

## 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 2024-2025**

A (semester 1)

English

Gent

lecture

practical

**Lecturers in academic year 2024-2025**

Louwye, Stephen

WE13

lecturer-in-charge

Speijer, Robert

KUL

co-lecturer

Vandenbroucke, Thijs

WE13

co-lecturer

**Offered in the following programmes in 2024-2025**

[Master of Science in Teaching in Science and Technology\(main subject Geology\)](#)

**crdts**

6

**offering**

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 micropaleontological 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 exercises. Supervision during practical exercises 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%