



FAG3200 Geodetic reference systems 7.5 credits

Geodetiska referenssystem

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 FAG3200 valid from Autumn 2017

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

AG5129 Theory of Errors

AG5130 Satellite Based Positioning

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, the student should have obtained an insight into problems and current research topics related to geodetic reference systems and map projections.

Course contents

1. Literature study on both reference systems and map projections:
 - (a) computations of geodetic lines on the reference ellipsoid,
 - (b) different types of map projections including computations of deformations and project coordinates;
 - (c) theoretical basis of astro-geodetic triangulation and height systems;
 - (d) modern 3D geodetic reference frames and related astro-geodynamic phenomenas and
 - (e) transformation between different reference frames.
2. The literature study is completed with a written exam.
3. Select either topic; reference systems or map projections, and together with the main supervisor, define a smaller project linked to the topic of the doctoral studies.
4. Present results of the project in a written report for approval by main supervisor and course examiner.

Course literature

För steg 1 och 2:

- (a) Fan (2016). Theoretical geodesy. KTH
- (b) Jordan, W., Eggert, O., and Kneissl, M. (1959). Handbuch der Vermessungskunde, Band IV: Mathematische Geodäsie. Stuttgart.
- (c) Pettersson, L. (1985). Geografisk geodesi. LMV, Gävle
- (d) Hoffmann-Wellenhof, B., Lichtenegger, H. and Collins, J. (2008). GNSS, Theory and Practice. Springer-Verlag Wien New York.

För steg 3 och 4, litteratur som passar till projektet. Detta kan t.ex. vara aktuella tidskriftsartiklar eller artiklar från proceedings och workshops t.ex. från EUREF kommissionen, IAG, International GNSS Service (IGS) eller Nordiska Kommissionen för Geodesi (NKG).

Examination

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.

Written exam (TEN1): 3p

Project report (PRO1): 4,5p

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.