Universidad Zaragoza

Academic Year/course: 2020/21

30371 - Introduction to computers

Syllabus Information

Academic Year: 2020/21
Subject: 30371 - Introduction to computers
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 581 - Bachelor's Degree in Telecomunications 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 methodologies

- M1 (lectures): 30 h
- M4 (problem based learning): 15 h
- M9 (laboratory sessions): 15 h
- M10 (work tutorials): 20 min

Autonomous methodologies

- M13 (work): 04 h
- M15 (laboratory sessions planning): 08 h
- M14 (personal study): 68 h

Evaluation methodologies

- M11 (written exam): 04 h

- M11 (laboratory tests): 06 h

4.2. Learning tasks

Classroom activities

- A01 (lecture): 30 h
- A02 (problem based learning): 15 h
- A03 (laboratory sessions): 15 h
- A06 (office hours for work): 20 minutos

Autonomous activities

- A05 (work): 04 h
- A07 (laboratory sessions planning): 08 h
- A07 (personal study): 68 h

Evaluation activities

- A08 (written exam): 04 h
- A08 (laboratory tests): 06 h

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*
Estructure and operation
Instruction set arquitecture
Processing unit
Control unit

4.4. Course planning and calendar

15 weeks

- Lectures and problem based learning: 3 h / week
- Laboratory sessions: 2 h / 2 weeks
- Autonomous work (supervised): 4h (20 min)

4.5. Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=30371&year=2019