

Hydrographic Surveying (C003547)

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

Credits 6.0 Study time 180 h Contact hrs 35.0 h

Course offerings and teaching methods in academic year 2019-2020

A (semester 1)	English	microteaching	1.25 h
		lecture	30.0 h

Lecturers in academic year 2019-2020

De Wulf, Alain	WE12	lecturer-in-charge
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Offered in the following programmes in 2019-2020

	crdts	offering
Master of Science in Geomatics and Surveying	6	A
Exchange programme in Geomatics (master's level)	6	A

Teaching languages

English

Keywords

Bathymetry, Multibeam, Singlebeam, Echosounder, Positioning Quality, satellite positioning, GNSS

Position of the course

A basic knowledge of surveying engineering and global navigation satellite positioning systems is assumed. In this course, further en deeper insight will be given in the positioning methods on sea, single- and multibeamechosounding and seabottom-modelling.

Contents

Further en deeper insight will be given in the positioning methods on sea, single- and multibeamechosounding and seabottom-modelling. Special attention will be given to the quality of bathymetric measurements and to the data processing workflow which leads to bathymetric maps.

Initial competences

Basic knowledge of geodetic datums, surveying engineering and global navigation satellite positioning systems (as is acquired by Bachelors in Geomatics).

Final competences

- 1 The ability to specify the different error sources of bathymetric measurements and planimetric positioning.
- 2 The knowledge to apply different error models in function of the problem to solve.
- 3 The capacity of explaining the differences of echosounder 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 To evaluate error models and measurement accuracy of bathymetric projects.
- 7 To possess the knowledge of the most important international quality standards for bathymetry.
- 8 To be able to handle quality prediction models.

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, microteaching

Learning materials and price

The slides of the course are available, as well as an extensive list of readers. Thanks to an extended list of examination questions, the students can select the topics to study out of these readers.

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

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

Written examination

Examination methods in case of permanent evaluation

Participation

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

Extra information on the examination methods

Written examination 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.

The students also prepare one or two presentations on an agreed hydrographic subject.

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 Ufora (Electronic Platform from Ghent University).

Calculation of the examination mark

100% of the points for the theoretical exam that includes the presentation(s).