GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Mycology: Basidiomycota (C002777)

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

Credits 5.0 **Study time 135 h**

Course offerings and teaching methods in academic year 2024-2025

A (semester 1)	English	Gent	lecture
			independent work
			excursion

Lecturers in academic year 2024-2025

Verbeken, Annemieke	WE11	lecturer-in-charge
Haelewaters, Danny	WE11	co-lecturer

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Master of Science in Teaching in Science and Technology(main subject Biology)	5	A
Master of Science in Biology	5	A

Teaching languages

English

Keywords

Basidiomycota, Agaricomycotina, Agaricales, Aphyllophorales, Ascomycota, Pezizomycotina, Laboulbeniomycetes, Leotiomycetes, Systematics, Phylogeny, Identification, Taxonomy, Ecology, Biodiversity

Position of the course

This course is part of the major/minor cluster Biodiversity and Evolution in the Master Biology and is focusing on the diversity and evolutionary history of the two most important and diversified groups of true fungi: the phyla Ascomycota and Basidiomycota.
Basic knowledge for this course is acquired in the course Mycology in the 2nd bachelor of Biology where a more general overview of the pseudofungi, the slime molds, and true fungi is given. This Advanced Mycology course focuses on the relations between Ascomycota and Basidiomycota and other fungal clades, intra-phylum relationships, and molecular mycology (phylogenetic advances, bioinformatics). The focus lies on Ascomycota and Basidiomycota and the aim is that the student gains insights in the actually accepted large groups and clades and in the way modern molecular analyses influence the more classical morphologically based classification systems. This traditional classification based on both macro- and micromorphological characters is still important when it comes to recognition and identification of species, another important aim in this course (with focus on Agaricales). Discussing diversity and evolution of fungi goes hand in hand with discussing their life strategies and ecology.

Contents

- Tree of life: where are the true fungi? What are their relations with other groups of organisms?
- Ascomycota and Basidiomycota, monophyletic groups and intra-phylum relationships.
- Classification of Ascomycota: historical classification: discomycetes - loculoascomycetes - plectomycetes - pyrenomycetes. Current classification with focus on Laboulbeniomycetes and Leotiomycetes.
- Classification of Basidiomycota: historical classification: Aphyllophorales - Agaricales - Gasteromycetes (Friesian system). Overview of the traditional

characteristics (hymenophore type, basidioma type, microscopical features, macrochemical characteristics). Current classification: Agaricomycotina, Pucciniomycotina, Ustilaginomycotina.
- An overview of the relevant molecular tools. Plotting of ecological characters on phylogenetic trees (evolution of parasites toward EM and vice versa, multiple origins of gasteromycetation, lichenization)
- Hands-on: collecting, describing, documenting, conserving, identifying, keys, classification and nomenclature, this at the base of field excursions and working sessions in Salon du champignon and in collaboration with amateur mycologists from the Royal Flemish Mycological Society.
- Presentations at Winter Symposium & Fungus Fair.

Initial competences

Mycology in Bachelor 2 Biology

Final competences

1 Practical knowledge of the large groups of Basidiomycota.
2 Knowledge on specific level of one chosen group, confrontation with problems around species concept, nomenclature, ...
3 Insights in importance of characters and evolution of characters.
4 Insights in modern versus traditional classification.
5 Insights in the links between morphology and ecology.

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

Excursion, Lecture, Practical, Independent work, Peer teaching

Extra information on the teaching methods

Excursions: several excursions are organized for this course, some in collaboration with the Oost-Vlaamse Mycologische Werkgroep.
Independent self-study: students do research on a selected taxonomic group or subject and present their work during a Winter Symposium organized for the students, scientists in the Research Group Mycology, and members of the Royal Flemish Mycological Society.
Guided self-study: during the Salon du Champignon sessions, mushrooms are identified with the help of specialists and amathor mycologists.

Study material

Type: Handbook

Name: Veldgids Paddenstoelen I 500 soorten plaatjeszwammen en boleten
Indicative price: € 47
Optional: yes
Language : Dutch
Author : Nico Dam, Thomas W. Kuyper
ISBN : 978-9-05011-754-8

Type: Excursion

Name: Mycological excursions
Indicative price: € 25
Optional: no
Additional information: You can travel to excursions by private car or public transport. Carpooling is done as much as possible and students can also ride with supervisors, depending on the excursion site. There is a variety of excursions to all kinds of areas, some of which can also be reached by bike. The student can decide for himself which one he/she participates in and therefore also determine the cost.

References

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Course content-related study coaching

Questions can be discussed during the theoretical classes or Salon du Champignon sessions. Lecturers are also available to respond individually on demand. Students are welcome anytime to work in the lab, to bring their own mushrooms, and

identify them.

Assessment moments

end-of-term and continuous assessment

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

Assignment

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

Assignment

Examination methods in case of permanent assessment

Participation

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

Periodic evaluation (70% of final score): evaluation of the self-reliant study activities which are presented in an oral presentation.
Non-periodic evaluation (30% of the final score): participation in excursions and identification sessions.

Calculation of the examination mark

Periodic evaluation (70% exam) and non-periodic evaluation (30%) for the independent work