

SYLLABUS

Statistical Process Control and Six Sigma 7.5 credits K7005N

Statistisk processtyrning och sex sigma

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2022-02-11**

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Statistisk processtyrning och sex sigma

Second cycle, K7005N

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Kvalitetsteknik	Industrial Engineering and Management

Entry requirements

Completed courses of at least 120 credits, with at least the grade Pass. This must include the following courses: Quality management, Introduction course (K0001N) 7,5 credits and Mathematical Statistics (S0001M) 7,5 credits, or equivalent knowledge.

Selection

The selection is based on 30-285 credits

Course Aim

After completing the course students should be able to:

- demonstrate the ability to use quality technology thinking to identify and formulate problems that can be solved using statistical process control.
- describe Six Sigma, its history, and how Six Sigma can be used in organizational improvement work.
- apply Six Sigma's problem solving methodology.
- demonstrate in-depth knowledge of statistical process control by describing central concepts and methods in the area.
- apply central methods in statistical process control both through manual calculation and by using computer software.
- demonstrate ability to practically use methods in statistical process control in an organization's improvement efforts.

Contents

The course covers both basic and advanced methods in statistical process control, such as: control charts and capability analysis. Control charts for variables and attribute data are introduced. The course also covers control charts for data with special characteristics that can appear in industry. The different parts of the improvement program or philosophy Six Sigma and their implementation in organizations are discussed. The problem solving methodology typically used in Six Sigma is studied and are normally applied in the student's project work. The course also covers additional content from relevant research articles in the field.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The course is primarily offered as a campus course at LTU, but the course is some years also available as a web-based course on distance. Teaching in the campus course consists of classroom lectures and seminars, video recordings and group work. The course normally also includes mandatory assignments and project work which should be presented orally and in writing. Compulsory attendance may apply, such as at oral presentations of projects. Part of the teaching can be held in English.

The distance learning course consists of self-tutoring using tutorials, mentoring and group work without meetings at campus. The distance course normally also includes mandatory assignments and project work that need to be presented both orally and in writing.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. The student should demonstrate that the course aims are reached through an oral or written final exam, and through oral and written presentation of mandatory assignments and project work. All examined parts of the course must be approved for a passing grade.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Remarks

Students must register for the courses themselves, or contact ETKS educational administration eduetks@ltu.se, not later than three days after the quarter commences. Failure to do so can result in the place being lost. This rule also applies to students with a guaranteed place.

Overlap

The course K7005N is equal to IEK215

Course offered by

Department of Social Sciences, Technology and Arts

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0003	Written exam	G U 3 4 5	4.5	Mandatory	A21	
0004	Compulsory group work/project work	U G#	3	Mandatory	A21	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Director of Undergraduate Studies Daniel Örtqvist, Department of Social Sciences, Technology and Arts 2022-02-11

Syllabus established

by Department of Business Administration and Social Sciences 2007-12-17