject of introduction to the foundations of computers and to the programming in the degrees of telecommunications. It is taught in the first semester.

The basic training objectives of the subject are:

- Introduce the student in the general concepts of the computer
- Learn the basic architecture of a generic processor and work with the basics of its low level operation.
- Learn programming methodology and apply it to the creation of programs in a high level language.

In this sense, the subject introduces the student into the concepts of the hardware of the computer. Also the subject introduces the students into the C programming.

Competences

Electronic Engineering for Telecommunication

- Develop personal work habits.
- Develop thinking habits.
- Learn new methods and technologies, building on basic technological knowledge, to be able to adapt to new situations.
- Work in a team.

Telecommunication Systems Engineering

- Develop personal work habits.
- Develop thinking habits.
- Learn new methods and technologies, building on basic technological knowledge, to be able to adapt to new situations.
- Work in a team.

Learning Outcomes

1. Critically evaluate the work done.
2. Define the architecture of computers and servers and use operating systems.
3. Define the architecture of computers and servers, and use of operating systems.
4. Describe, on a basic level, the use and programming of computers, operating systems, databases and computer programs that have applications in engineering.
5. Describe, on a basic level, the use and programming of computers, operating systems, databases and computer programs with engineering applications.
6. Design and implement databases in the development of software applications and, specifically, applied to information systems.
7. Develop independent learning strategies.
8. Develop scientific thinking.
9. Develop the capacity for analysis and synthesis.
10. Identify the functional units of a computer.
11. Use basic programming theory and language programming to develop software systems.
12. Use the basic theories of programming and programming languages to develop software systems.
13. Work autonomously.
14. Work cooperatively.

Content

A. PROGRAMMING FOUNDATIONS

1. Computer engineering and computing
2. Representation of information in the computer
3. Algorithms design
4. Introduction to C
5. Control structures
6. Functions and procedures
7. Vectors (arrays: lists and tables)
8. Structures (registers)
9. Files

B. COMPUTER BASICS

10. Introduction to digital components
11. Introduction to computer architecture
12. Machine language and assembler
13. Operating systems. Files and databases.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes	33	1.32	4, 6, 8, 9, 10, 12
Type: Supervised			
Class problems and laboratory classes	32	1.28	14
Type: Autonomous			
Autonomous work	150	6	1, 7, 13

Master classes:

Basic knowledge of the subject is given in class and indications of how to improve these contents.

Class problems:

The scientific and technical knowledge exposed in the master classes is worked on. Problems are solved and case studies are discussed. With the problems, the ability to analyze and synthesise, the critical reasoning is promoted, and the student is trained in solving problems.

The methodology followed in problems is the following: issues of problems are given, which students must solve. In class a review of the doubts that have arisen are commented and resolved.

Eventually, in some problem sessions, problems are collected and corrected.

Practices:

During the course there will be 6 practices of 3 hours. Students will work in groups of 2.

The student will develop own thinking habits of the subject. The student will be introduced in the programming language.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Practical classes	25	4	0.16	1, 7, 13, 14
Supervised	10	2	0.08	8, 9, 14
Theory	65	4	0.16	2, 3, 4, 5, 6, 10, 11, 12

1. Evidence of continuous evaluation. There are two tests that include the three blocks of matter (A, B and C of the section contained)

Evidence of continuous evaluation	Weight note continuous assessment	Minimum mark to make an average
A. Programming foundations	50%	3.5
B. Computer basics	50%	3.5

2. Activities involved in the final evaluation note

Final note	Weight final mark (%)
Continued evaluation	65-75
Class marks	10-0
Practices	25

3. It is considered approved when,

- The final grade of the course is equal to or greater than 5 i
- The laboratory practices have been approved (grade equal to or greater than 5) i
- There is no block (A, B) of the continuous assessment subject below the minimum grade (3.5) to make the average.

4. The practices are approved by continuous evaluation, and the grade is a function of the preparation of the practice, the execution of the practice and the final report. Practices can not be recovered.

5. Class tests can not be retaken.

6. There will be a final exam of the two theory blocks aimed to retake the failed part of the continuous evaluation.

7. At the beginning of the academic year, it will be notified if there is convalidation of lab practices. If there is, the convalidation will only be carried out for those students who request it and have approved the practices in the previous year.

8. Continuous evaluation dates are set at the beginning of the course and do not have alternative retaken date in case of non-attendance.

9. Any change in the schedule will be reported on the virtual campus.

10. Notwithstanding other disciplinary measures deemed appropriate, and in accordance with the current academic regulations, irregularities committed by a student that can lead to a variation of the qualification will be classified by zero (0). For example, plagiarizing, copying, copying, ..., an evaluation activity, will imply suspending this evaluation activity with zero (0). Assessment activities qualified in this way and by this procedure will not be recoverable. If it is necessary to pass any of these assessment activities to pass the subject, this subject will be suspended directly, without opportunity to recover it in the same course.

Bibliography

The bibliography that will be used in the subject will be:

Class books:

- J. Oliver. Introducció als Fonaments de computadors amb EduP12. Editat per CVC. 2012. http://www.cannic.uab.cat/livre/EduP12_v1.pdf.
- A. Prieto, A. B. Prieto. Conceptos de informática. Edit Mc Graw Hill.2005.
- J. Antonakos, K. Mansfield. Programación estructurada en C. Edit Prentice Hall. 2000.
- G. J. Bronson. C++ para Ingeniería y Ciencias. Edit. International Thomson Editores. 2000.

Complementary Books:

- E. Quero. Programación en lenguaje C: ejercicios y problemas. Edit Paraninfo. 1998.
- J. Oliver, C. Ferrer. Disseny de sistemes digitals. Servei de Publicacions de la UAB. 1990.

Web pages:

- <https://cv.uab.cat/>. Website of the Virtual Campus of the UAB. It will serve as the base page for interaction with the subject and the notes and statements of problems and practices will be posted.
- <http://www.cannic.uab.es/docencia/fi/fi.htm>. Web page in which there is information about the subject of the subject.
- <http://www.cannic.uab.es/docencia/fp/fp.htm>. Website where you can find notes and programming problems in C.

Software

For programming with C the PellesC development environment is used: from <http://www.smorgasbordet.com/pellec>

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	311	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	312	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	331	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	332	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	311	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	312	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	313	Catalan/Spanish	first semester	morning-mixed
(PLAB) Practical laboratories	314	Catalan	first semester	morning-mixed
(PLAB) Practical laboratories	315	Catalan	first semester	afternoon
(PLAB) Practical laboratories	316	Catalan	first semester	afternoon
(PLAB) Practical laboratories	317	Catalan	first semester	afternoon
(PLAB) Practical laboratories	318	Catalan	first semester	afternoon
(TE) Theory	31	Catalan	first semester	morning-mixed
(TE) Theory	33	Catalan	first semester	morning-mixed

PROVISIONAL