30200 - Introduction to computers

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura 326 - Escuela Universitaria Politécnica de Teruel
Degree	439 - Bachelor's Degree in Informatics Engineering 443 - Bachelor's Degree in Informatics Engineering
ECTS	6.0
Course	1
Period	First semester
Subject Type	Basic Education
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation
The learning process that is designed for this course is based on:

Escuela de Ingeniería y Arquitectura de Zaragoza:

Classroom activities

Lectures 30 h
Problem based learning 15 h
Laboratory sessions 15 h

Autonomous activities
Practical work 8 h
Personal study 72 h
Evaluation activities
Final exam 4 h

Laboratory tests 6 h

Escuela Universitaria Politécnica de Teruel:

Classroom activities
Lectures 30 h
Problem based learning 15 h
Laboratory sessions 10 h

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

Autonomous activities
Practical work and personal study 70 h

Evaluation activities
Exams 4 h

5.2.Learning activities
Lectures: 30 h

Problem based learning: 15 h

Escuela de Ingeniería y Arquitectura del Campus Rio Ebro:

Laboratory sessions: 15 h
Logic design simulator and combinational circuits (1 session)
Representation of information and encapsulated circuits (1 session)
Propagation times of logic gates (1 session)
Combinational components (1 session)

Analisys and design of sequential systems (1 session)
Máquina Sencilla (2 sessions)

Escuela Universitaria Politécnica del Campus de Teruel:

Laboratory sessions: 10 h
Introduction. Simplifying functions

Combinational blocks

Sequential systems

Design of sequential systems

Introduction to Digital Computer (*Máquina Sencilla*)

Escuela de Ingeniería y Arquitectura del Campus Rio Ebro:

Practical work: 8 h

Escuela Universitaria Politécnica del Campus de Teruel:

Practical work: 25 h
Teacher will supervise practical work of students divided into groups during 25h.

5.3.Program

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*
Estructure and operation
Instruction set arquitecture
Processing unit
Control unit

5.4.Planning and scheduling
Classroom session scheduling

Escuela de Ingeniería y Arquitectura del Campus Rio Ebro:

15 weeks

- Lectures and problem based learning: 3 h / week
- Laboratory sessions 2 h / 2 weeks

Escuela Universitaria Politécnica del Campus de Teruel:

15 weeks

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

5.5.Bibliography and recomended resources