

Course Unit: 935018 - Food microbiology

Year 2 Semester 3 ISCED Code: 721 ECTS: 5.5

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

COURSE COORDINATOR: Maria Teresa Pereira Gonçalves dos Santos

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	
137.5	30	45							62.5

Prerequisites (if applicable): Not applicable.

LEARNING OUTCOMES (knowledge, skills and competence)

At the end of the course, in general, the student must be able to ensure a microbiological quality of any kind of food so as to implement methodologies and laboratory techniques for microbiological quality control of foods. To this should know:

- The meaning of Microbiological Quality of food.
- Discriminate and evaluate microbiological hazards associated with each food group.
- Implement security systems and preventive and corrective measures to ensure the microbiological quality of the product.
- General and specific rules in performance of a laboratory for microbiological analysis of food and water.
- General and specific rules in sampling of food, water and environment for microbiological evaluation.
- Laboratory techniques for identification, search and quantification of various microorganisms important in food industry.

CONTENTS

1. Contamination and deterioration of the different food groups. 2. Factors affecting the microbial growth in food. 3. Food preservation. 4. Microorganisms as agents of food poisoning and infections. 5. Hygiene and safety in the food industry and catering. 6. Control of microbiological quality of food and of the food environment.

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

With the syllabus presented is intended to provide the student of Food Technology with applied and general knowledge about microbial contamination of foods and factors affecting the same. With this knowledge the student can achieve the proposed objectives, ie, evaluate, control and prevent the risks of microbial contamination of food, in order to preserve the quality and safety of food and thus act consciously in the performance of their profession.

TEACHING METHODOLOGIES

- Lectures.
- Practicing the research on proper bibliography (Standards, Legislation, Books, Magazines) for microbiological criteria and reference values for each type of food.
- Installation and realization of techniques for the assessment of microbiological quality of different food groups after search at adequate bibliography.
- Carrying out monitoring reports of the evaluation of microbiological quality of different types of food and water.

- Individual research on each topic followed by the creation of discussion groups.
- Discussion of scientific papers related to the subjects covered.

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

The acquisition of knowledge by the student through the teaching methodologies proposed, is only perceptible if the student knows expose in an acceptable form, both writing and orally, the themes into question. It is therefore considered that the written tests, theoretical and practical, in which the student demonstrates knowledge of the subject inquired, as well an oral discussion of various issues, confirm that the student can develop and expose the matter under study and constitute a coherent methodology for the objectives of the CU.

EVALUATION METHODS

- Assiduity and participation of students in the activities proposed.
- Evaluation reports.
- Realization of practical tests.
- Realization of a final theory test.

MAIN BIBLIOGRAPHY

- ADAMS, M. R., MOSS, M. O., 2008, Food Microbiology, Ed. RSC.
- FRAZIER, W. C. e WESTHOFF, D. C., 1991, Food Microbiology, Ed. Acribia.
- HAYES, P. R., 1993, Microbiology and Food Hygiene, Ed. Acribia.
- JAY, J. M. et al., 2005, Modern Food Microbiology, Ed. Springer Science and Business Media.
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- LACASSE, D., 1998, Introduction to Food Microbiology, Instituto Piaget.
- MOSSEL, D. A. A. et al, 2003, Food microbiology. Ecological basis to ensure and check the safety and quality of food, Ed.Acribia.
- PARRY, T. J. e PAWSEY, R. K., 1990, Principles of Microbiology for Students of Food Thechnology, 2ª ed., Hutchinson.

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