30204 - Programming I

Información del Plan Docente

Academic Year	2018/19
Subject	30204 - Programming I
Faculty / School	110 - Escuela de Ingeniería y Arquitectura 326 - Escuela Universitaria Politécnica de Teruel
Degree	443 - Bachelor's Degree in Informatics Engineering 439 - Bachelor's Degree in Informatics Engineering
ECTS	6.0
Year	1
Semester	First semester
Subject Type	Basic Education
Module	

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 following:

- The continued work from the first day of class.
- Learning concepts and methodologies for program design through lectures, in which student participation will be encouraged.
- The application of such knowledge on program design in the classes devoted to problem solving. In these classes, students will play an active role in the discussion of cases and solving problems. In these classes, students' work could be evaluated.

- Classes of laboratory, where students learn the necessary technology needed for coding, compiling and running their programs, using a certain programming language. Students will also learn to work in a certain operating system and developing environment.
- Part of the students work in programming could be developed in teams.
- Learning to program requires continuous work by students in the understanding of concepts, problem analysis, problem solving using "pencil and paper" and coding, running and testing a number of programs.

This course is only taught in Spanish.

4.2.Learning tasks

- In the classroom, the syllabus of the course will be developed through lectures, case analysis and problem solving, where concepts and techniques presented in the syllabus will be applied.
- The practice sessions take place in a computer lab. Throughout the different sessions, each student must do, individually or in teams, work directly related to the topics studied in the course.
- In addition, a programming project under the supervision of a teacher will be developped.

4.3.Syllabus

1. Basic concepts in programming
   - Information processing problems, algorithms and programs
   - Programming languages and program execution
   - Information, data, operations and expressions
2. Design of the first programs
   - Design of some elementary programs
   - Simple and structured instructions
   - Computational problems with integer numbers
   - Top-down and modular program design
   - Computational problems with real numbers
3. Design of programs that work with data structures
1. Indexed data
2. Character strings
3. Aggregated data
4. Basic algorithms working with indexed data
4. Design programs that work with files
1. Data input and output
2. Working with text files
3. Working with binary files
4. Working with files: other possibilities
5. Program design methodology

4.4.Course planning and calendar

The schedule on EINA (Zaragoza) is as follows:

- Lectures: 2 hours per week
- Case problem classes: 1 hour per week
- Laboratory classes: one 2-hour session every two weeks

The schedule on EUPT (Teruel) is as follows:

- Lectures: 2 hours per week
- Case problem and laboratory classes: 2 hours per week

Concrete schedule and dates will be announced in due time by the Faculty Board of the appropriate School, and published on its web site.

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4.5.Bibliography and recommended resources