

## **Statistical process control and Design of experiments, 7,5 HE credits**

*Statistisk processtyrning och försöksplanering, 7,5 hp*

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Established: 2018-10-29

Established by: Department of Engineering Science

Applies from: V19

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### **Learning outcomes**

- Acquire the ability to identify and formulate problems that can be solved using statistical process control.
- Gain in-depth knowledge of concepts and methods in statistical process control.
- Acquire the ability to apply statistical methods in statistical process control.
- Acquire the ability to apply design of experiments and analyse the effects through regression and residual analysis.

### **Entry requirements**

Degree of Bachelor of Science in mechanical engineering, manufacturing engineering, industrial engineering or equivalent. The Bachelor of Science degree must be comprised of at least 15 credits of mathematics including basic knowledge of analysis, linear algebra and statistics. In addition, verified knowledge of English corresponding to the course English B, English 6 in the Swedish high school or equivalent.

### **The forms of assessment of student performance**

Written exam, the mandatory presence at computer labs for data analysis and design of experiments and oral presentation of the project.

### **Course contents**

- Basic quality management, quality control and quality improvement
- Statistical inference in quality control and quality improvement
- Attribute chart and / or variable data (more or less advanced, more or less within production technology context)
- Capability analysis with confidence interval
- Design of Experiments and process improvements (regression analysis)

### **Other regulations**

Course grading: F/Fx/E/D/C/B/A - Insufficient, Insufficient- more work required before the credit can be awarded, Sufficient, Satisfactory, Good, Very Good, Excellent

Course language: The teaching is conducted in English.

General rules pertaining to examination at University West are available at [www.hv.se](http://www.hv.se).

If the student has a decision/recommendation on special support due to disability, the examiner has the right to examine the student in a customized examination form.

### **Cycle**

Second cycle

### **Progressive specialization**

A1N - second cycle, has only first-cycle course/s as entry requirements