

30371 - Introduction to computers

Información del Plan Docente

Academic Year	2018/19
Subject	30371 - Introduction to computers
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	581 - Bachelor's Degree in Telecommunications Technology and Services Engineering
ECTS	6.0
Year	1
Semester	Second semester
Subject Type	Compulsory
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

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

4.2.Learning tasks

Lectures: 30 h

Problem based learning: 15 h

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)

Analysis and design of sequential systems (1 session)

Máquina Sencilla (2 sessions)

4.3.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

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

15 weeks

- Lectures and problem based learning: 3 h / week

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- Laboratory sessions 2 h / 2 weeks

4.5. Bibliography and recommended resources