30007 - Fundamentals of computer studies

Syllabus Information

Academic Year: 2019/20
Subject: 30007 - Fundamentals of computer studies
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 436 - Bachelor's Degree in Industrial Engineering Technology
ECTS: 6.0
Year: 1
Semester: 436-First semester o Second semester
107-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 designed learning process is based on:

1. Classic blackboard teaching.
2. Problem-solving.
3. Self-studying.
4. Practical work, developing theoretical concepts.
5. The development of proposed programs of increasing difficulty.

The course has a twofold orientation including theory and practice. Therefore the learning process involves multiple activities ranging from assistance to classical blackboard teaching classes to practical lab work to student self-studying.

4.2.Learning tasks

This course's learning process involves the following activities:

- Classical blackboard classes: teacher analyzes and explores the course's concepts, illustrating them with examples.

- Problem-solving sessions: students will solve (in paper) problems following the course's concepts, guided by the teacher.
- Laboratory practical work: the student solves several programming problems that have to work in the computer, supervised by their teacher.
- Autonomous work: the student will solve bigger computing problems as described in specific materials provided to the student. The student has the possibility of requesting counseling from their teacher.
- Written exam: evaluation activity with some problems that the student must solve.

4.3.Syllabus

The course will address the following topics:
- 0. Presentation
- 1. Introduction - computer architecture, operating systems, networks, machine language, assembler, compilers, introduction to programming.
- 2. Data types - internal representation, dominion, classification, integer, real, char, boolean.
- 3. Composition structures - sequential, conditional iterative.
- 4. Behavior abstraction - procedures and functions.
- 5. Data abstraction - composed data types, arrays, records, strings.
- 6. Files - sequential, text.

4.4.Course planning and calendar

The course's calendar is defined by EINA in the official calendar for the whole study.
The expected workload is:
- Attending classes: 30 hours.
- Written problem solving: 15 hours.
- Supervised practical sessions: 12 hours.
- Individual practical work: 60 hours.
- Self-studying and problem solving: 30 hours.
- Exams, or other evaluation activities: 3 hours.

The student must be aware of the specific deadlines for each practical activity during the course, as well as exam dates and other evaluation activities.

4.5.Bibliography and recommended resources

Link:
http://biblos.unizar.es/br/br_citas.php?codigo=30007&year=2019