

CS-629

Constructive Computer Architecture

Bourgeat Thomas

Cursus	Sem.	Type
Computer and Communication Sciences		Opt.

Language of teaching	English
Credits	4
Session	
Exam	Oral presentation
Workload	120h
Hours	42
Lecture	14
Exercises	28
Number of positions	35

Frequency

Only this year

Remark

The class will involve a significant amount of programming, including inevitably debugging sessions. The essence of the class will be a series of guided labs culminating in a semi-open final project

Summary

Beginning with a basic pipeline processor, student will learn to implement intriguing architectural techniques through a series of labs. The class will emphasize the implementation, debugging, and analysis of various advanced computer architecture techniques.

Content

The objective of the class is to learn various aspects of computer architecture in a hands-on fashion by constructing and deconstructing machines. We will cover the implementation of simplified versions of:

- Vectorization
- Superscalar
- Simultaneous Multithreading
- Multicore and simple cache coherence protocols
- Accelerators

Note

The class will involve a significant amount of programming, including inevitably frustrating debugging sessions. The essence of the class will be a series of guided labs culminating in a semi-open final project.

Resources**Moodle Link**

- <https://go.epfl.ch/CS-629>