

Academic Year/course: 2021/22

39802 - Introduction to computers

Syllabus Information

Academic Year: 2021/22

Subject: 39802 - Introducción a los computadores

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 that is designed for this course is based on:

Classroom activities

Lectures 30 h

Problem-based learning 15 h

Laboratory sessions 10 h

Practical work 25h (groups of two-three students)

Autonomous activities

Practical work and personal study 70 h

Evaluation activities

Exams 4 h

4.2. Learning tasks

The course includes the following learning tasks:

Lectures: 30 h

Problem-based learning: 15 h

Laboratory sessions: 10 h

Introduction. Simplifying functions

Combinational blocks

Sequential systems

Design of sequential systems

Introduction to Digital Computer (Máquina Sencilla)

Practical work: 25 h

The teacher will supervise the practical work of students divided into groups during 25h.

4.3. Syllabus

The course will address the following topics:

Introduction and mathematical background

Boolean Algebra

Logic gates

Technological constraints

Numerical representation

Representation of natural numbers

Representation of integer numbers

Basic arithmetic operations with integer numbers

Representation of real numbers

Combinational systems

Analysis

Design

Combinational blocks

Sequential systems

Analysis

Design

Memory elements

Critical path and cycle time

Sequential blocks

Introduction to digital computer: Máquina Sencilla

Structure and operation

Instruction set architecture

Processing unit

Control unit

4.4. Course planning and calendar

Classroom session scheduling

15 weeks

- Lectures and problem-based learning: 3 h / week
- Laboratory sessions 2 h / 2 weeks
- Practical work (see calendar)

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30200&Identificador=12486>