Module Description, available in: EN

Digitalisation in industry

General Information

Number of ECTS Credits

3

Module code

TSM_DigInd

Valid for academic year

2026-27

Last modification

2022-01-14

Coordinator of the module

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Explanations regarding the language definitions for each location:

- Instruction is given in the language specified for each location and module execution.
- Documentation is available in the language(s) listed for each location and module execution. If the documentation is in multiple languages, the percentage distributed is indicated (100% = all documentation provided).
- The examination, including both questions and answers, is provided entirely (100%) in the language(s) specified for each location and module execution. The exams are on-site.

	Lausanne			Lugano	Zurich		
Instruction					**X** E 100%		
Documentation					**X** E 100%		
Examination					**X** E 100%		

Module Category

TSM Technical scientific module

Profile Recommendations

This module is recommended for the following profiles:

	Zurich
Profile	ME

Lessons

2 lecture periods and 1 tutorial period per week

Entry level competences

Prerequisites, previous knowledge

None.

Brief course description of module objectives and content

This modules enables the students to contribute to digital transformaion in the industry. They learn about the fundamental concepts,technical and organisational requirements for digital transformation. They will be able to ask the right questions in a conceptual discussion.

This module offers an overview of digitization in industry from several perspectives.

Aims, content, methods

Learning objectives and competencies to be acquired

- The students obtain an overview of the processes, data structures and information flows based on different product strategies inside a company.
- They are qualified to evaluate different approaches to organize a company regarding the product strategy, product architecture, the production processes and the deployed IT solutions. Relying on this, they are able to identify and apply optimization strategies.
- They are familiar with state-of-the-art concepts of digitization in order to classify efficiency and transparency in production processes (industry 4.0).
- They are familiar with the basic concepts of digitized products, incl. the Internet of Things, and how these are linked to the processes and data streams of the original company in order to increase the range of product related services or business models.
- They can rationally decide between "digital" and "non-digital" solution concepts.

Module content with weighting of different components

Content

The module is structured in three focus areas:

1. Digital Product Development
2. Digitalization in Production
3. Product Service Systems

You will learn the concepts/theory and its industrial application for each focus area. A group project throughout the semester will help you to integrate and apply your knowledge.

Teaching and learning methods

This module will be taught in a flipped classroom setup. Students meet in content groups to elaborate the theory and later meet in project groups, where they introduce the theory to their peers. The process will be closely supervised by the lecturers during on-site/online meetings.

There are 3 fixed on-site appointments (presence required), the other meetings can be arranged according to your/the groups preferences.

Literature

Assessment

Additional performance assessment during the semester

The module contains additional performance assessment(s) during the semester. The achieved mark of the additional performance assessment(s) applies to both the regular and the resit exam.

Description of additional performance assessment during the semester

1/3 Project work

2/3 Written exam

Basic principle for exams

As a rule, all standard final exams are conducted in written form. For resit exams, lecturers will communicate the exam format (written/oral) together with the exam schedule.

Standard final exam for a module and written resit exam

Kind of exam

Written exam

Duration of exam

120 minutes

Permissible aids

Aids permitted as specified below:

Permissible electronic aids

Open Book,
Devices must be in offline mode.

Other permissible aids

No other aids permitted

Exception: In case of an electronic Moodle exam, adjustments to the permissible aids may occur. Lecturers will announce the final permissible aids prior to the exam session.

Special case: Resit exam as oral exam

Kind of exam

Oral exam

Duration of exam

30 minutes

Permissible aids

No aids permitted