30200 - Introduction to computers

Información del Plan Docente

Academic Year	2017/18
Faculty / School	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
Year	1
Semester	First semester
Subject Type	Basic Education
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process that is designed for this course is based on:

Escuela de Ingeniería y Arquitectura de Zaragoza:

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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 tasks
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)

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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.Syllabus

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

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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.Course planning and calendar

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 recommended resources