



# AH2921 Adjustment Theory 6.0 credits

## Felteori

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 AH2921 valid from Autumn 2010

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

## Specific prerequisites

For single course students:

- A completed Bachelor of Science in Engineering or 180 credits academic studies in the field of Technical Science, Economics or Planning and documented proficiency in English corresponding to English B.

For program students:

- AH1816 Geodetic Surveying or equivalent

## Language of instruction

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

## Intended learning outcomes

After completing this course, students should be able to

- analyze errors and geospatial data quality
- carry out calculations of least squares adjustment
- use theoretical insights of errors in designing and planning of practical surveying work

## Course contents

- Types and characteristics of errors. Standard errors and weights. Error propagation.
- Error curve, error ellipse and error ellipsoid
- Statistical distributions. Confidence intervals. Regression and variance analysis.
- Least squares principle. Condition adjustment. Linearization of non-linear conditions.
- Adjustment by elements. Linearization of non-linear observation equations.
- Observation equations of common geodetic measurements.
- Other adjustment models.

## Disposition

Lectures: 20 h

Laboration: 52 h

## Course literature

Fan (1997). Theory of errors and least squares adjustment. KTH.

## Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, 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.

TEN1 - Written exam, 3,0 p, grading scale: A, B, C, D, E, FX, F

LAB1 - Laboratory works, 3,0 p, grading scale: P, 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.