

Course Unit: 15726 – Applied Microbiologie I

Year 2 Semester 4 ISCED Code: 510 ECTS: 5.0

Type of Course Unit: Compulsory Delivery Mode: Face-to-face Language of Instruction: Portuguese

COURSE COORDINATOR: Olga Maria Reis Pacheco de Amaral

HOURS OF WORK

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
125	15	45	0	0	0	0	0	0	65

Prerequisites (if applicable): Not applicable

LEARNING OUTCOMES (knowledge, skills and competence)

Acquisition of theoretical knowledge in food microbiology.

Acquisition of fundamental knowledge and practical execution in laboratory techniques of food microbiology.

Acquisition of skills and competences that allow to relate theoretical knowledge of food microbiology with its safety, quality and hygiene.

Application of microbiological methods of sampling, research, quantification and identification of microorganisms in food and food environments (equipment, surfaces, utensils and manipulators). Interpretation of results obtained in microbiological controls based on legal limits or established in appropriate bibliography.

Application of preventive and corrective actions regarding harmful microbial actions.

CONTENTS

Safety and good practices in food microbiology laboratories.

Main techniques of research, counting and microbial identification applicable to food control.

Microbiological criteria. Indicator microorganisms. Microbiological control of food and the food environment.

Microbiology of food. Food as a microbial substrate. Origin of microorganisms in food.

Microbial food-borne diseases.

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

This UC intends that students understand the microbiology of food and the food environment and the factors that affect them in terms of quality, safety and hygiene. It is also intended to enable students to assess the quality and safety of food products and the food environment.

TEACHING METHODOLOGIES

Digital presentation of theoretical concepts.

Individual research on topics to be followed by the creation of discussion groups.

Practical classes for the execution of techniques for microbiological control of food products and the food environment.

Treatment and interpretation of results of microbiological control of food products and the food environment.

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

In this UC, and according to the various themes, there will be lectures and discussion classes on topics previously prepared by the students. Practical practical classes allow students to be given the usual techniques in food microbiology. After the treatment and interpretation of results, the identification of preventive and corrective actions will be followed in order to guarantee the quality and safety of food products.

EVALUATION METHODS

Preparation of reports of the practical work carried out.

Conducting theoretical tests throughout the semester and / or at the end of the semester. The minimum mark in each test is 9.5 points.

The final evaluation will be weighted considering the participation in the activities developed in the classes, in the practical reports and in the theoretical tests.

MAIN BIBLIOGRAPHY

ADAMS, M. R., MOSS, M. O., McCLURE, P. J., 2016, Food Microbiology, Ed. RSC

FERREIRA, W. F. C., J. C. SOUSA, 2010, Microbiologia, Ed. Lidel

JAY, J. M. et al., 2005, Modern Food Microbiology, Ed. Springer Science and Business Media.

JAY, J. M. et al., 2009, Microbiologia moderna de los Alimentos, Ed. Acribia.

LACASSE, D., 1998, Introdução à Microbiologia Alimentar, Instituto Piaget

MOSSEL, D. A. A. et al, 2003, Microbiologia de los Alimentos. Fund. ecológicos para garantizar y comprobar la inocuidade y calidad de los alimentos, Ed.Acribia.

TORTORA, G. J., B. R. FUNKE e C. L. CASE, 2007, Introduccion a la Microbiologia, 3ª ed., Ed. Acribia

Legislation, Regulations and Norms applicable.

Year of implementation: 2017/2018 | Date of approval by the Technical-Scientific Board: 2016-07-27