



# HM1021 Quality Tools for Continual Improvement 7.5 credits

Kvalitetsverktyg för ständiga förbättringar

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for HM1021 valid from Autumn 2007

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Completed upper secondary education including documented proficiency in Swedish corresponding to Swedish B/Swedish 3 and English corresponding to English A/English 6. For students who received their final school grades after 31 December 2009, there is an additional entry requirement for mathematics as follows: documented proficiency in mathematics corresponding to Mathematics A/Mathematics 1. Knowledge corresponding to the course HM1005 Quality Assurance or equivalent

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

The goal for the study course are that the participant shall be able to independently perform:

- Design of experiments with multi-factor two level plans and orthogonal matrix
- Calculation of capability and control limits for statistical process control
- Customer demands measurements using questionnaires and conjoint analysis and transform these into product design using quality function deployment
- Improvement projects in production using 6sigma tools
- Plan maintenance of machine system using Weibull analysis and Total Production Maintenance

## Course contents

The course encompasses the most common quality tools such as the 7 QC tools, QFD, design of experiments, process analysis, and statistical methods including SPC. Furthermore risk analysis using FMEA, FTA, and block diagram. Also included is how these methods are introduced into the management system. Methods for continual improvements will be covered.

## Course literature

Bergman och Klefsjö: Kvalité, från behov till användning, Studentlitteratur

Langhé, Roland: Kompendium i Underhållsteknik

## Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 3.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

## Other requirements for final grade

Approved group assignments (ÖVN1; 3 cr.).

Approved written examination (TEN1; 4,5 cr.).

The final mark is determined mainly by the written examination but could be affected by the quality of the assignments. Marks A-F.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.