

## 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 2023-2024

A (semester 1)

Dutch

Gent

lecture

excursion

independent work

### Lecturers in academic year 2023-2024

Verbeken, Annemieke

WE11

lecturer-in-charge

Haelewaters, Danny

WE11

co-lecturer

### Offered in the following programmes in 2023-2024

Master of Science in Teaching in Science and Technology(main subject Biology)

crdts

5

offering

A

Master of Science in Biology

5

A

### Teaching languages

Dutch

### Keywords

Basidiomycota, Agaricales, Aphyllophorales, Systematics, Phylogeny, Identification, Biodiversity

### Position of the course

This course is part of the major/minor cluster Biodiversity in the Master Biology and is thus focusing on the diversity of one particular group of organisms: the Basidiomycota which are together with the Ascomycota the most important group in the kingdom of true fungi. Basis 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 moulds and the true fungi is given. This more specialized course is starting with a view on the present state of knowledge of the tree of life: what are the relations between the Basidiomycota and the other groups of organisms and what are the internal relations? Focuss is on the 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 (especially in Agaricales). Discussing diversity and evolution of fungi of course 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. Basidiomycota, a monophyletic group - internal relationships. Classification of the Basidiomycota: historical: Friesian system: Aphyllophorales - Agaricales - Gasteromycetes. An overview of the traditional characters: hymenophore type, basidiocarp type, microscopical features, macrochemical characters, ... An overview of the relevant molecular tools. A new classification: horizontal versus vertical. Presentation and practical approach of the large groups, the important clades. Plotting of ecological characters on the phylogenetic tree: evolution of parasites toward EM and vice versa, multiple origin of gasteromycetation, lichenisation,... Hands-on: collecting, describing, documenting, conserving, identifying, keys, classification and nomenclature, this at the base of working sessions in Salon du champignon and in collaboration with amateur mycologists from the Royal Flemish Mycological Society.

**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: the student works out and gives a presentation on a self-chosen taxonomic group; this will be presented in a minisymposium organized for the students, scientists in the research group mycology and members of the mycological society.  
guided self-study: in the salon du champignon mushrooms are identified with the help of specialists and amateur mycologists

**Learning materials and price**

ppt slides, keys, scientific publications, fresh material, microscopical tools including camera etc.  
Cost: about 10 EUR  
recommended but not required: field guide mushrooms (various possibilities will be explained during the lessons and the determination sessions)

**References**

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**Course content-related study coaching**

Questions or problems can be solved in the theoretical courses or during the practical courses.  
The teachers are also available to respond individually on demand. Students are welcome anytime to identify mushrooms in the salon du champignon. Students are always welcome during free hours to work in the salon, 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

