

Environmental Inventory Techniques (I002170)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size	<i>(nominal values; actual values may depend on programme)</i>		
Credits 3.0	Study time 75 h	Contact hrs	30.0 h

Course offerings and teaching methods in academic year 2021-2022

A (semester 1)	English	Gent	seminar: practical PC room classes	10.0 h
			group work	2.5 h
			lecture	17.5 h

Lecturers in academic year 2021-2022

Van De Vijver, Ellen	LA20	lecturer-in-charge
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Offered in the following programmes in 2021-2022

	crdts	offering
Bachelor of Science in Environmental Technology	3	A
Master of Science in Biology	3	A
International Master of Science in Sustainable and Innovative Natural Resource Management	3	A
Exchange Programme in Bioscience Engineering: Environmental Technology (master's level)	3	A
Exchange Programme in Bioscience Engineering: Land and Forest management (master's level)	3	A

Teaching languages

English

Keywords

sampling strategy, spatial inventory, spatial survey, geophysical prospection

Position of the course

Introductory course This course provides an overview of the basic principles for sampling strategy design with a main focus on a spatial context. Applications are oriented to the inventory and evaluation of primary and secondary environmental resources, such as landfill mining.

Contents

Sampling (design) in space: design- and model-based sampling strategies for inventory in an environmental context

Processing of spatial data into usable maps

Integration of secondary information from geophysical prospection (mainly electromagnetic survey data) in sampling design and data processing

Initial competences

Basic knowledge statistics, physics and earth sciences

Final competences

- 1 Understand and correctly apply fundamental principles of (spatial) sampling
- 2 Design and plan an appropriate sampling strategy for different objectives of (spatial) inventory
- 3 Correctly visualize and process spatial data into usable maps
- 4 Integrate geophysical survey data in sampling design and data processing

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

Group work, lecture, seminar: practical PC room classes

Learning materials and price

Course notes are available

References

- Webster, R. & Lark, M. (2013). *Field Sampling for Environmental Science and Management*. Oxon, United Kingdom: Routledge. ISBN: 978-1-84971-368-9
- de Grijter, J., Brus, D. J., Bierkens, M. F. P., & Knotters, M. (2006). *Sampling for Natural Resources Monitoring*. Springer. ISBN:540-22486-6.
- Goovaerts, P. (1997). *Geostatistics for Natural Resources Evaluation*, New York, NY: Oxford University Press.
- Viscarra Rossel, R. A., McBratney, A., & Minasny, B. (Eds.). (2010). *Proximal Soil Sensing*. Progress in Soil Science. New York, NY: Springer.. ISBN: 978-90-481-8858-1.

Course content-related study coaching

The lectures are supported by MS PowerPoint presentations. The exercises include field work and supervised PC-practicals.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination with open questions

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

Written examination with open questions

Examination methods in case of permanent evaluation

Report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

*Written examination with open questions (knowledge and insight questions);
Permanent evaluation: reports of practical exercises*

Calculation of the examination mark

Final score = 60 % score periodic evaluation + 40 % score non-periodic evaluation.
Students who withdraw from periodic and/or non-periodic evaluations for this course may be declared failed by the examiner.