

Syllabus

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Titul dl curs	Computer Systems Architecture
Codesc dl curs	76240
Titul suplementar	
SSD	INFO-01/A
Lingaz	Inglese
Curs de laurea	Corso di laurea in Informatica
D'autri cursc de laurea (cursc deberieda)	
Dozenc	prof. Enrico Franconi, franconi@inf.unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/943
Assistent didatich	
Semester	Primo semestre
Ann/Agn de stude	1
Credic universitar	6
Ores de insegnament	40
Ores de laboratore	20
Ores de stude individual	90
Ores de riceviment prevedudes	18
Ressumè di contegnus	• Computer abstractions and technology • Bits, datatypes, and arithmetic in computer systems • Gates, circuits, and combinational logic • Sequential logic • A simple processor architecture: the CPU • Instruction sets and assembly language
Argomenc dl curs	This course belongs to the type "Attività formative di base" and the subject area is "Informatica".

	The goal of this course is to give students an understanding of the architecture and organization of modern computers, the basic of the circuit logic involved in their construction, and the foundation of their programming in assembly language.
Paroles clef	Computer Architecture, Digital Logic, Assembly Language, Processor Design, Data Representation
Prerequisic aconsiés	There are no prerequisites for this course.
Cursc propedeutics	
Modalité de enseignament	The course includes frontal lectures and lab sessions.
Oblianza de frecuencia	Attendance is not mandatory but strongly recommended.
Obietifs formatifs y competenzes da arjonje	Knowledge and Understanding - D1.19: Understand the key principles, the structures and the organization of computer systems Applying knowledge and understanding - D2.4: Ability to develop programs to interact with microcontrollers and the operating systems of modern computers. Ability to make judgments - D3.1: Be able to collect and interpret useful data and to judge information systems and their applicability. - D3.2: Be able to work autonomously according to the own level of knowledge and understanding. Communication skills - D4.1: Be able to use one of the three languages English, Italian and German, and be able to use technical terms and communication appropriately. Learning skills - D5.1: Have developed learning capabilities to pursue further studies with a high degree of autonomy. - D5.3: Be able to follow the fast technological evolution and to learn cutting edge IT technologies and innovative aspects of last generation information systems.
Obietifs formatifs y competenzes da arjonje (informazions	

suplementares)	
Sort de ejam	Written exam: a final written exam with exercises, and verification and transfer of knowledge questions; there will be no pure theoretical questions.
Criters de valutazion	The exam questions will be evaluated based on correctness of answers, clarity of answers, ability to summarize, evaluate, and establish relationships between topics, skills in critical thinking, ability to summarize in own words.
Bibliografia obligatora	• Introduction to Computing Systems: From bits & gates to C & beyond. By Yale N. Patt and Sanjay J. Patel. McGraw Hill. • Principles of Computer Hardware. By Alan Clements. Oxford University Press. • The Architecture of Computer Hardware, Systems Software, and Networking - An Information Technology Approach by Irv Englander and Wilson Won. Wiley.
Bibliografia aconsieda	Additional material will be provided during lectures/labs.
Deplù informazions	- Digital Trainer (digital trainer box) - https://github.com/hneemann/Digital (digital circuits simulator) - https://peterhigginson.co.uk/lmc/ (Little Man Computer simulator)
OSS	Istruzione di qualità