GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2017-2018

Topography (E000810)

Course size (nominal values; actual values may depend on programme)

Credits	3.0	Study time	90 h
Contact hrs	30.0 h		

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	15.0 h
		practicum	15.0 h

Lecturers in academic year 2018-2019

De Wulf, Alain	WE12	lecturer-in-charge

Offered in the following programmes in 2018-2019	crdts	offering
Bachelor of Science in Engineering: Architecture	3	A
Bachelor of Science in Civil Engineering	3	A
Master of Science in Engineering: Architecture (main subject Architectural Design and Construction Techniques)	3	A
Master of Science in Engineering: Architecture (main subject Urban Design and Architecture)	3	A
Preparatory Course Master of Science in Urbanism and Spatial Planning	3	A

Teaching languages

Dutch

Keywords

Topography, engineering surveying, geomatics

Position of the course

This course is a broadening and a support for the other courses of the curriculum of civil construction. The aim is twofold: 1. to learn the basic principles of surveying; 2. to understand which accuracy and errors can be expected in function of the selected surveying instrument and surveying methods.
The contribution to the end terms consists of the apport of basic surveying know-how and analysing techniques that can be integrated in all projects of civil construction dealing with localisation, dimensions and geometric constraints.

Contents

- Surveying: Length and angular units used for Surveying, Introduction and elements of geodesy and cartography, Geodetic basis and reference systems, Components of topographical instruments, Measurements of angles using theodolites and total stations, Distance measurements, GPS and other global navigation satellite systems, laserscanning.

Initial competences

Basic knowledge physics

Final competences

1 TERMS: Level, levelling instrument, theodolite, totalstation, GPS, GNSS, adjustments, accuracy, precision, bluncer detection, quality, centring, compensator, setting up, coordinate system, projection system, EDM.
2 INSIGHT: To know wich surveying instruments and surveying methods are available on the market, what the advantages and drawbacks of these instruments and surveying methods are. To have the knowledge to plan and to perform a surveying project.
3 SKILLS: To learn how to handle surveying instruments (levels, totalstations, GPS,...). To learn how to write a surveying report.

4 ATTITUDES: To be careful when performing or interpreting surveying data. To be aware of all parameters that can influence a surveying project.
5 SKILLS: To be able to predict the accuracy of surveying task with a specific surveying instrument in combination with a specific surveying method.
6 SKILLS: To discern and to be able to optimise the factors that influence the reliability and accuracy of a sureying task and the resulting statistical-analytical data processing.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, practicum

Extra information on the teaching methods

4 practical terrain exercises: levelling, measurement of angles, polygonation, GNSS

Learning materials and price

Schofield & Breach (2007) Engineering Surveying - 6th edition. (ISBN-13: 978 0 7506 6949 8)

References

- Surveying, Kahmen H., Faig W., ISBN 3-11-008303-5, de Gruyter,
- Berlin.
- Handbuch Ingenieurgeodäsie, Möser, ISBN3-87907-293-0,
- WichmanHeidelberg.

Course content-related study coaching

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination

Examination methods in case of periodic evaluation during the second examination period

Written examination

Examination methods in case of permanent evaluation

Report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

During examination period: oral closed-book exam, written preparation. During semester: graded lab sessions.

Calculation of the examination mark

2/3 for theory 1/3 for practical exercises (field exercises) for first evaluation period. For the practical exercises no evaluation in the second examination period possible: only the theory is re-examined. The global result in the second examination period is bases solely on the result of the theoretical exam.