

Surveying Engineering (C003857)

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

Credits 5.0 Study time 150 h Contact hrs 55.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	25.0 h
		practicum	30.0 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 Geography and Geomatics	5	A
Linking Course Master of Science in Geomatics and Surveying	5	A
Preparatory Course Master of Science in Geomatics and Surveying	5	A

Teaching languages

Dutch

Keywords

Surveying engineering, topography, topometry, height measurements, angle measurements, distance measurements, satellite positioning.

Position of the course

- Introduction to definitions and basic principles for the surveyor.
- Understanding what kind of precision can be achieved with specific topographical equipment and different methods of acquisition.

Contents

- What is engineering surveying ? Specifying the domain and boundary conditions.
- Length- and angular topographical units
- Terminology and classification of topographical instruments
- Height measurements
- Angle measurements
- Measurements of distances
- GNSS (global navigation satellite systems)

Initial competences

Basic knowledge of physics.

Final competences

- 1 Concepts: water level, theodolite, total station, GPS, GNSS, gauging, accuracy, precision, reliability, quality, centering, compensator, coordinate systems, projection systems, electromagnetic distance measurement
- 2 Insights: to know what topographical devices are available, and what advantages and disadvantages they have, to know what measuring methods are available, and what advantages and disadvantages identify these measurement types
- 3 Skills: handling different methods and equipment to perform measurements
- 4 Writing a scientific topographic report
- 5 Attitudes: performing and interpreting measurements, learning to see all possible parameters that can influence the measurement

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

5 practical terrain exercises: levelling, measurement of angles, polygonation/distance measurements, GNSS and detailed survey.

Learning materials and price

De Wulf (2014), Basisprincipes van de topografie. Academia Press (ISBN nr: 978 90382 2303 2)

Prics: ca. 30 EUR

A similar basic surveying book in english: Schofield & Breach (2007) Engineering Surveying - 6th edition. (ISBN-13: 978 0 7506 6949 8)

Cost: about 20 EUR

References

An extended list of surveying books in Dutch, English, French and German available in the library.

Course content-related study coaching

Students can appeal to the lecturer and exercise assistants, and to the study coaches which are provided by the geography department.

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

Written examination about the theory.

Field exercises: Written reports.

Calculation of the examination mark

Theory: periodic (for 2/3 of the total score).

Exercises: permanent evaluation (for 1/3 of the total score).

Facilities for Working Students

Option for feedback, in mutual agreement, during or outside the usual office hours.