

GEO1181 Basic Land Surveying - 2013-2014

Course code:

GEO1181

Course name:

Basic Land Surveying

Course level:

Bachelor (syklus 1)

ECTS Credits:

20

Duration:

Autumn

Duration (additional text):

Autumn

Language of instruction:

Norsk, alternativt engelsk

Expected learning outcomes:

Knowledge in:

- Basic measuring methods
- Use of measurement instruments
- Manual computation of coordinates and heights, accuracy computation.
- Documentation and standards.

Skills:

- Ability to work with measuring instruments
- Ability to use software to process survey data

General competence:

- Basic use of measuring instruments and software, ability to process data both manually and in software, do documentation and write reports.

Topic(s):**Instruments:**

- Focus is on physical instrumental mechanisms, and quality controls/calibrations:
- Instrument checking, calibration and documentation

Measurement techniques:

- Leveling
- Surveying with total stations
- Polar setting out
- Resection
- Simple satellite surveying by RTK
- Setting out for building construction
- Setting out for roads
- Setting out for tunnels

Computations:

- Transformations
- Simple manual computation of coordinates and heights
- Survey computation programs' introduction and elementary use:
 - GIS-LINE
 - GEMINI
- Road alignment computations
- Documentation
- Computing standards, Geodatastandarden

Accuracy:

- Theories and practices necessary to be able to follow the topics introduced under Instruments,

Techniques and Computations

- Types of error, their recognition, and prevention possibilities
- The mean (average)
- Standard deviation
- Normal distribution
- Combining the estimated errors of independent observations
- Weighting
- Correlation
- Brief introduction to simple survey adjustment

Additional topics:

- Interpretation of technical drawings
- Movement of digital data between PCs and electronic field controllers
- Reports writing
- Ideas and innovations

Teaching Methods:

Lectures

Group works

Exercises

Project work

Tutoring

Form(s) of Assessment:

Oral exam, individually

Exercises

Form(s) of Assessment (additional text):

- Oral exam, individually (60%)
- Exercises (40%)
- All parts must be passed

In the course are included 10 to 12 tasks. Some of the tasks are provided in groups, while other are delivered individually. All tasks must be passed. Final grade is based on all submitted tasks, which together count for 40% of the grade. It can be granted a deferred deadline for the tasks that have been disapproved.

Grading Scale:

Alphabetical Scale, A(best) – F (fail)

External/internal examiner:

Project reports are evaluated by nominated lecturers.

External moderators regularly assist in reviewing content and evaluating arrangements for grading assessment.

Re-sit examination:

Together with the next class, one year later.

Tillatte hjelpemidler:**Coursework Requirements:**

10 to 12 mandatory tasks that must be approved before for the exam.

Participation in 3IKK (3-hour creativity course), both teaching and group exercises.

Academic responsibility:

Faculty of Technology, Economy and Management

Course responsibility:

Høgskolelektor Jurate Bieliauskaite

Teaching Materials:

- Skogseth, T. (1998). Grunnleggende landmåling. Oslo: Universitetsforlaget (ISBN: 82-00-42453-7).
- Statens kartverk. Geodatastandarden.
- Statens kartverk. Geodatastandarden, grunnlagsnett.
- Statens Kartverk. (2001). Satellittbasert posisjonsbestemmelse. Hønefoss: Statens kartverk.
- Vegdirektoratet. (2000). Vegdirektoratets håndbøker, 017 Geometrisk utforming.
- Vegdirektoratet. (2000). Vegdirektoratets håndbøker, 018 Veibygging.
- Instrument and program manuals.

Additional information:

The course covers the same content as “GEO1191 Basic Land Surveying 1” and “GEO1201 Basic Land Surveying 2” together. But it can’t be approved just with “GEO1191 Basic Land Surveying 1” and/or “GEO1201 Basic Land Surveying 2”.

Publish:

Yes