

**Module Description, available in: EN**

## *Manufacturing Technologies*

**General Information****Number of ECTS Credits**

3

**Module code**

TSM\_ManTech

**Valid for academic year**

2020-21

**Last modification**

2019-10-21

**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 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		
<b>Instruction</b>	X E 100%				X E 100%		
<b>Documentation</b>	X E 100%				X E 100%		
<b>Examination</b>	X E 100%				X E 100%		

**Module Category**

TSM Technical scientific module

**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 acquired competencies

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

### Contents of module with emphasis on teaching content

<b>Polymer processing</b>	
• Special technologies for injection moulding	4 lecture periods
• Trends in Composite processing	6 lecture periods
<b>Reverse Engineering, Additive Manufacturing</b>	2 lecture periods
<b>Lightweight Design</b> (Sandwich Structures, Hybrid Technologies)	2 lecture periods
<b>Cutting process</b>	
• Abrasive tools	2 lecture periods
• Tools and coating: Trends	2 lecture periods
• Multiaxis machining: Trends	2 lecture periods
<b>Sheet metal forming</b>	4 lecture periods
<b>Laser machining</b> (cutting and joining)	2 lecture periods
(Design for) <b>Automated Assembly</b>	2 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

### Certification requirements

Module does not use certification requirements

### Basic principle for exams

**As a rule, all the standard final exams for modules and also all resit exams are to be in written form**

### Standard final exam for a module and written resit exam

Kind of exam

written

Duration of exam

120 minutes

Permissible aids

No aids permitted

### Special case: Resit exam as oral exam

Kind of exam

oral

Duration of exam

30 minutes

Permissible aids

No aids permitted