GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2025-2026

GIS: Applications (C004171)

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

Credits 7.0 **Study time 210 h**

Course offerings in academic year 2025-2026

A (semester 1)	Dutch, English	Gent
B (semester 1)	Dutch, English	Gent

Lecturers in academic year 2025-2026

Van de Weghe, Nico	WE12	lecturer-in-charge

Offered in the following programmes in 2025-2026	crdts	offering
Master of Science in Teaching in Arts and Humanities (main subject Archaeology)	3	B
Master of Science in Teaching in Science and Technology(main subject Geography and Geomatics)	7	A
Master of Arts in Archaeology	3	B
Master of Science in Geography and Geomatics	7	A

Teaching languages

English, Dutch

Keywords

Raster Analysis, Vector Analysis, Network Analysis, Multi-Criteria Decision Analysis, Sensitivity Analysis, Fuzzy GIS, Geographic Information (GI) Problems, Cartographic Modeling, Automation and Geoprocessing

Position of the course

-Covers specific research methods used within geography and geomatics
-Deepening of the basic knowledge of GIS
-Applying GIS in different domains

Contents

-Raster Analysis
-Vector & Network Analysis
-Multi-Criteria Decision Analysis
-PPGIS
-Fuzzy GIS
-FME
-Advanced GIS Analyses, linked to geographical sub-disciplines (i.e., physical geography, landscape science, socio-economic geography…)

Initial competences

to have successfully completed the course "Geographical information systems (GIS)" or have acquired the intended competencies in another way

Final competences

1 Create a cartographic model with the workflow of the solution of a GI problem.
2 Implement a cartographic model with the workflow of the solution of a GI problem.
3 Solve GI problems in different geographic domains (landscape science, physical geography, socio-economic geography).
4 Have a general overview of and insight into setting up GI projects.
5 Be able to present a research result (online) cartographically.

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, Practical, Independent work

Study material

Type: Syllabus

Name: Self-written syllabus
Indicative price: Free or paid by faculty
Optional: no
Language : English
Number of Pages : 100
Oldest Usable Edition : AY2425
Available on Ufora : Yes
Online Available : No
Available in the Library : No
Available through Student Association : No

Type: Slides

Name: Exercises
Indicative price: Free or paid by faculty
Optional: no
Language : English
Number of Slides : 100
Oldest Usable Edition : AY2425
Available on Ufora : Yes
Online Available : No
Available in the Library : No
Available through Student Association : No

Type: Slides

Name: Spoken slides
Indicative price: Free or paid by faculty
Optional: no
Language : English
Number of Slides : 250
Oldest Usable Edition : AY2425
Available on Ufora : Yes
Online Available : No
Available in the Library : No
Available through Student Association : No

References

Course content-related study coaching

During practical lessons, bij AAP

Assessment moments

end-of-term and continuous assessment

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

Written assessment with open-ended questions

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

Written assessment with open-ended questions

Examination methods in case of permanent assessment

Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

-Permanent evaluation (50%)
-Periodic evaluation (50%)

Students who evade the permanent evaluation cannot pass this course unit.
With the rise of advanced AI tools, their integration into GIS applications is becoming increasingly inevitable. This course acknowledges the potential of AI, including large language models (LLMs). Students are encouraged to use these AI tools if they wish.
We ask for two simple forms of transparency:

- Indicate when and where you used an AI tool in your GIS assignment.
- Specify which tool or platform you used, and which specific model.

Think of this as giving credit, similar to citing a helpful post on Stack Overflow or gis.stackexchange.com. By being transparent, you not only uphold academic integrity but also pave the way for deeper discussions about the convergence of GIS and AI.
In our exploration of GIScience and the role of AI tools, we draw inspiration from our university's motto: *Dare to Think*. We invite you not only to dare to think, but also to go a step further: *Dare to Ask Further*. Be critical and persistent. Keep asking questions until you arrive at a satisfying, correct, and clear answer.

Calculation of the examination mark

-Non-periodical evaluation (50%)
-Periodical evaluation (50%).
Students who do not participate in the non-periodic evaluation , cannot pass this course..