Linnæus University

Jnr: 2015/4187-3.1.2

Course syllabus

Faculty of Technology
Department of Building Technology

1BY007 Geodesi med GIS, 7,5 högskolepoäng
Geodetic Surveying and Geographic Information System, 7.5 credits

Main field of study
Civil Engineering

Subject Group
Building Technology

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved 2009-07-24
Revised 2015-12-21 by Faculty of Technology. Review of literature.
The course syllabus is valid from spring semester 2016

Prerequisites
Computational Methods for Technical Applications 7,5 credits/Basic Mathematics for Engineers, 7,5 credits, Building Technology 1, 7,5 credits.

Objectives
After completing the course the student is expected to have acquired basic knowledge for performing measurement and setting out work within the building and construction field.
The student is expected to:

- be familiar with measuring techniques used in these contexts
- be able to use total stations, theodolites and levelling instruments
- be able to perform geodetic calculations
- be able to analyze and present geodetic measurement data
- be familiar with GPS and its use
- be familiar with GIS and its use

Content
The course comprises the following elements:
Geodesy:

- Geodetic surveying preconditions
- Geodetic and measurement technology concepts
- The use of levelling instruments
- The use of theodolites

- The use of total stations
- Mapping
- Field exercises
- Demonstration of other measurement techniques

GIS:

- Geographic information systems, GIS
- Systems of coordinates, map projections and reference systems
- Spatial data structures
- Data gathering and database techniques
- Analysis and presentation

Study visits and mentor company tasks. Study visits in accordance with teacher instructions. Programme students perform predetermined
mentor company assignments, which are presented in writing.
Independent course students make the corresponding written presentations of course elements and/or study visits in accordance with teacher instructions.

Type of Instruction

The teaching consists of lectures, field exercises, laboratory work. All exercises and field work are compulsory Information on the extent of other compulsory elements will be given at the start of the course.

Examination

The course is assessed with the grades U,3,4 or 5.
The assessment of student performances is generally written and takes place during special examination periods. The assessment may also be based on written or oral presentations of project work, laboratory work and assignments.

Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

Required Reading and Additional Study Material

Required reading

Geodesi, Grundkurs i Geodetisk mätningsteknik, Kompendium, Växjö 2015.
Övningsuppgifter i geodesi (räkneuppgifter som utdelas vid kursstart).
Uppkopierat material som omfattar föreläsningar, fältövningar inomhus, fältövningar utomhus, datorprogrammet GeoProfessional, laborationer m.m. (utdelas under kursen).

Reference Literature

Geodesi och mätningsteknik, Samuel A Berg
Ritningsläsning och mätningsteknik, Bygg, Liber