GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2025-2026

Micropaleontology and Paleo-environmental Reconstruction (C002607)

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

Credits 6.0 **Study time 150 h**

Course offerings and teaching methods in academic year 2025-2026

A (semester 1)	English	Gent	lecture
			practical

Lecturers in academic year 2025-2026

Louwye, Stephen	WE13	lecturer-in-charge
Speijer, Robert	KUL	co-lecturer
Vandenbroucke, Thijs	WE13	co-lecturer

Offered in the following programmes in 2025-2026	crdts	offering
Master of Science in Teaching in Science and Technology(main subject Geology)	6	A
Master of Science in Geology	6	A
Master of Science in Geology	6	A
Master of Science in Marine and Lacustrine Science and Management	6	A
Exchange programme in Geology (master's level)	6	A

Teaching languages

English

Keywords

Palaeobiology, fossil micro-organisms, morphology, evolution, palaeoenvironment, palaeogeography

Position of the course

Knowledge and insight of the most important groups of fossil micro-organisms and their evolution over Earth's history. Their use for biostratigraphy and as proxies for the reconstruction of the palaeoenvironment, palaeogeography and palaeoclimate.

Contents

The palaeobiology of fossil micro-organisms over Earth's history: acritarchs, prasinophytes, dinoflagellates, chitinozoans, diatoms, silicoflagellates, radiolaria, calcareous nannoplankton, foraminifers, scolecodonts, ostracods, conodonts. Detailed review of the morphology and general characteristics, life strategies, palaeoproductivity, fossilisation and taphonomy, diversity and palaeogeography, evolution, radiation and extinctions. Fossil microorganisms as proxies for the palaeo-environment: principles and selected case studies.

Initial competences

Basic knowledge of paleontology, more specifically of fossil single-celled organisms.

Final competences

1 In-depth knowledge of the morphology of microfossils with calcareous, siliceous and organic walls, and their evolution.
2 In-depth knowledge of the applicability of microfossils with calcareous, siliceous and organic walls for relative dating and as a proxy in paleoenvironmental studies.
3 Insight in the contribution that micropaleontology can provide for other geological subdisciplines.
4 Insight in the applicability of practical micrpaleontological research in industry.

5 Develop the aptitude to discriminate between local, regional and global signals provided by microfossils.

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

Extra information on the teaching methods

Lecture, practicum, seminar: coached exercises

Study material

Type: Slides

Name: Ppt slides as used in the lectures
Indicative price: Free or paid by faculty
Optional: no
Language : English
Number of Slides : 200
Oldest Usable Edition : 2024-2025
Available on Ufora : Yes
Online Available : Yes
Available in the Library : No
Available through Student Association : No

References

Microfossils. H.A. Armstrong & M.D. Brasier, Blackwell Publishing, ISBN 0-632-05279-1

Course content-related study coaching

Possibility to ask questions about the oral teaching classes by email, via personal contact and during the practical excercises. Supervision during practical excercises by teachers and assistants.

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 not possible

Extra information on the examination methods

Extra information on the examination methods: form and contents of the examination are explained at the end of the course. A test evaluates whether students have internalized the final objectives.

Calculation of the examination mark

Permanent evaluation 10%, periodic evaluation 90%