INSTITUTO POLITÉCNICO DE BRAGANÇA

Course Unit	Clinical and Laboratorial Microbiology II			Field of study	Biomedical Laboratory Sciences		
Bachelor in	Biomedical Laboratory Sciences			School	School of Health		
Academic Year	2022/2023	Year of study	3	Level	1-3	ECTS credits	5.0
Type	Semestral	Semester	2	Code	9995-550-3206-00-22		

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): Joao Pedro Afonso Rodrigues

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	Josiana Adelaide Vaz	Juliana Almeida de Souza	Adília Maria Pires da Silva Fernandes
18-06-2023	18-06-2023	28-06-2023	28-06-2023