AH2915 Laser Scanning Technology 7.5 credits

Laserskanning

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for AH2915 valid from Spring 2010

Grading scale

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

Education cycle

Second cycle

Main field of study

The Built Environment

Specific prerequisites

AH2811 Geodetic surveying or equivalent.

AND

AH2921 Adjustment theory or equivalent.

Language of instruction

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

Intended learning outcomes

To give students theoretical and practical knowledge about the laser scanning measurement procedure, data processing and modelling.

Course contents

- Basic principles of laser scanners and electronic distance measurement
- Terrestrial and air-born laser scanning
- Metrological aspects: error analysis and calibration
- Transformation (registration) of multiple scans
- Different methods for geo-referencing of laser scanning data
- Different methods for point cloud visualisation
- Data reduction and modelling
- Deformation monitoring using laser scanning
- Applications in construction and cultural heritage conservation

Disposition

Lectures 20h

Laborations 48h

Course literature

Yuriy Reshetyuk (2006): Introduction To Terrestrial Laser Scanning. Leica Geosystems (2005). HDS training manual.

Examination

- PRO1 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 4.5 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.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Project work (PROJ; 4.5 cr)
Approved laboration (LAB1; 3 cr)

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.