

Course Unit	Clinical and Laboratorial Parasitology, Mycology and Virology	Field of study	Biomedical Laboratory Sciences
Bachelor in	Biomedical Laboratory Sciences	School	School of Health
Academic Year	2022/2023	Year of study	2
Type	Semestral	Semester	1
Level	1-2	ECTS credits	5.0
Code	9995-550-2105-00-22		
Workload (hours)	135	Contact hours	T - , TP 22,5 PL 30 TC - , S - , E - , OT 7,5 O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Angela Maria Pais Rodrigues

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Understand the importance of viruses as agents of infection in humans.
2. To understand the pathogenesis of viral infections, prevention and treatment.
3. Acquire knowledge necessary for laboratory diagnostics in virology.
4. Understanding the pathogenesis of fungal infection and the resources available for prevention and treatment.
5. Acquire the knowledge needed for the handling and identification of fungi in the laboratory.
6. Analyze and understand the life cycles and transmission mechanisms to the man of the most prevalent parasitic diseases.
7. Acquire knowledge to know the laboratory diagnosis indicated for the world's major parasitoses.

### Prerequisites

Not applicable

### Course contents

General properties of the virus; laboratory diagnosis and treatment of the most important virus in human pathology. General characteristics of the fungal cell; most important fungal infections in humans; techniques of laboratory diagnosis: isolation and identification. Parasite-host relationship; study of protozoa and helminths with medical-sanitary interest and respective parasites; techniques of laboratory diagnosis in parasitology.

### Course contents (extended version)

1. Virology
  - General properties of viruses: structure, multiplication and taxonomy.
  - Mechanisms of Viral Pathogenesis
  - Forms of prevention (passive immunization and active immunization).
  - Antiviral agents used in clinical practice
  - The different viral families and the most important viruses in human pathology.
  - The most important viruses in human pathology.
2. Practical Laboratory Virology.
  - Brief theoretical and practical considerations on the laboratory diagnosis of viral infections
  - Application of laboratory techniques, to virological diagnosis.
  - Analysis and discussion of results of real clinical cases
3. Micology
  - Structural and physiological characteristics of the fungic cell, its taxonomy and multiplication.
  - Pathogenesis of fungic diseases.
  - The main groups of fungi and the most important fungi in human pathology.
  - The role of fungi in the biological and biotechnological World.
  - Fungicide used in medical practice.
4. Mycology-laboratory practices.
  - Brief considerations on laboratory diagnosis of fungic infections.
  - Application of fundamental mycological techniques, sowing, isolation and identification
  - Antifungic susceptibility tests
5. Parasitology
  - Introduction to parasitology: host-parasite relationship; taxonomic classification
  - Pathogenesis of parasitic diseases.
  - Studies of protozoa and helminths with medical-sanitary interest and respective parasites.
  - Antiparasitic agents
6. Parasitology laboratory practices
  - Macro and microscopic study of the morphology of parasitic forms
  - Other laboratory diagnostic techniques in parasitology.

### Recommended reading

1. Murray P, Rosenthal K, Kobayashi G, Pfaller M. ( 2009). Microbiologia Médica. Elsevier Editora Ltda. Brasil.
2. Cowan M. K. (2012). Microbiology Fundamentals: A Clinical Approach. McGraw Education.
3. Wigg D. M. , Romanos M. T. V. , Santos N. S. O. (2012). Virologia Humana. Guanabara Koogan. Brasil.
4. Pádua M. (2011). Patologia clínica para técnicos - Bacteriologia. LUSOCIÊNCIA Edições técnicas e científicas, Lda. Loures.
5. Anaisse E. J. McGinnis M. R. , Pfaller M. A. (2009). Clinical Mycology. Elsevier Health Sciences.

### Teaching and learning methods

Lectures using powerpoint presentations. Lectures notes deposited in the e-learning resources. Practical classes - Realization of practical laboratory. Discussion of clinical cases and research papers. .

### Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 50% ((Theoretical component in written exam. For approval minimum grade of 8, 5 values))
  - Final Written Exam - 30% ((Practical component in written exam.)
  - Presentations - 20% ((Accomplishment of work with oral presentation))
2. Alternative 2 - (Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 60% ((Theoretical component in written exam. For approval minimum grade of 8, 5 values))

**Assessment methods**

- Final Written Exam - 40% ((Practical component in written exam. For approval minimum grade of 8, 5 values))

**Language of instruction**

Portuguese, with additional English support for foreign students.

**Electronic validation**

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31-10-2022	31-10-2022	03-01-2023	07-01-2023