



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Geodetisk mätningsteknik

Geodetic Surveying

VGMF15, 5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED V

Date of Decision: 2023-03-21

General Information

Main field: Technology.

Compulsory for: V3

Language of instruction: The course will be given in English

Aim

The course aims to give basic knowledge about concepts and methods used in geodetic surveying, photogrammetry, and satellite positioning.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

be able to:

- explain theory of geodetic reference systems
- describe horizontal and height reference systems
- explain surveying methods used for point positioning and mapping
- describe basic principles in photogrammetry and GPS

Competences and skills

For a passing grade the student must

be able to:

- apply knowledge in surveying for construction and infrastructure projects
- apply standard surveying methods for solving problems in plane and height dimensions

- perform geodetic adjustment computations using the Least-Squares method

Judgement and approach

For a passing grade the student must

be able to:

- understand the significance of and be able to assess geodetic analyses, projecting and planing

Contents

Basic classical surveying calculations in plane and height coordinate systems. Geodetic adjustment theory and accuracy analysis using the Least-Squares method. GPS and photogrammetry concepts, definitions and applications.

Examination details

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

Assessment: Written final examination, project work, and compulsory fieldwork.

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.

Admission

Assumed prior knowledge: FMAB20 Linear Algebra OR FMA420 Linear Algebra.

The number of participants is limited to: No

The course overlaps following course/s: VGM630, VVBF05, VGMA05

Reading list

- Charles D. Ghilani: Elementary surveying: an introduction to geomatics. Pearson, 2017, ISBN: 978-0134604657.
- J. Uren and B. Price: Surveying for engineers. Palgrave Macmillan, 2010, ISBN: 978-0230221574.

Contact and other information

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Course homepage: <http://www.tft.lth.se>