

Course title: MOLECULAR MYCOLOGY

ECTS credit allocation (and other scores): 2.0

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Natural sciences

Language: Polish

Number of hours per semester: 30 h.

Course coordinator/ Department and e-mail: Tomasz Kulik; Department of Botany and Evolutionary Ecology; email: tomasz.kulik@uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES: Extraction of DNA and RNA from mycelium using different nucleic acid extraction kits. qPCR (quantitative PCR) in fungal diagnostics. TaqMan analysis planning, setting up the reaction, interpretation of analysis results, documentation, preparation of a research report and discussion on the obtained results of diagnostic assays.

LECTURES: Review of modern molecular methods used in mycology and diagnostics of fungi. Structure and organization of fungal genomes. Fungal barcoding. qPCR (quantitative PCR) in diagnostics of fungi.

LEARNING PURPOSE: Understanding the characteristic of molecular tools used in mycology. Learning the genetic and genomic diversity of fungi.

On completion of the study programme the graduate will gain:

KNOWLEDGE: The student knows and understands the molecular basis of functioning fungal organisms

SKILLS: The student is able to use molecular techniques and tools in to identify fungi

SOCIAL COMPETENCIES: The student is ready to deepen his knowledge

Basic literature: 1.) B. P. Singh, V. K.Gupta, Molecular Markers in Mycology, Wyd. Springer International Publishing Switzerland, R. 2017

Supplementary literature: 1.) Kidd SE, Chen SC, Meyer W, Halliday CL, A New Age in Molecular Diagnostics for Invasive Fungal Disease: Are We Ready, Tom 1, Wyd. Front Microbiol., R. 2020, s. 1-20

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 30 h.

Student's independent work: 30 h.