UCLouvain

lbio1213

2024

Morphology and physiology of fungi

2.00 credits	15.0 h + 10.0 h	Q1

Teacher(s)	Declerck Stephan ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	To follow this course, it is necessary to master the knowledge and skills developed in the courses LBIO1111 (Cellular and Molecular Biology) and LBIO1117 (Ecology I)
Main themes	-Taxonomy : nomenclature and terminology ; main taxons (ascomycetes, zygomycetes, basidiomycetes and deuteromycetes) - Life cycles of some selected species representative of main taxons - Main groups of fungi - In vitro culture - Activity of decolouration by White Rot Fungi - Introduction to identification of fungal species - Physiology and secondary metabolites (emphasis put on mycotoxines) - Bases of fungi sexuality
Learning outcomes	**At the end of this learning unit, the student is able to :** Competences • Use of fungal terminology • Allocation of a fungal species to a main taxon • Ability to use identification procedures to the fungal species (including yeasts, molds and filamentous fungi) • Mastering the different forms of fungal sexuality and of principal asexual developments 1 Knowledge • Introduction to fungal terminology and associated references allowing autonomy to the student. • The main taxons and life cycles of some representative species. • The double nomenclature of sexual and asexual cycles (anamorphic and teleomorphic names). • The fungal sexuality (bipolar and tetra polar, tetrad analysis, homothallic, heterothallism, parasexuality). • Symbioses : lichens and mycorrhizes (ecto- and endomycorrhizes). • In vitro culture of endomycorrhizes. • Main groups of fungi and their applications in biotechnology and environmental bioremediation.
Evaluation methods	Written exam integrating the concepts taught in the practicalcourses and the excursion.
Teaching methods	The teaching method consists of two components: (1) theoretical teaching through which the seven chapters are addressed, (2) an excursion to the 'bois de Lauzelle' during which the students are familiarized with fungal diversity and the role of fungi in an ecological context (carbon cycle ...).
Content	The course is divided into seven main chapters. Chapter 1 introduces some notions of mycology and fungi. It recalls the main beneficial or harmful activities and the general characteristics of the world of fungi. Chapter 2 briefly traces the history of mycology through its main actors. Chapters 3 and 4 focus on the notions of taxonomy and systematics as well as on the positioning of fungi in the living kingdom. Chapter 5 discusses the fungal cell (composition, structure and ultrastructure, growth, anastomoses and healing mechanisms). Chapter 6 deals with sexuality (life cycles, sexual and asexual reproduction, conidiogenesis, homotalism, heterothalism, dikaryotism) of the major taxa (Ascomycetes, Zygomycetes, Basidiomycetes, Glomeromycetes and Deuteromycetes). Finally, Chapter 6 reviews the major fungal groups in the major taxa.
Inline resources	Moodle
Faculty or entity in charge	BIOL

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Minor in Scientific Culture	MINCULTS	2		
Bachelor in Biology	BIOL1BA	2		
Minor in Biology	MINBIOL	2		
Bachelor in Biology, Anthropology and Archaeology	BABA1BA	2		