

Course Specifications

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

Satellite Positioning Systems (C000097)

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

Credits	5.0	Study time	140 h	Contact hrs	40.0 h
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Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	20.0 h
		practicum	30.0 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

	crdts	offering
Bachelor of Science in Geography and Geomatics (main subject Surveying)	5	A

Teaching languages

Dutch

Keywords

Satellitegeodesy, GPS, satellite positioning, GNSS, Galileo, Glonass, satellite receivers, RTK networks, Flepos

Position of the course

A basic knowledge of surveying engineering is assumed. In this course, further en insight will be given in the satellite positioning methods and the error sources and accuracy available with different kinds of equipment and methods.

Contents

Insight will be given in space geodesy and satellite positioning methods with the different available and future satellite systems. Special attention will be given to the quality of positioning and to the data processing workflow for raw satellite positioning data. Introduction to RTK networks, including Flepos.

Initial competences

Basic knowledge of geodetic datums and surveying engineering.

Final competences

- 1 The ability to specify the different error sources of satellite systems.
- 2 The knowledge to apply different error models in function of the problem to solve.
- 3 The knowledge of the most important satellite systems.
- 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 be able to handle quality prediction models for GNSS.
- 7 The capacity of explaining the differences of GNSS equipment or of analytical data processing procedures.
- 8 The ability to creatively handle simulations of observations by satellite positioning receivers.

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

Learning materials and price

Price: Maximum 20 EUR (Syllabus) or the price of the book (if any).

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 and to the electronic platform MINERVA.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination, report

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

Written examination, report

Examination methods in case of permanent evaluation

Participation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

Written examination about 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.

During the year, students have to prepare and give a presentation about a given subject.

Calculation of the examination mark

Theory: periodical (2/3).

Exercises: non-periodical (1/3).