

Manufacturing Technologies

General Information

Number of ECTS Credits

3

Module code

TSM_ManTech

Valid for academic year

2020-2021

Last modification

2019-10-21

Responsible of module

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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.

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

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	2 lecture periods
• Tools and coating: Trends	2 lecture periods
• Multiaxis machining: Trends	2 lecture periods
Sheet metal forming	4 lecture periods
Laser machining (cutting and joining)	2 lecture periods
(Design for) Automated Assembly	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 repetition exams are to be in written form

Standard final exam for a module and written repetition exam

Kind of exam

written

Duration of exam

120 minutes

Permissible aids

No aids permitted

Special case: Repetition exam as oral exam

Kind of exam

oral

Duration of exam

30 minutes

Permissible aids

No aids permitted