



Faculty of Social and Life Sciences
Geo-Science

Syllabus

Course Approval

The syllabus was approved by the Faculty Board of Social and Life Sciences on 30 May 2007, and is valid from the Autumn semester of 2007 at Karlstad University. It replaces the former syllabus GGI306.

Course Code: NGGC66

Geodesy and GIS, 7.5 ECTS Credits

(Geodesi för GIS, 7.5 Swedish credit points)

Degree Level: Bachelor

Progressive Specialisation: G1F (First cycle, has less than 60 credits in first-cycle course/s as entry requirements)

Language of Instruction

Swedish

Prerequisites

General admission requirements and the following courses: Geodesy I and Global Navigation Satellite Systems or the equivalent.

Major Field of Study

MÄT (Surveying and Mapping), NGA (Physical Geography)

Learning Outcomes

Upon completion of the course, the students should be able to:

- give an account of Gauss-Kruger projection and its impact on geodetic surveying,
- apply coordinate transformation connections between local, regional, national, and global reference systems,
- compute parameters for coordinate transformation according to Helmert,
- identify and analyse deformations of geodetic control point networks,
- explain how the application of Global Navigation Satellite Systems impacts work done with the help of older geodetic reference systems,
- use transformation software to establish a correct relationship between geographic data in different reference systems.

Content and Form of Instruction

Instruction is in the form of lectures and lab work.

The course covers map projection, primarily Transversal Mercator and its impact on geodetic surveying. An important part of the course includes coordinate transformations in two and three dimensions in order to merge geographic data from different reference systems.

The course includes deformation analyses of geodetic control point networks and problem correction models. There will also be a discussion of the consequences of using satellite-based navigation systems in existing geodetic control point networks.

The course includes a large amount of computation exercises in which students learn to use software for coordinate transformations in order to merge data from different reference systems.

Reading List

See separate document.

Examination

Examination is in the form of assignments and a written report.

Grades

One of the grades Pass with Special Distinction (5), Pass with Distinction (4), Pass (3), or Fail (U) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.

The course is mandatory for the GIS-engineering programme and the survey and mapping programme.

Revised on 29 March 2010 and valid from the spring term 2010.

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