

MICROBIOLOGY I

Code: 0304 Curricular Year: 2nd Semester: 3rd Compulsory Credits: 5.0 ECTS

Lecturer(s): Profs Drs. Luis Tavares, Manuela Oliveira, Ricardo Bexiga, Eva Cunha

1. Contact hours:

Lectures 28 Practicals 28 Total 56

2. Objectives:

Students must acquire the concept and recognize the different types of microorganisms, understand and discriminate aspects of bacterial and fungal biology, evaluate the relevance of indigenous microbiota and recognize the importance of bacteria and fungi in pathological and technological processes. Students must develop competencies of manipulating laboratory instruments and substrates or samples bearing bacteria and fungi, be able to plan and perform bacteriological and micological analysis, have the basic knowledge to critically read scientific articles and write technical reports.

3. Programme:

Theoretical: Introduction to microbiology, ultrastructure of prokaryote cell, bacterial ecology, mechanics of pathogenicity, non-specific defences against microbial aggression, relevant bacterial genus in Veterinary Medicine (normal microbiota, genus and species with medical, environmental and technological interest); fungi ecology, relevant fungus in Veterinary Medicine (genus and species with medical, environmental and technological interest).

Practical – Microbial ubiquity – control of microorganisms physical and chemical agents, simple and differential stains. Clinical bacteriology – based on “clinical cases” of infection, culture, isolation, identification and antibiotic testing of aerobic and anaerobic bacteria. Food and environmental bacteriology – based on “real cases”, bacterial quantification techniques, identification and quantification of specific bacteria. Clinical, food and environmental mycology – based on “real cases”, general and specific culturing techniques for fungus, use of identification keys.

4. Bibliography:

Prescott's Microbiology. Joanne Willey, Linda Sherwood, Chris Woolverton. 11^a edição 2019 (ISBN-978-1-260-21188-7).

Fundamentals of Mycology. J.H. Burnett. 2^a Edição. Edward Arnold, London, U.K. 1976 (ISBN 0-7131-2617-5).

Clinical Veterinary Microbiology E-Book; 2^a Edição (2013) Bryan Markey; Finola Leonard; Marie Archambault; Ann Cullinane; Dores Maguire; Publisher: Mosby Ltd. (UK); ISBN: 9780723432371, 0723432376; ISBN: 9780723432371, 0723432376 ; eText ISBN: 9780702055881, 0702055883eText ISBN: 9780702055881, 0702055883

5. Assessment:

Theoretical – Written exam. Practical – Continuous evaluation of practical work and final written exam.