26957 - Digital Systems

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	447 - Degree in Physics
ECTS	5.0
Course	4
Period	First semester
Subject Type	Optional
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 proposed learning/teaching methodologies for achieving requested goals and acquiring the necessary skills are as follows

- Theory sessions
- Problem solving sesssions
- Lab practices
- End of term project

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5.2.Learning activities

5.3.Program

Topics to be developed during theory sessions:

1.-Boolean algebra and logic functions

2.-Digital circuits: logic gates and typical parameters

3.-Combinational systems: multiplexors, demultiplexors and encoders

4.-Binary arithmetic: signed numbers and basic operations

5.-Sequential systems: architectures and functional description

6.-Registers and counters

7.-Field programmable gate arrays: FPGA

8.-Microcontrollers: design and programming

Lab practices:

1.- Combinational systems: multiplexors and encoders

2.- Binary arithmetic: adders, comparators, ALU's

3.- Sequential systems: bistables, registers and counters

4.- Design of an application system

5.4.Planning and scheduling

Face-to-face sessions and reports delivery

The arrangement of activities, according to credits, is as follows:

Theory+Problem solving sessions: 4 ECTS

Lab Practices: 1 ECTS

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The arrangement of activities will depend on the academic calendar of the year.

Face-to-face sessions

Theory sessions

Lab practices

Reports delivery

End of term project.

5.5.Bibliography and recomended resources