

**Module Description**

# Quality Management Systems

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

3

**Abbreviation**

CM\_QualMgmtSyst

**Version**

2016.03.17

**Responsible of module**

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**Language**

	Lausanne	Bern	Zürich	Lugano/Manno
Instruction	<input type="checkbox"/> E <input type="checkbox"/> F	<input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F	<input type="checkbox"/> D <input type="checkbox"/> E	<input checked="" type="checkbox"/> E
Documentation	<input type="checkbox"/> E <input type="checkbox"/> F	<input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F	<input type="checkbox"/> D <input type="checkbox"/> E	<input checked="" type="checkbox"/> E
Examination	<input type="checkbox"/> E <input type="checkbox"/> F	<input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F	<input type="checkbox"/> D <input type="checkbox"/> E	<input checked="" type="checkbox"/> E

**Module category**

- Fundamental theoretical principles
- Technical/scientific specialization module
- Context module

**Lessons**

- 2 lecture periods and 1 tutorial period per week
- 2 lecture periods per week

**Brief course description of module objectives and content**

Companies are always in search for opportunities to continuously improve their operations and enhance their competitive position. The path towards excellence has to be carefully planned and proper tools should be in place. This course is aimed at analyzing the role of a quality management system within this context. Contents range from the analysis of innovative approaches for the management of both process and product quality to the introduction of quantitative techniques supporting the quality management system deployment. Final goal is to provide students with the knowledge needed to introduce a quality system in a company and manage the continuous improvement of operations.

**Aims, content, methods**
**Learning objectives and acquired competencies**

The quality management is dealt with from different perspectives in the course.

Quality is first analyzed from an historical perspective to make participants understand how the concept has evolved over time and allow them to better appreciate the current relevance of quality in a company. The quality management system organization is analyzed based on the framework provided by the regulations in force (ISO 9000).

The course then focuses on the statistical quality control and introduces tools and techniques for the management of quality of products and processes. Attention is paid to manage the quality within the production systems, to improve quality of supplies and to ensure quality of new products and services. Hints on customer satisfaction are introduced as an example of quality of service.

At the end of the course, participants will acquire the competence of:

- Identifying and evaluating the quality aspects of an organization
- Designing a holistic continuous improvement plan of a company
- Mastering the use of statistical tools and techniques for the quality management
- Dealing with the regulations in force (quality system certification, product certification, product responsibility,..)

**Contents of module with emphasis on teaching content**

<b>Introduction to the quality management</b>	<b>Course ID -01</b>
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- Introduction to quality: definitions and historical evolution;
- The regulatory environment (ISO9000)
- Structure of a quality management system
- The cost of (non)quality
- Service quality: customer satisfaction
- Six Sigma philosophy

<b>Statistical quality control: tools and technique</b>	<b>Course ID -02</b>
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- Introduction to statistical process control
- Process control and process capability
- Variables control charts and attribute control charts
- Example of statistical process control software (Minitab)
- Acceptance sampling
- Quality function deployment
- Failure Mode and Effect Analysis technique (FMEA)

**Teaching and learning methods**

Frontal theoretical lessons, case studies and exercises.

**Prerequisites, previous knowledge, entrance competencies**

**Literature**

James R. Evans and William M. Lindsay, The Management and Control of Quality, Edited by Thomson South-Western  
ISO 9000

**Assessment**

**Certification requirements for final examinations (conditions for attestation)**

Positive evaluation in written examination.

**Written module examination**

Duration of exam: 120 minutes

Permissible aids: none