GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

GIS (I700078)

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

Credits 3.0 **Study time 90 h**

Course offerings in academic year 2024-2025

A (semester 2) Dutch Gent

Lecturers in academic year 2024-2025

Vancoillie, Frieke LA20 lecturer-in-charge

Offered in the following programmes in 2024-2025	crdts	offering
Master of Science in Bioscience Engineering Technology: Agriculture and Horticulture (main subject Horticulture)	3	A
Master of Science in Bioscience Engineering Technology: Agriculture and Horticulture (main subject Plant and Animal Production)	3	A

Teaching languages

Dutch

Keywords

Geografic Information Systems, digital databases, spatial analysis

Position of the course

GIS has many applications, including the management of spatial data, the creation of digital geographic information and its querying and analysis. It has applications in diverse domains: agriculture, environment, ecology, etc. Many companies, research institutes and administrations in Belgium use GIS programmes to analyse geospatial data. Good knowledge of the practical use of GIS software is therefore an asset in the programme of Master in Bioscience.
The main objectives of this course unit are:
- Introduction to GIS
- Practical use of Quantum GIS (QGIS), a free and open source (FOSS) GIS package

Contents

The first part includes a brief introduction to the principles of GIS. The following aspects are covered: GIS concepts, spatial data structures, data input, data display, data query, data analysis and data output.
The second and largest part consists of hand-on exercises in QGIS. This practical part starts with guided exercises to get acquainted with the software: creating and storing grids and vectors, working with tables, spatial analysis of the data, layout and presentation, etc. This is followed by an independent assignment with focus on Flanders.
During this course, there is also a company visit to the Flanders Information Agency.

Initial competences

Basic skills in compure science required

Final competences

1 Have a basic knowledge on GIS and its applications
2 Be able to use the QGIS software
3 Critically analyse a spatial problem and solve it independently
4 Present a spatial problem in a scientific manner

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

Seminar, Lecture

Extra information on the teaching methods

On-campus lecture: teaching GIS basics, covering the full cycle of geographic data creation, management, processing, presentation, integration and communication.
Online tutorial: performing spatial analysis tasks in QGIS (in an online setting).

Study material

None

References

- Longley, P.A., Goodchild, M.F., Maguire, D.J., Rhind, D.W. 2015. Geographic Information Science and Systems. 4th Edition. Wiley
- Burrough, P., McDonnell, R.A., Lloyd, C.D. 2015. Principles of Geographic Information Systems. 3rd Edition. Oxford University Press
- Heywood, I., Cornelius S., Carver, S. 2012. An Introduction to Geographic Information Systems. Pearson Education Limited, Prentice-Hall
- DeMers M.N. 2017. Geographic Information Systems in Action. 1st Edition. Wiley.

Course content-related study coaching

Ad hoc after the lessons or during the practicals; through Ufora

Assessment moments

end-of-term assessment

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

Skills test, Written assessment with open-ended questions

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

Skills test, Written assessment with open-ended questions

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

The skillstest is a practical exam that assesses the extent to which students can adequately perform the desired GIS skills.

Calculation of the examination mark

Writtenexam: 20%
Skills test: 45%
Tasks: 10%
Team work: 25%
Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.