




COMPUTER_S6 Spring Semester Undergraduate/Junior	Digital systems & Microprocessors	5 credits Lab: 30% Computer exam (2h): 30% Final exam (2h): 40%
This course aims at deepening the notions taught in Computer Engineering in S5 semester by introducing sequential logic in digital circuits and basic elements of a microprocessor. Procedural programming and digital circuits allow the introduction to programming microprocessor-based systems.		
Prerequisite: Digital systems & Computer		

DITN_1522	Digital electronics II	Language 
Lecture: 6	Tutorials: 8	Lab work: 4
This course uses notions taught in the S5 semester and introduces sequencers. Finite state machines are introduced in theory and in implementation using reconfigurable circuits CPLD and FPGA. Memories are discussed from their structures and their use mechanisms.		
<ul style="list-style-type: none"> - Basic finite state machine conception (10 states, 4 inputs) - Finite state machines synthesis using VHDL - Finite state machine synthesis using flip-flop and combinatory elements - Memory mechanism and use 		

DITN_1511	Microprocessors	Language  
Lecture: 6	Tutorials: 6	Lab work: 20
The first objective of this module is to learn about the microprocessor elementary functioning mechanisms and its architecture overview. Data coding and machine number representation are introduced.		
<ul style="list-style-type: none"> - Von Neumann architecture - Inside a microprocessor: ALU, memory, registers, pipeline - RISC model - Instruction coding, assembly language - Links to C programming language - Microcontrollers - Inputs/Outputs 		