

CS-411

**Digital education**

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Cursus	Sem.	Type
Computer science minor	H	Opt.
Computer science	MA1, MA3	Opt.
Cybersecurity	MA1, MA3	Opt.
Data Science	MA1, MA3	Opt.
Digital Humanities	MA1, MA3	Opt.
Learning Sciences		Opt.
SC master EPFL	MA1, MA3	Opt.

Language of teaching	English
Credits	6
Session	Winter
Semester	Fall
Exam	Written
Workload	180h
Weeks	14
<b>Hours</b>	<b>4 weekly</b>
Lecture	2 weekly
Project	2 weekly
<b>Number of positions</b>	

**Summary**

This course addresses the relationship between specific technological features and the learners' cognitive processes. It also covers the methods and results of empirical studies on this topic: do students actually learn due to technologies?

**Content**

- *Learning theories and learning processes.*
- *Types of learning technologies*
- *Instructional design: methods, patterns and principles.*
- *On-line education.*
- *Effectiveness of learning technologies.*
- *Methods for empirical research.*
- *Computational thinking skills*
- *Maker spaces*

**Keywords**

*learning, pedagogy, teaching, online education, maker spaces*

**Learning Outcomes**

By the end of the course, the student must be able to:

- Describe the learning processes triggered by a technology-based activity
- Explain how a technology feature influences learning processes
- Elaborate a study that measures the learning effects of a digital environment
- Select appropriately a learning technology given the target audience and the expected learning outcomes

**Transversal skills**

- Set objectives and design an action plan to reach those objectives.

**Teaching methods**

The course will combine participatory lectures with a project around learning analytics

**Expected student activities**

The project will include a few milestones to be delivered along the semester.

**Assessment methods**

- Project + exam
- 50 / 50

**Supervision**

Office hours	No
Assistants	Yes
Forum	Yes

**Resources****Moodle Link**

- <https://go.epfl.ch/CS-411>