

## Production Development Towards Total Quality 7.5 credits

Produktionsutveckling mot total kvalitet 7.5 hp

Second cycle

Main field: Mechanical Engineering, Second cycle, has only first-cycle course/s as entry requirements (AIN)

Syllabus is adopted by the Research and Education Board (2024-03-05) and is valid for students admitted for the autumn semester 2024.

### Placement in the Academic System

The course is included in Master's Programme (60 credits) in Mechanical Engineering. The course is given as a single subject course.

### Prerequisites and Conditions of Admission

Degree of Bachelor of Science with a major in Mechanical Engineering. The degree must be equivalent to a Swedish teknologie kandidatexamen and must have been awarded from an internationally recognised university. English 6. Exemption of the requirement in Swedish is granted.

### Course Objectives

The objective of the course is for the student to develop knowledge and understanding of how goods and service producing businesses can be developed towards total quality. In particular, the course participant must demonstrate skills and ability to apply the philosophies, concepts and scientific methods and tools that are applicable within these activities in order to develop a production towards total quality.

After successful completion of the course the student should:

#### Knowledge and understanding

- explain basic concepts and scientific methods and theories with relevance to production development and total quality
- explain how continuous production- and quality improvement can lead to customer satisfaction.

#### Skills and ability

- analyze and handle complex phenomena, questions and situations even with limited information by describing how different quality management principles work in practice with the support of scientific results and how these can be used to increase the efficiency of production
- demonstrate orally and in writing, with the support of scientific results, the improvement potential of organizations with a focus on production

- apply knowledge to initiate and propose organizational changes in groups to achieve total quality

#### Judgement and approach

- apply, analyze and discuss the possibilities and limitations of science, its role in society and people's responsibility for how it is used by questioning, critically examining and assimilating information on both a scientific and practical application level
- apply, analyze and discuss the need for additional knowledge and take responsibility for their knowledge development by questioning, critically reviewing and assimilating information at both a scientific and practical application level.

### Primary Contents

Scientific method, total quality in goods and service-producing operations, Different theories and philosophies for quality management, Customer focus, Leadership and strategic planning, Resources for quality management, Process management, Continuous improvements, Performance measurement, Continuous improvements, organizational and production technology changes towards total quality, the significance of statistics for production technology development. Machine capability studies.

### Teaching Formats

The teaching consists of lectures and supervision in project groups. Teaching is normally conducted in English (mainly with English-language literature).

### Examination

The overall grades of Fail, 3, 4 or 5 will be awarded for the course.

Examination of theory sections takes place through individual assignments and a projects done in groups.

Name of the test		Grading
Assignments	2,5 credits	U/G
Project	5 credits	U/3/4/5

### **Course Evaluation**

If there are special reasons, the examiner may make exceptions from the specified examination format and allow a student to be examined in another way. Special reasons can e.g. be a decision on learning support.

Course evaluation is part of the course. This evaluation should offer guidance in the future development and planning of the course. Course evaluations should be documented and made available to the students.

For elite sports students according to Riktlinjer för kombinationen studier och elitidrott vid Högskolan i Halmstad, DNR: L 2018/177, the examiner has the right to decide on an adapted examination component or let the student complete the examination in an alternative way.

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### **Course Literature and Other Study Resources**

Evans, James R ., Lindsay, William M. *The management and control of Quality*. 5e upplagan.

Compendium of articles, available by BB.

PPT- compendium, available by BB.