Course Unit	Clinical and Laboratorial Microbiology II			Field of study	Biomedical Laboratory Sciences								
Bachelor in	Biomedical Laboratory Sciences			School	School of Health								
Academic Year	2023/2024	Year of study	2	Level	1-2	ECTS credits	5.0						
Type	Semestral	Semester	2	Code	9995-804-2204-00-23								
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): Joao Pedro Afonso Rodrigues, Sandra Isabel Nunes Pinto, Viviana Andreia dos Santos Gonçalves

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
Acquiring knowledge of bacterial characteristics (morphological, physiological, biochemical, molecular). Run and interpret methods of identification of microorganisms .

Prerequisites

Before the course unit the learner is expected to be able to:
Not applicable.

Course contents

The content of the course includes the following topics: Study of the main bacterial etiological agents of human infections; Study of the main antibacterial agents; Study of infections associated with health care (IACS); Multidrug - resistant present and future.

Course contents (extended version)

1. Study of the main bacterial etiological agents of human infections.
   - Nocardiacea, M. tuberculosis, M. bovis and M. africanum. Others mycobacterias
   - a) Intracellular bacterial agents not cultivable Chlamydia trachomatis and Rickettsia
   - b) Bacteria without wall - Mycoplasma and Ureaplasma
   - c) Spirochetes: Treponema, Borrelia and Leptospira
   - Legionella
   - The role of bacteria in the disease
2. Study of the main antibacterial agents:
   - inhibitors of cell wall synthesis
   - Inhibitors of protein synthesis
   - Inhibitors of nucleic acid
   - Antimetabolites and other antibiotics
3. Study of infections associated with health care (IACS)
   - IACS epidemiology
   - Sources of infection
   - Potential for transmission
   - Location of infections
   - Prevention and control of IACS
   - Epidemiological surveillance of IACS
4. Multidrug - resistant present and future
5. Laboratory Programme
   - Isolation and identification-Mycobacterium tuberculosis complex
   - Serodiagnostic
   - urinary/urine sediment type
   - Susceptibility to antimicrobials tests (ATB)
   - Molecular methodologies to identify and characterize bacterial

Recommended reading

1. Murray P, Rosenthal K, Kobayashi G, Pfaller M. (2009). Microbiologia Médica. Elsevier Editora Ltda. Brasil.
2. Sousa J C. (2001). Antibióticos anti-bacterianos. Publicações Farmácia Portuguesa.
3. Pádua M. (2011). Patologia clínica para técnicos - Bacteriologia. LUSOCIÊNCIA Edicões técnicas e científicas, Lda. Loures.
4. Cowan M. K. (2012). Microbiology Fundamentals: A Clinical Approach. McGraw Education.
5. Sousa J. C. (2005). Manual de Antibióticos Antibacterianos. Universidade Fernando Pessoa- Gráficos Reunidos - Porto.

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

- Overall Evaluation 1 - (Regular, Student Worker) (Final, Supplementary, Special)
   - Final Written Exam - 60% (Evaluation of theoretical written exam. To get approval minimum grade 8, 5 values.)
   - Final Written Exam - 40% (Practical component in practical and written exam. To get approval minimum grade 8, 5 values.)

Language of instruction

Portuguese

Electronic validation

Joao Pedro Afonso Rodrigues, Sandra Isabel Nunes Pinto, Viviana Andreia dos Santos Gonçalves	Maria José Gonçalves Alves	Luis Migue Fernandes Nascimento	Adília Maria Pires da Silva Fernandes
15-05-2024	12-06-2024	12-06-2024	16-06-2024