Universidad Zaragoza

Academic Year/course: 2021/22

39805 - Programming I

Syllabus Information

Academic Year: 2021/22
Subject: 39805 - Programación I
Faculty / School: 326 - Escuela Universitaria Politécnica de Teruel
Degree: 634 -
ECTS: 6.0
Year: 1
Semester: First semester
Subject Type:
Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

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

- Continuous work starting on 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 sessions devoted to problem solving. In these sessions, students will play an active role in the discussion of cases and solving problems. In these sessions, students' work could be evaluated.
- Practice sessions, 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 with 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

The course includes the following learning tasks:

- 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.
- In practice sessions, each student, in front of a computer, will code, run and debug programs work directly related to the topics studied in the course. This work could be individual or be made in teams.

- In addition, a programming project under the supervision of a teacher will be developped.

4.3. Syllabus

The course will address the following topics:

Basic concepts in programming

Information processing problems, algorithms and programs

Programming languages and program execution

Information, data, operations and expressions

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

Design of programs that work with data structures

Indexed data

Character strings

Aggregated data

Basic algorithms working with indexed data

Design programs that work with files

Data input and output

Working with text files

Working with binary files

Working with files: other possibilities

Program design methodology

4.4. Course planning and calendar

The schedule is as follows:

- Lectures: 2 hours per week
- Case problem and practice sessions: 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.

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30204&Identificador=12490