



## Quality and management system

### Quality and management system/Kvalitet och ledningssystem

7.5 credits

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**Ladok Code:** TBE021

**Version:** 2.0

**Established by:** Board of the department - Syllabus Committee 2013-01-25

**Valid from:** Spring 2013

**Education Cycle:** First cycle

**Main Field of Study (Progressive Specialisation):** Industrial Economics (GIN)

**Disciplinary Domain:** Technology

**Prerequisites:** Meets requirements for acceptance to a graduate engineer programme.

**Subject Area:** Industrial Engineering and Management

**Grading Scale:** ECTS-credits

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### Content

ISO 14 000, EMAS and ISO 9000 are dealt with as potential management systems and how these are integrated to form a complete management system. It must be possible to adapt this management system to service and manufacturing companies. A project will be implemented at a company with a view to elucidating the links more clearly. A report on this project must be presented verbally with the direct following evaluation of the oral part with feedback. The concept of quality, history of quality, quality tools and links of quality with the economy will be dealt with.

### Learning Outcomes

This course provides a basic knowledge of quality technology, as well as how a corporate management system may be structured and function with a well thought out quality and environmental system so as to make the company competitive on a global scale.

After completing the course, students must be able:

- To describe the structure of the environmental management systems ISO 14 000 and EMAS and also describe the basic ideas behind sustainable development.
- To describe the structure of the quality management system ISO 9000 and also to be very familiar with the standard ISO9000.
- To describe the automotive industry's quality standard ISO/TS 16949
- To describe the certification procedure
- To describe how Six-sigma work is organised and executed.
- To describe benchmarking and how this is executed.
- To describe the procedure with FMEA and QFD.
- To describe how the seven improvement tools and the seven management tools work.
- To understand and describe the concept of TQM (Total Quality Management).
- To understand and implement how important improvement work is within an organisation; PDCA work must be a known concept.
- To describe the concept of redundancy and be able to calculate the reliability of individual systems.
- How much a lack of quality costs organisations.
- Supplement the theory with capability studies.
- The philosophy of quality and the history behind it.
- Students must familiarise themselves with technical report writing.
- Practise in written and as well as oral presentation technique.
- To be familiar with the concept of reliability.
- To be aware of how statistical process control takes place.
- To be aware of what quality prices exist and how these are structured.

## **Forms of Teaching**

The teaching comprises the following elements:

- lectures
- exercises
- project work

The language of instruction is English.

## **Forms of Examination**

The course will be examined through the following examination elements:

*Several small or one larger in the end of the course*

Learning outcomes:

Credits: 5

Grading scale: ECTS-credits

*Project work*

Learning outcomes:

Credits: 2.5

Grading scale: Fail (U) or Pass (G)

Both kind of examination is assessment criteria, the student choose.

Some students do booth the small and the larger examination.

ECTS- grading scale.

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

## **Literature and Other Teaching Materials**

### **Literature**

Bergman, B: Klefsjö, B: Quality from Customer Needs to Customer Satisfaction.

Standards: ISO 9000:2005, ISO 9001:2008, ISO/TS 16949:2002 and ISO 14001:2004.

## **Student Influence and Evaluation**

The head of department and teacher responsible for the course are responsible for ensuring that students are invited systematically and regularly to put forward their views on the course. The results of the assessments, which will take place verbally and in writing, will form the basis for the structure of the course.

## **Miscellaneous**