AH1815 Introduction to GPS 7.5 credits

Introduktion till GPS

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

Establishment

Course syllabus for AH1815 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

High school mathematics and physics

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

- understand how satellite positioning works, error sources and their elimination
- carry out measurement with advanced and simple GPS receivers
- process GPS observations, combine them with terrestrial observations and transform results into local or national reference system

Course contents

- Basic principles of positioning with help of satellites
- Components of the system and their functions: satellites, control stations, GPS receivers
- GPS positioning techniques – static, kinematic ...
- Error sources and the way of their elimination
- Differential GPS, RTK, DGPS
- Detail surveying and setting out with GPS
- Establishment of geodetic control networks
- Combination of terrestrial and GPS measurements
- Transformations: connecting GPS measurements to local reference systems

Disposition

Lectures: 20 h

Laboration: 40 h

Course literature

B. Hofmann-Wellenhof, H. Lichtenegger, J. Collins (2001). GPS, Theory and Practice, Springer. Wien, New York.

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory work, 3.0 credits, grading scale: P, 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

Written exam (TEN1; 4,5c)

Approved laboration (LAB1; 3c)

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.