Quality Management and Engineering

Programme course

6 credits

Offensiv kvalitetsutveckling, gk

TMQU03

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial Engineering and Logistics

Date determined
2017-01-25

Main field of study
Industrial Engineering and Management

Course level
First cycle

Advancement level
G2X

Course offered for
- Industrial Engineering and Management, Master's Programme
- Design and Product Development
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Mechanical Engineering, M Sc in Engineering
- Engineering Biology, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Probability and statistics

Intended learning outcomes

The course intends to meet industry's requirements for engineers with knowledge in the quality field. The course will provide a holistic view of the quality field with particular focus on principles, methodologies and techniques for quality management. After the completed course, the student shall be able to;

- collect, assess and analyse process information in order to systematically identify and solve quality related problems within industry and service.
- plan and conduct quality improvement projects concerning statistical quality control, design of experiments, product development and process development
- apply fundamental principles, methodologies and techniques for quality management and with a systems perspective identify situations where these can contribute to industrial development through improvement of products and processes
- critically assess and discuss forms for organising quality improvements and describe principles for how quality management can be implemented in industrial organisations
- evaluate and develop policies, goals and procedures for quality management and describe the structure of a quality management system

Course content

Strategies within TQM, Customer focus, Design of experiments, Statistical process control, Capability, Process management, 7 improvement and 7 management tools, Quality Management Systems with focus on ISO 9001:2008.

Teaching and working methods

In order to encourage active learning with our students, the course is organised around a number of project assignments connected to an industrial example. The teaching consists of lectures, where theoretical perspectives are presented; seminars for discussion of cases; tutorials where the students have the opportunity to apply central methods; and regular supervision to support the projects.

Examination

DAT1	Written examination	2 credits	U, 3, 4, 5
UPG3	Assignments	4 credits	U, 3, 4, 5

The results from the examination are weighed together to form the final grade.

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information
Supplementary courses:
Six Sigma Quality, Statistical Quality Control, Lean production, Customer Focused Product and Service Development

Department
Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent
Björn Oskarsson

Examiner
Bonnie Poksinska

Course website and other links
http://www.iei.liu.se/q/

Education components
Preliminary scheduled hours: 48 h
Recommended self-study hours: 112 h