

Centre	University College of Engineering of Vitoria-Gasteiz
Name of subject	25996 – Digital Electronic Systems
Qualification	Degree in Industrial Electronic Engineering and Automatics
Type	Compulsory
Credits	6 ECTS
Year	3
Term(s)	2nd
Department	Electronic Technology
Language	Spanish

Outcomes / Objectives

Study, design and applications of microprocessors

Syllabus

- 8051 architecture:
- Data and code memories
- Interrupts and integrated peripherals
- Assembly programming.
- Asynchronous communications: RS232 and RS485.
- Synchronous communications: I2C and SPI applied to LED drivers or ADCs
- I/O peripheral and external monitors.
- Keyboard reading, LCDs, watchdogs and voltage supervisors.
- PLD, CPLD and FPGA architectures.
- Hardware programming languages: VHDL.
- Modelling, simulation and synthesis.
- Combinational and sequential systems implementation.
- Design and implementation of logic problems using VHDL.

Methodology

Teaching Method

Face-to-Face Teaching Hours

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
45			15					

Student Hours of Non Face-To-Face Activities

Lectures	Seminars	Classroom practice	Lab. practice	Computer sessions	Clinical practice	Workshops	Industrial workshops	Field practice
24			66					

Assessment System

General criteria

Clarification regarding assessment

Compulsory materials

Microcontroller development cards and programmable logic device

Bibliography

Basic Bibliography

- Microcontroladores MCS-51. Angel M^a Aledo Amorós class notes
- Prácticas Básicas con microcontroladores. José Miguel Gil-García notes
- VHDL Lenguaje estándar de diseño electrónico. Teres et. Al. McGraw Hill

In-depth Bibliography

- Microcontroladores MCS-51 y MCS-251. J. Matas y R.R. Ramos. Edicions UPC. 2001
- C and the 8051 Vol.I y II. Thomas W.Schultz
- The designer's guide to VHDL Ashenden, Peter Morgan Kaufmann
- The students guide to VHDL

Websites

- URLs of interest are provided in each 02 chapter
- www.embedded.comwww.8052.com