



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Samhällsmätning Surveying

EXTA50, 9 credits, G1 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED L

Date of Decision: 2023-04-20

General Information

Main field: Technology.

Compulsory for: L2

Language of instruction: The course will be given in Swedish

Aim

The aim of the course is to provide in-depth knowledge of concepts and methods in geodesy, surveying, photogrammetry and remote sensing.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- explain theory of geodetic reference systems and map projections,
- explain basic concepts in geodesy including satellite geodesy,
- explain surveying methods for measurement and computations,
- explain methods for collecting data using photogrammetry and remote sensing, and
- explain how surveying methods are used in cadastre.

Competences and skills

For a passing grade the student must

- apply standard surveying methods,
- perform adjustment calculations,
- apply surveying knowledge in cadastre, and
- programming surveying applications.

Judgement and approach

For a passing grade the student must

- judge the quality of geographic data collected by surveying methods.

Contents

The course contains basic concepts and definitions in geodesy, map projections, transformations, surveying, computational techniques as well as introduction to photogrammetry and remote sensing. The course requires knowledge of previous or parallel courses in mathematics and mathematical statistics.

Furthermore surveying techniques applied to cadastre is studied.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Written examination and satisfactory compulsory assignments.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0113. **Name:** Written Examination.

Credits: 6. **Grading scale:** TH. **Assessment:** Written examination

Code: 0213. **Name:** Laboratory Work.

Credits: 3. **Grading scale:** UG. **Assessment:** Approved laboratory tasks.

Admission

Assumed prior knowledge: FMA420 Linear Algebra OR FMAB20 Linear Algebra AND FMA430 Calculus in Several Variables OR FMAB30 Calculus in Several Variables AND EDAA20 Programming and Databases.

The number of participants is limited to: No

The course overlaps following course/s: EXTA45, VGMA01

Reading list

- Harrie, L. (red.): Geografisk informationsbehandling – teori, metoder och tillämpningar, 7:e upplagan. Studentlitteratur, 2020.

Contact and other information

Course coordinator: Lars Harrie, lars.harrie@nateko.lu.se

Course homepage: <https://www.nateko.lu.se/EXTA50>

Further information: Teaching includes lectures, labs, and excersizes with and without computer support.