

28903 - Computer science

Información del Plan Docente

Academic Year	2016/17
Academic center	201 - Escuela Politécnica Superior
Degree	437 - Degree in Rural and Agri-Food Engineering
ECTS	6.0
Course	1
Period	Half-yearly
Subject Type	Basic Education
Module	---

1.Basic info

1.1.Recommendations to take this course

No previous knowledge is necessary.

The study of de initial theoretical concepts must be studied.

The class exercises must be solved by you.

1.2.Activities and key dates for the course

At the end of course a practice must be submitted.

There will be an exam at the end of course

2.Initiation

2.1.Learning outcomes that define the subject

- 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

2.2.Introduction

Computer Science is a fundamental tool in any engineering environment. The course introduces basic concepts about computer.

The course focuses on developing the student's abilities to analyze problems, and to design an algorithm that solves them

3.Context and competences

3.1.Goals

- 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

3.2.Context and meaning of the subject in the degree

This subject belongs to basic knowledge for any engineer.

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

3.3.Competences

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

3.4.Importance of learning outcomes

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

4.Evaluation

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 : 10%
3. Final work : 25%.

5.Activities and resources

5.1.General methodological presentation

Initial theoretical subjects that the student must study.

Most of the course the classes will be based in problem resolution

5.2.Learning activities

- Lectures: 20 hours
- Problems: 10 hours
- Practical classes: 30 hours

5.3.Program

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

Practices

1. Introduction

2. Spreadsheets

3. Programming

5.4.Planning and scheduling

Weekly hours :

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

5.5.Bibliography and recommended resources

Complementary bibliography

- Desarrollo de algoritmos y técnicas de programación en Pascal / Cristobal Pareja Flores...[et al.] . - [1a. ed.] Madrid : RA-MA, 1997
- 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 García . Wilmington, Delaware : Addison-Wesley Iberoamericana, cop.1993
- 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
- Dale, Nell. Pascal / Nell Dale, Chip Weems . 2a. ed. Madrid [etc.] : McGraw-Hill, D.L.1994
- Joyanes Aguilar, Luis. Fundamentos de programación : Libro de problemas / Luis Joyanes Aguilar, Luis Rodriguez Baena, Matilde Fernández Azuela . 2ª ed. Madrid [etc.] : McGraw-Hill, D.L. 2003
- 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
- Groff, James R.. Aplique SQL / James R. Groff, Paul N. Weinberg ; traductor, Alfredo Bautista Paloma ; revisor técnico, Antonio Vaquero Sánchez . Madrid [etc.] : Osborne-McGraw-Hill, cop. 1991
- 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