



INTRODUCTION TO MEDICAL MYCOLOGY

CU characterization:

CU name:

Introduction to Medical Mycology

Scientific area acronym:

MM (Medical Mycology)

Duration:

Semiannual

Working hours:

56

Contact hours:

16

ECTS:

2

Observations:

Teacher in charge and respective teaching load in the CU:

Liliana Rodrigues – 16 hours

Other teachers and respective teaching load in the CU:

Sofia Santos Costa – 6 hours

Intended learning outcomes (knowledge, skills and competences to be developed by the students):

At the end of the Curricular Unit, students should:

1. Understand the classification and evolution of fungi, the importance of these organisms as disease causative agents and the strategies and difficulties associated with their treatment.
2. Demonstrate how to perform laboratory diagnosis of the main fungal infections.
3. Critically discuss the advantages and limitations of laboratory diagnosis strategies currently available in medical mycology.

These objectives are aligned with a teaching methodology that combines theoretical lectures with practical laboratory classes, promoting the acquisition of fundamental concepts and the development of technical skills essential for mycological diagnosis and the application of knowledge.



Syllabus:

Theoretical contents:

1. Importance of fungi in Nature, in the food and pharmaceutical industry, and as disease causative agents in plants and animals.
2. Taxonomy and nomenclature of fungi. Fungal physiology, metabolism and cell structure. The human mycobiome.
3. Brief history of medical mycology. Epidemiology, pathogenesis and immunology of fungal infections. Clinically relevant fungi. Strictly superficial, cutaneous, subcutaneous and systemic mycoses. Opportunistic mycoses.
4. Biosafety and quality control in a medical mycology laboratory. Collection and processing of biological samples. Microscopy and culture of fungal organisms. Histopathological, radiological and serological methods for diagnosis of fungal infections.
5. Brief introduction to molecular methods in laboratory mycological diagnosis.

Practical contents:

1. Identification of macroscopic and microscopic characteristics of filamentous fungi and yeasts.
2. Determination of susceptibility to antifungal agents.

Teaching/learning methodologies articulated with pedagogical model:

The teaching methodologies consist of theoretical classes taught using an expository method, encouraging interaction and dialogue with students. The concepts learned in theoretical classes will be applied in practical classes, where students should work individually or in group in the identification of macro and microscopic morphological characteristics, culture of fungal organisms and antifungal susceptibility test.

Assessment:

Students with at least 2/3 of attendance will be evaluated by a written exam with multiple-choice questions about the contents of theoretical and practical classes (100% of the final evaluation). Students with a minimum evaluation of 9.5 values (evaluation scale between 0 and 20 values) will be approved.

References for consultation / mandatory existence:

- Barroso H., Meliço-Silvestre A., Taveira N. (Eds.) (2014). *Microbiologia Médica* (Vol. 2). Lidel, Lisboa.
- Kauffman C.A., Pappas P.G., Sobel J.D., Dismukes W.E. (Eds.) (2011). *Essentials of Clinical Mycology*. Springer-Verlag, New York.
- Kibbler C.C., Barton R., Gow N.A.R., Howell S., Maccallum D.M., Manuel R.J. (Eds.) (2017). *Oxford Textbook of Medical Mycology*. OUP Oxford, Oxford.
- Reiss E., Shadomy H.J., Lyon G.M. (Eds.) (2012). *Fundamental Medical Mycology*. Wiley-Blackwell, New Jersey.