

<b>Course:</b>	L025 - Food Quality and Nutrition
<b>Degree:</b>	Bachelor
<b>Curriculum Unit:</b>	9087014 - Quality and Food Safety
<b>Scientific field:</b>	Food Science and Technology
<b>ECTS<sup>(*)</sup>:</b>	5
<b>Curriculum year:</b>	2nd
<b>Curriculum semester:</b>	2nd
<b>Frequency Regime:</b>	Mandatory
<b>Teacher(s):</b>	Paula Maria dos Reis Correia
<b>Contact hours <sup>(**)</sup>:</b>	T - 30; TP - 15; P - 15
<b>Total work time (hours):</b>	138

(\*) - ECTS - European Credit Transfer and Accumulation System

(\*\*) – T- Theoretical; TP- Theoretical/Practical; LP- Lab Practice; S- Seminars; I- Internships; TU - Tutorials; O- Other (Evaluations)

## Objectives / Competences

To describe the basis and objectives of food quality and hygiene, to learn about food safety and quality, to identify and handle the tools and content related to health and safety of food products; to apply contents covered in a real context based on the existing legislation on quality and hygiene related to food products. At the end of this course of study, students will have up-to-date knowledge on quality, hygiene and food safety and will be able to integrate the material taught in a business context in a dynamic and active manner, providing a further development to food businesses, to ensure the quality and hygiene of food under the current legislation.

## Syllabus

### Theoretical Component

1. Concepts
2. Management systems for food security (NP EN ISO 22000:2005)
3. Hygiene and Food Safety: Codex Alimentarius / Generalities HACCP
4. Influence of hygiene and sanitation practices on quality control
5. Prerequisites for HACCP
6. System HACCP
7. Traceability
8. HACCP auditing
7. Legislation

### Practical component

1. Microbiological quality of food
2. Indices of microbiological quality of food

3. Research and estimation of microbiological indicators of food quality
  - 3.1. Preparation of samples for microbiological analysis (homogenization of solids)
  - 3.2. Enumeration of "total" aerobic microorganisms
  - 3.3. Research on coliforms
  - 3.4. Research and estimating the number of enterococci and sulfite-reducing clostridia
4. Microbiological monitoring of surfaces
5. Preparing a manual of best practices and hygien

#### **Teaching methodologies and evaluation criteria**

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This curricular unit will be taught under the b-learning system with classes of a theoretical and practical nature. Class work includes theoretical and practical lessons and practical classes in the laboratory. The theoretical component is based on the exposure to the material in classes taught by e-learning. The practical component will be held in the laboratory where students will conduct microbiological testing of various food products, taking into account the current legislation. The evaluation of the course consists of a final written examination on the knowledge acquired in the more theoretical aspects, a real simulation assignment in groups that includes the various plans for quality, safety and hygiene, with presentation and discussion, and a report of work done in the practical component also carried out in groups.

#### **Short bibliography**

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Contreras, C.A., Bromberg, R., Cipolli, K.M.V.A.B., Miyagusku Higiene e sanitização nas indústrias de alimentos, São Paulo, Livraria Varela. 2002.

Silva Junior, E.A. Manual de controle higiênico e sanitário em serviços de alimentação. Livraria Varela, 6ª Edição. 2005.

Trigo, V.C. Manual prático de higiene e sanidade nas unidades de alimentação e nutrição. Livraria Varela. 1999.

Mortimore, S., Wallace, C. HACCP. A practical approach. Ed. Chapman & Hall. London. 1994.

Zeuthen P., Bøgh-Sørensen L. Food Preservation Techniques. Woodhead Publishing, 2003.

Hester, R.E. and Harrison, R.M. Food safety and food quality. Royal Society of Chemistry, RSC publishers. 2001.

Will, M. and Guenther, D. Food quality and safety standards. Ed. Deutsche Gesellschaft fuer GTZ. 2007.

Alli, I. Food Quality Assurance: principle and practices. CRC Press. 2012.

Emerging technologies for food quality and food safety evaluation. CRC Press. 2011.