28807 - Computer Science

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The learning process designed for this subject is based on the folowing:

The subject is strongly based on practice, so it has many practical work in classes.

The organization of teaching will be carried out using the following steps:

- **Theory Classes**: Theoretical activities carried out mainly through exposition by the teacher, where the theoretical supports of the subject are displayed, highlighting the fundamental, structuring them in topics and or sections, interrelating them.
- **Practical Classes**: The teacher resolves practical problems or cases for demonstrative purposes. This type of teaching complements the theory shown in the lectures with practical aspects.

- **Laboratory Workshop**: The lecture group is divided up into various groups, according to the number of registered students, but never with more than 20 students, in order to make up smaller sized groups.
- **Individual Tutorials**: Those carried out giving individual, personalized attention with a teacher from the department. Said tutorials may be in person or online.

4.2.Learning tasks

The programme offered to the student to help them achieve their target results is made up of the following activities..

Face-to-face generic activites:

- **Theory Classes:** The theoretical concepts of the subject are explained and illustrative examples are developed as support to the theory when necessary.
- **Practical Classes:** Problemas and practical classes are carried out, complementary to the theoretical concepts studied.
- **Laboratory Workshop:** This work is tutored by a teacher, in groups of no more than 20 students.

Generic non-class activities

- Study and understanding of the theory taught in the lectures.
- Understanding and assimilation of the problems and practical casses solved in the practical classes.
- Solving proposed problems, project, etc.
- Preparation of laboratory workshops, preparation of summaries and reports.
- Preparation of the writen tests for continuous assessment and final exams.

4.3.Syllabus

Specialization in business

1-Theoretical contents

Part I

- Computer: Machine that executes algorithms. Algorithm definition. Computer architecture: digital nature, codification, hardware, software.
- Operating systems.
- Data bases
- Programming: programming styles, language hierarchy, programming elements
- Nets of computers.

Part I

- Introduction
- Function design
- Text and input/output
- Conditional branching
- Introduction to classes and objects
- Lists
- Iteration

Part III

- Other collecions: sets, tuples, dictionaries
- Designing algorithms
- Search and sorting
- Files

Part IV

- Classes, objects and methods

2-Practical contents

Every part has related practices. As the concepts are showed, the practices are going to be presented, in classroom or in moodle platform.

4.4.Course planning and calendar

The subject has 6 ECTS credits, which represents 150 hours of student work in the subject during the trimester, in other words, 10 hours per week for 15 weeks of class.

A summary of a weekly timetable guide can be seen in the following table.

- 1 hours of lectures
- 3 hour of laboratory workshops
- 6 hours of other activities

Nevertheless the previous table can be shown into greater detail, taking into account the following overall distribution:

- 16 hours of lectures.
- 42 hours of laboratoy workshop.
- 2 hours of wirtten assessment tests, one hour per test.
- 45 hours of exercices and tutelated work, divided up the 15 weeks of the second semester.
- 45 hours of personal study, divided up the 15 weeks of the second semester.

There is a tutorial calendar timetable set by the teacher taht can be requested by the students who want a tutorial.

4.5.Bibliography and recommended resources