Module Description, available in: EN

Technology Management

General Information

Number of ECTS Credits

3

Module code

CM_TechMgmt

Valid for academic year

2025-26

Last modification

2024-10-18

Coordinator of the module

Michele Kellerhals (HSLU, michele.kellerhals@hslu.ch)

Explanations regarding the language definitions for each location:

- Instruction is given in the language defined below for each location/each time the module is held.
- Documentation is available in the languages defined below. Where documents are in several languages, the percentage distribution is shown (100% = all the documentation).
- The examination is available 100% in the languages shown for each location/each time it is held.

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

Module Category

CM Context module

Profile Recommendations

This module is recommended for the following profiles:

	Zurich
Profile	BE, EIE, Pho

Lessons

2 lecture periods and 1 tutorial period per week

Entry level competences

Prerequisites, previous knowledge

The module is particularly recommended to students subscribed to one of the following specialization areas:

- Business Engineering
- Energy & Environment
- Medical Engineering
- Mechanical Engineering
- Mechatronics & Automation
- Electrical Engineering

- Data Science
- Computer Science
- Phtotonics
- Aviation

Brief course description of module objectives and content

The module describes the practical and theoretical framework of Technology Management, and explains the lifecycle and application of technologies and the related tools and activities used in Technology Management applied to practical case studies.

Aims, content, methods

Learning objectives and competencies to be acquired

1. Students understand the elements and the application areas of Technology Management.
2. Students are familiar with the practical and theoretical framework of Technology Management and understand its importance for innovative operating companies.
3. Students learn how companies select and work with technologies.
4. Students know how to manage technology throughout its lifecycle phases and understand the influence of technology on profitability and risk exposure for companies.
5. Students know how to deal with business stakeholders relevant for Technology Management
6. Students know how to develop a technology roadmap
7. Students are able to contribute to and organize a virtual cross-disciplinary technology management team and to jointly produce a project output

Module content with weighting of different components

Technologies are among the most important strategic and operational assets of product and process driven companies. The module deals with managing technologies to enable companies to achieve competitive advantage and differentiation by sound technological innovation management. The focus of the module is on management of technology throughout its lifecycle, thus complementing topics such as Strategy, Innovation, Solutions, Product and Service Management, covering strategic and operational aspects including technology evaluation, selection, planning, development/provision, implementation, distribution, exploitation. Examples of new push technologies will be considered in the context of case studies of product/service innovations and discussed as group work. The module conveys comprehensive knowledge required for TM, e.g. technology trend analysis, technology scouting and recognition, technology roadmapping, lifecycle management, portfolio management, competitive strategies, protection, IPR- and knowledge management, corporate technology management and technology assessment. Each group will work on a case study of a real company and producing a technology roadmap as the main final semester project deliverable.

The Syllabus spread across the Semester is equally incorporated into the written exam.

Learning goal 7 "Collaboration" is spread across the semester week. Failure to equally collaborate with team members in the summative Team Project (as per MSE regulation), i.e. not reaching the correspnding learning goal 7 will lead automatically to a the entire Semestergrade Grade = 1.0 (33% of the module grade).

Teaching and learning methods

The module is taught by theory inputs, illustrative examples, case studies, discussion of controversal questions and exercises.The concept of flipped classroom is applied where possible. Content is applied in the context of a case-study based project assignment to be developed in a crossdiciplinary virtual team setting. Teams will present content using role-based pitching techniques.

Students will self-select Technology fields from a list to work on nd apply the technology fields to a company business, with the objective of producing a technology roadmap. This will be summarized in a report and documented on aweekly basis using a collaborative online Platform .

Literature

[1] Technology Management; Dilek Cetindamar, Rob Phaal, David Probert; ISBN 9780230233348.

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

The module grade consists of 33% Semestergrade and 67% Module exam. The Semestergrade consists of:

- 50% individual written exam (15min) covering the student`s semester case study (date will be communicated at start of the module)
- 50% grading consisting of a written group case study report (criteria and hand-in date will be communicated at start of the module)

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

Other permissible aids

Use of GenAI is forbidden during electronic exam

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

Aids permitted as specified below:

Permissible electronic aids

Open Book

GenAI is forbidden

Other permissible aids

No other aids permitted