

Course Specifications

From the academic year 2017-2018 up to and including the

Quality of Measurements and Estimations (C001304)

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

Credits	5.0	Study time	140 h	Contact hrs	35.0 h
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Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch, English	lecture	15.0 h
		practicum	20.0 h

Lecturers in academic year 2018-2019

De Wulf, Alain	WE12	lecturer-in-charge
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Offered in the following programmes in 2018-2019

Master of Science in Geomatics and Surveying	crdts	offering
	5	A

Teaching languages

Dutch, English

Keywords

Quality, ISO 17123, totalstations, surveying engineering, topography.

Position of the course

A basic knowledge of surveying engineering, totalstations and global navigation satellite positioning systems is assumed. In this course, further en deeper insight will be given in the quality evaluation procedures and standards, and international ISO-norms. Exercises about least squares liquidations, calibration exercises and the use of ISO standards in the field.

Contents

The quality evaluation procedures and standards will be studied, beneath the national GRB- and international ISO-norms in this field.

Initial competences

Basic knowledge of surveying engineering and totalstations (as is acquired by Bachelors in Geography and Geomatics).

Final competences

- 1 The ability to specify the different error sources of topographical measurements and of real estate estimations.
- 2 The knowledge to apply different error models in function of the problem to solve.
- 3 The capacity of explaining the differences of topographical equipment or of analytical data processing procedures.
- 4 The capability to predict the accuracy that can be expected with specific equipment and the specific measuring methodology.
- 5 To discern all factors that influence the reliability and accuracy of a measurement and of the statistical analytical data processing.
- 6 Error models and accuracy of a measurement.
- 7 To qualitatively assess and locate analytical processing methods.
- 8 To be able to handle quality prediction models.
- 9 To possess the knowledge of the most important international quality standards and norms.

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

Theory through lectures.

Exercises about least squares liquidations, calibration exercises and the use of ISO standards in the field.

Learning materials and price

Documentation is available on the electronic platform.

Cost: 20 EUR

References

An extended list of important books in Dutch, English, French and German available in the department's library.

Course content-related study coaching

Students can appeal to the lecturer and exercise assistants, and to the study guides foreseen by the geography department every year.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination, oral examination

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

Written examination, oral examination

Examination methods in case of permanent evaluation

Oral examination, 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

Oral examination **with written preparation** for the theory. During the examination, on the one hand side, the general knowledge will be evaluated, and on the other hand side, more detailed questions will evaluate the deepness of knowledge, the ability to discern relations and to formulate a clear and scientifically precise answer to the questions.

Written report for the exercises.

The examination system can be adapted in the period before the examination period. In that case this will be communicated to the students during the courses and by the use of Minerva (Electronic Platform from Ghent University).

Calculation of the examination mark

Theory: periodical (1/2)

Exercises: non-periodical. (1/2)