

Course Unit	Option II	Field of study	-																		
Master in	Technology and Animal Science	School	School of Agriculture																		
Academic Year	2015/2016	Year of study	1	Level	2-1																
Type	Semestral	Semester	2	ECTS credits	6.0																
Workload (hours)		162	Contact hours	<table border="1"> <tr> <td>T</td><td>30</td> <td>TP</td><td>-</td> <td>PL</td><td>26</td> <td>TC</td><td>-</td> <td>S</td><td>4</td> <td>E</td><td>-</td> <td>OT</td><td>20</td> <td>O</td><td>-</td> </tr> </table>		T	30	TP	-	PL	26	TC	-	S	4	E	-	OT	20	O	-
T	30	TP	-	PL	26	TC	-	S	4	E	-	OT	20	O	-						
<small>T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other</small>																					

Name(s) of lecturer(s) Elsa Cristina Dantas Ramalhosa, Vitor Manuel Ramalheira Martins

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

- To know the national and European legislation related to issues of food safety and hygiene;
- To establish and monitor the compliance of the Prerequisite Programs in its various forms, as well as the associated records;
- To know the main active compounds used in cleaning and disinfection activities in the Agrifood sector;
- To choose the cleaning and disinfection agents appropriate to specific situations;
- To understand the importance of Good Practices in the Agrifood Sector and to know Good Practices of Hygiene and Manufacturing at catering and food businesses.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Knowledge on food chemistry and toxicology, as well as on microbiology.

### Course contents

- Importance and implementation of Prerequisites programs; - Importance and establishment of Good Practices Codes of Personal Hygiene and Manufacturing; - Cleaning and disinfection (main active principles of cleaning and disinfection; action mode of several detergents and disinfectants).

### Course contents (extended version)

- National and European legislation related to food safety and hygiene issues;
- To establish and verify the compliance of Prerequisite Programs
  - Construction and location of the facilities. Principles of hygienic design;
  - Ventilation and lighting;
  - Maintenance Plans - Corrective and preventive actions; Equipment;
  - Traceability systems, reporting and collection;
  - Waste management;
  - Pest control;
  - Training plans;
  - Water quality control and analytical control.
- Cleaning and disinfection
  - - Cleaning;
  - - Detergents: action mechanisms, constituents of the detergents e detergent formulation /choice;
  - - Disinfection: types of disinfectants, action mechanisms and physico-chemical data;
  - - Combination of cleaning and disinfection. Cleaning and hygiene plans.
- Good Practices Codes of Personal Hygiene;
- Good Practices of Manufacturing at the level of catering and food businesses
  - Food production, reception, storage, processing and distribution;
- 4C's methodology to be applied to micro and small enterprises.

### Recommended reading

- Legislação Nacional e Europeia (Pacote Higiene) associada à Higiene e Segurança Alimentar;
- Códigos de Boas Práticas publicados por associações do setor agroalimentar;
- Marriot N. G. (2003). Principios de higiene alimentaria, Editorial Acriba, Zaragoza;
- Lelieveld H. L. M. , Mostert M. A. , White B. and Holah B. (2003). Hygiene in Food Processing: Principles and Practices. Woodhead Pub. Inc. Abington, Cambridge, U. K. ;
- Leveau, J. Y. and Bouix M. (1999). Nettoyage, désinfection et hygiène dans les bio-industries. Collection Sciences & Techniques Agroalimentaires. Editions TEC.

### Teaching and learning methods

Theoretical and theoretical-practical lessons: based primarily on expository and active methods, but also occasionally using the interrogative method. Theoretical-practical lessons: group activities and study visit to a food processing company.

### Assessment methods

- Evaluation I - (Regular, Student Worker) (Final, Supplementary)
  - Final Written Exam - 80% (Final exam on the subjects taught.)
  - Practical Work - 20% (Written works and presentations made by the students.)
- Evaluation II - (Student Worker) (Final, Supplementary)
  - Final Written Exam - 100% (Final exam on the subjects taught.)

### Language of instruction

Portuguese, with additional English support for foreign students.

## Electronic validation

Elsa Cristina Dantas Ramalhosa, Vitor Manuel Ramalheira Martins	Vitor Manuel Ramalheira Martins	José Carlos Batista Couto Barbosa
19-12-2015	22-12-2015	22-12-2015