Module Description, available in: EN

Manufacturing Technologies

General Information

Number of ECTS Credits

3

Module code

TSM_ManTech

Valid for academic year

2026-27

Last modification

2024-10-07

Coordinator of the module

Gregor Burkhard (FHNW, gregor.burkhard@fhnw.ch)

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

- Knowledge of the product development process (conception phase, realization phase).
- Knowledge of manufacturing processes and material properties.

Brief course description of module objectives and content

Selected future-oriented manufacturing technologies and procedures with economic aspects of these technologies. Including the improvement of productivity and quality.

Aims, content, methods

Learning objectives and competencies to be acquired

To learn about and to understand modern manufacturing methods and systems used to improve productivity and quality.

Module content with weighting of different components

Polymer processing	
• Special technologies for injection moulding	4 lecture periods
• Trends in Composite processing	6 lecture periods
Reverse Engineering, Additive Manufacturing	2 lecture periods
Lightweight Design (Sandwich Structures, Hybrid Technologies)	2 lecture periods
Cutting process	
• Abrasive tools	3 lecture periods
• Tools and coating: Trends	1 lecture periods
• Multiaxis machining: Trends	1 lecture periods
Sheet metal forming	5 lecture periods
(Design for) **Automated Assembly**	4 lecture periods
TOTAL:	28 lecture periods

Teaching and learning methods

Contact hours during the lectures (2 lesson periods per week)

Literature

Lecturers' scripts, which will contain references to current literature.

Assessment

Additional performance assessment during the semester

The module does not contain an additional performance assessment during the semester

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

No 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