

Introduction to Geomatics in Archaeology (A003311)

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

Credits 5.0 Study time 150 h Contact hrs 62.5 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	seminar: practical PC room classes	20.0 h
		seminar: coached exercises	20.0 h
		lecture	22.5 h

Lecturers in academic year 2018-2019

Bral, Lander	WE12	staff member
Saelens, Jeroen	WE12	staff member
De Wulf, Alain	WE12	lecturer-in-charge
De Maeyer, Philippe	WE12	co-lecturer
Van de Weghe, Nico	WE12	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
Bachelor of Arts in Archaeology	5	A
Preparatory Course Master of Arts in Archaeology	5	A

Teaching languages

Dutch

Keywords

Topography, Surveying, Topometry, Micro GIS, Geodesy, Geomatics, Geographic Information Systems, Geographic Information Science, Georeferencing, Geocoding, Spatial modelling

Position of the course

To introduce the basics of spatial localization, surveying, geographic information systems and cartography. Giving an insight about the achievable accuracy with different instruments and methods. Giving an insight about the possibilities offered by GIS and especially vector-gis. Analyzing and presenting data. Introduction to remote sensing

Contents

- Basic terminology of surveying. Surveying instruments (levels, total stations, GPS). Different methods for the performance of: leveling, length and angle measurements, GPS, projects. The students will have also 5 practicals.
- Basis terminology of remote sensing and photogrammetry.
- Basic terminology of geodesy, map projections and map coordinate systems.
- Basic terminology of map representations (semiology and syntax).
- Definitions, development of GIS, GIS components, geocoding of geographic information, georeferencing, datastructures, map layers and overlays, spatial modelling, user modalities and applications in the archeology.
- Exercises with QuantumGIS

Initial competences

Entry level for the University

Final competences

- 1 To solve a data-management problem using GIS.
- 2 Becoming capable of using GIS-and cartographic techniques in archaeological

applications.

- 3 Insights: to know what types of surveying instruments are available, to understand
1 their advantages and disadvantage, to know which measurement methods are
1 available.
- 4 Skills: handling different types of surveying methods and surveying equipment in
1 order to perform accurate surveying measurements.
- 5 Attitudes: performing and interpreting measurements, learning to discern and
1 evaluate all parameters that can influence the accuracy of a 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, seminar: coached exercises, seminar: practical PC room classes

Extra information on the teaching methods

Part surveying Engineering
- theory: oral lectures
- coached exercises in the field
Part Geodesy and GIS
- theory: oral lectures and demonstrations
- exercises in the PC class

Learning materials and price

De Maeyer, P., Basisbegrippen geomatica
De Wulf, A. 2014, Basisprincipes van de topografie, Academia Press
Estimated cost: about 70 €

References

A list of standard surveying engineering books in Dutch, French, German and English is included in the syllabus and the books are available in the library of the Department of Geography.

Course content-related study coaching

The students can contact the teaching staff (professors, assistants) or the study coaches yearly appointed by the Department of Geography.

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, 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 report for each surveying exercise.

Handing digital files or graphics of GIS exercises, oral evaluation on the exam.

Calculation of the examination mark

GIS-Carto/Surveying: 60/40
Theory/exercises: 2/3 versus 1/3.
Not participating in the exercises is eliminative.