

## 28903 - Computer science

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 28903 - Computer science

**Faculty / School:** 201 - Escuela Politécnica Superior

**Degree:** 437 - Degree in Rural and Agri-Food Engineering  
583 - Degree in Rural and Agri-Food Engineering

**ECTS:** 6.0

**Year:** 1

**Semester:** First semester

**Subject Type:** Basic Education

**Module:** ---

## 1.General information

### 1.1.Aims of the course

- The student must be able to analyze problems
- The student must be able to solve problems using a computer
- The student must be able to use computers efficiently

### 1.2.Context and importance of this course in the degree

This subject belongs to basic knowledge for any engineer.

Computer skills will be required to study other subjects in the career.

### 1.3.Recommendations to take this course

No previous knowledge is necessary.

The study of the initial theoretical concepts must be studied.

The class exercises must be solved by you.

## 2.Learning goals

### 2.1.Competences

- Use of new information technologies.
- Have basic knowledge about Computer Science
- Teamwork.

### 2.2.Learning goals

- Understand the theoretical knowledge
- Know how to use information technology effectively as a standard tool in their work
- Have the capacity to analyze a problem and design an algorithm for its resolution
- Know how to codify the algorithms using a high level programming language

### 2.3.Importance of learning goals

Any engineer must work with computers, and an efficient use of them is needed.

In addition, they will learn how to analyze complex problems in order to solve them with a computer

## 3.Assessment (1st and 2nd call)

### **3.1.Assessment tasks (description of tasks, marking system and assessment criteria)**

The subject's evaluation will be global, with two annual tests

The evaluation will consist of three parts:

1. Exam; 65% of the final grade.
2. Partial work or exam: 10%
3. Final work: 25%.

## **4.Methodology, learning tasks, syllabus and resources**

### **4.1.Methodological overview**

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as: lectures, solving-problems sessions and practice sessions.

Students are expected to participate actively in the class throughout the semester.

Further information regarding the course will be provided on the first day of class.

### **4.2.Learning tasks**

The course includes the following learning tasks:

- Lectures: 20 hours
- Solving-problems sessions: 10 hours
- Practice sessions: 30 hours

### **4.3.Syllabus**

The course will address the following topics:

Theory

1. Introduction to Computers
  - 1.1. Hardware
  - 1.2. Software
2. Algorithmic
  - 2.1. Introduction
  - 2.2. Scalar types
  - 2.3. Assignment sentence
  - 2.4. Alternative sentence
  - 2.5. Repetitive sentence
  - 2.6. Sequences
  - 2.7. Subprograms
  - 2.8. Arrays
  - 2.9. Records

Practice Sessions

1. Introduction
2. Spreadsheets
3. Programming

### **4.4.Course planning and calendar**

Weekly hours:

- Theory and problems: 2h
- Computer Classroom practices: 2h

At the end, of course, a practice must be submitted.

There will be an exam at the end of course

### **4.5.Bibliography and recommended resources**

- BC** Biondi, Joëlle. Introducción a la programación. T. 1, Algorítmica y lenguajes / Joëlle Biondi, Gilles Clavel ; versión castellana de Josep Vilaplana Pastó . 2ª ed. Barcelona : Masson, 1988
- BC** Clavel, Gilles. Introducción a la programación. T. 2, Estructuras de datos / Gilles Clavel, Joëlle Biondi ; versión castellana de Nuria Castell Ariño . - [1a. ed.] Barcelona : Masson, 1985
- BC** Dale, Nell. Pascal / Nell Dale, Chip Weems . 2a. ed. Madrid [etc.] : McGraw-Hill, D.L.1994
- BC** Desarrollo de algoritmos y técnicas de programación en Pascal / Cristobal Pareja Flores...[et al.] . - [1a. ed.] Madrid : RA-MA, 1997
- BC** Joyanes Aguilar, Luis. Fundamentos de programación : Libro de problemas / Luis Joyanes Aguilar, Luis Rodríguez Baena, Matilde Fernández Azuela . 2ª ed. Madrid [etc.] : McGraw-Hill, D.L. 2003
- BC** Joyanes Aguilar, Luis. Pascal y Turbo Pascal : un enfoque práctico / Luis Joyanes Aguilar, Ignacio Zahonero Martínez, Angel Hermoso López . [1a. ed. en español, reimpr.] Madrid [etc.] : McGraw-Hill, D.L.1997
- BC** Salmon, William I.. Introducción a la computación con Turbo Pascal (5.0/5.5/ 6.0/TPW) : estructuras y abstracciones / William I. Salmon ; versión en español de Roberto Escalona Garcà-a . Wilmington, Delaware : Addison-Wesley Iberoamericana, cop.1993

#### **LISTADO DE URLs:**

Curso de Pascal - [<http://www.aprendeaprogramar.com/course/view.php?id=7>]

The updated recommended bibliography can be consulted in:  
<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=28903&Identificador=12467>