

Academic Year/course: 2021/22

30371 - Introduction to computers

Syllabus Information

Academic Year: 2021/22

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

2. Learning goals

3. Assessment (1st and 2nd call)

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 architecture
 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://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30371>