EPFL

EE-431	**Advanced VLSI design**

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Cursus	Sem.	Type
Computer engineering minor	E	Opt.
Cyber security minor	E	Obl.
Electrical and Electronical Engineering	MA2, MA4	Obl.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	Written
Workload	120h
Weeks	14
Hours	**4 weekly**
Courses	2 weekly
Exercises	2 weekly
Number of positions	

Summary

In this course, students collect hands-on experience with the design of full-custom digital integrated circuits. The course guides through a design project in which a high-performance adder based on dynamic logic is developed and implemented.

Learning Prerequisites

Required courses

- EE-429: Fundamentals of VLSI
- EE-490(b): Lab in EDA based design (EDA-TP)

Learning Outcomes

By the end of the course, the student must be able to:
- Design complex full custom integrated circuit building blocks
- Optimize the performance of a circuit
- Draw a corresponding layout
- Illustrate its operation in a presentation

Transversal skills

- Set objectives and design an action plan to reach those objectives.
- Assess progress against the plan, and adapt the plan as appropriate.
- Use both general and domain specific IT resources and tools

Teaching methods

- Short presentations, tutorials, guided examples
- Hands-on experience through a guided project