

# Course Specifications

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

Course size (nominal values; actual values may depend on programme)  
Credits 4.0 Study time 120 h Contact hrs 62.5 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	seminar: coached	40.0 h
		exercises	22.5 h
		lecture	

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

	crdts	offering
<a href="#">Bachelor of Science in Geography and Geomatics</a>	4	A
<a href="#">Linking Course Master of Science in Geomatics and Surveying</a>	4	A
<a href="#">Preparatory Course Master of Science in Geomatics and Surveying</a>	4	A

Teaching languages

Dutch

Keywords

Surveying Engineering, field surveying, field geodesy, satellite positioning, GNSS, 3d data acquisition, 3D modelling

Position of the course

This course is a follow-up course for the Introduction to Surveying Engineering course of the first year of bachelor, where the basic concepts of height measurements, angle measurements, distance measurements and satellite positioning were explained.

In this course this knowledge is broadened (e.g. for the theme of 3D modelling, deepened (e.g. for the themes of stationing geometries and satellite positioning) and applied (by more time for exercises and project work).

In general, the aim is to extend the knowledge of planimetric and altimetric surveying methods with the focus on the reachable accuracies, but also, and specifically for the geography-oriented student, 3D modelling based on photo imagery and laserscanning is included.

Contents

- Intersection, resection, free stationing.
- Triangular and polygonal networks, control and adjustment methods.
- Concepts of coded measurements.
- Differential GNSS methods e.g. RTK-GNSS.
- Basics of 3D modeling based on photographs, laser scanning and topographic reference points, with special attention to applications in geography.

Initial competences

Basics of surveying engineering (e.g. First Bachelor course Introduction to Surveying Engineering).

Final competences

- 1 The content of this course, together with the content of Introduction to Surveying Engineering, aimed to fulfill the requirements in the field of surveying engineering, posed upon an accredited land surveyor, as formulated by the Flemish Education Council VLOR.
- 2 With the focus on geography students, to learn the basic competences to understand and use 3D modelling techniques: on the one hand, this encompasses the ability to acquire 3D data by using photo-, laser scanning- and surveying techniques; on the other hand, this implies knowledge about the possible processing techniques of

these data sources and objects.

#### 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, project, fieldwork, seminar: coached exercises

#### Learning materials and price

- PDF files of the slides of the courses and extra information is available free of charge on the digital platform MINERVA.
- Possibly, a syllabus book (in Dutch) will be published in the geomatics series of Academia Press.

#### References

A series of reference works in English, Dutch, French and German is available in the library of the Geography Department.

#### Course content-related study coaching

Students are free to contact the teaching staff and teaching coaches 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

#### Calculation of the examination mark

Theory exam and exercises/projects count each for  $\frac{1}{2}$  of the total score. But a score of less than 50 % on the exercises/projects or a lack of presence on the exercise moments can lead to a global negative (non-acceptable) result.