

ACADEMIC YEAR: 2016/2017

COURSE: ***Evaluation and management quality in food industry: module of quality and plant sanitation***

ACADEMIC YEAR: 2016/2017

TYPE OF EDUCATIONAL ACTIVITY: Characteristic

TEACHER: Fernanda Galgano

e-mail: fernanda.galgano@unibas.it

phone: +39-0971-20-5570

ECTS: 6 (4 Lectures + 1 practicals)	n. of hours: 56 (40 h lesson and 16h tutorials/practice)	Campus: Potenza Dept./School: Scuola di Scienze Agrarie, Forestali, Alimentari ed Ambientali (SAFE) Program: Food Technology	Semester: II
-------------------------------------	--	--	--------------

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course aims to provide knowledge about quality management systems, safety and traceability applied to food industries. The aim will be treated the rules concerning the implementation of the company's quality and environmental systems, product certification and obtaining of protected traditional names, as well as rules regarding the food safety. The course is also aimed at providing students with the knowledge useful to enable the correct handling of food production lines, in order to avoid that they themselves cause food contamination in the works or because of inefficiency of applied technological processes.

The main provided knowledges are :

Quality and safety of food products. Evolution of the concept of quality and food law recalls. Management systems for quality ISO 9001: 2015; designing a quality system. Management systems for food safety according to UNI EN ISO 22000 and international Kosher, Halal, BRC and IFS. The process and product certification: standardization and accreditation. Environmental Management Systems: Standards of series UNI EN ISO 14000 Traceability in the food industry: UNI EN ISO 22005: 2008. The sanitary problems in the food industry. The agents and the contamination vectors. Cleaning and sanitizing. The detergents: anionic, cationic, non-ionic. The complementary products. The biodegradability of detergents. The thermal disinfection. The chemical sanitizing: chlorine-based compounds; iodine; quaternary ammonium compounds; peroxides. Pest control. Water impurities and associated problems. Treatments of the water for use in cleaning and sanitation. The polluting power of sanitizing. Characteristics of food waste. Characteristics of the surface. Methods, equipment and sanitizing operations of production facilities. Cleaning and sanitizing in the milk industry. Sanitation in the preservation industry. Cleaning and sanitizing in the wine industry. Sanitation in the meat industry. Cleaning and sanitizing in the fruit juices. Sanitation in bottling lines. Waste disposal.

At the end of the course students will be able to:

- understand the issues of the leading food industry transformation processes, considering how teaching unit the process-product combination;
- identify existing technological conditions to be applied at every stage of a production process in order

to optimize the quality of finished products;

- interpret the relationship between the composition and processing of the product;
 - know the relationship between the properties and characteristics of the materials used for the packaging of food products, as well as leading food packaging techniques.

PRE-REQUIREMENTS

To understand the material presented in this course the following knowledge and skills are needed: food processing technologies.

SYLLABUS

The group is divided in 6 teaching blocks.

Block 1. (8h, lectures)

General knowledge of the regulations concerning the implementation of quality systems for the design of a industrial quality system.

Block 2. (8h, lectures)

Specific knowledge of management systems for food safety according to UNI EN ISO 22000, environmental management systems standards such as UNI EN ISO 14040. Traceability in the food industry: UNI EN ISO 22005: 2008 standard.

Block 3. (8h, lectures)

Specific knowledge of international product certification Kosher, Halal, BRC, IFS and DPO standard.

Block 4. (8h, lectures)

Problems relating to the microbiological quality of finished food products and general information about the compounds used for the sanitation of the equipments.

Block 5. (8h, lectures)

Sanitation of plants of the main food industries.

Block 9. (16h, Practical activity)

The student will deepen the study regarding the hygiene problems of a specific equipment of food production, acquires data and information to develop a detailed plan for cleaning and disinfection company. A seminars with certification experts, within the food industry and catering have also been planned.

TEACHING METHODS

The course is based on 56 teaching blocks and it includes 40 h lectures and 16 h practical tutorials, concerning exercises in the classroom regarding numerical and technical visits to food industries and food packaging. There will be some in-depth seminars on specific topics taught by experts in the food field.

EVALUATION METHODS

The aim of examination is to verify the student achieved skills as previously listed.

The examination consists in an oral presentation and regards the various topics discussed and dealt with during the course. The exam may also provide for the preparation of an elaborate in-depth written about a topic previously agreed with the teacher, treated during the course and in his oral argument in the examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

The course material is constituted of selected material from reference textbooks and handouts in electronic format stored on a document cloud which will made accessible to the students.

The recommended textbooks, to further deepen the topics covered in the course, are the following:

1. Peri, C., Lavelli, V. (2004). *Qualità nelle aziende e nelle filiere agroalimentari*, Hoepli
2. Tateo, F. (1977). *Detergenza e sanificazione nell'industria alimentare*. Edizioni AEB, Brescia.
3. Marriot, N.G. (1997). *Essentials of food sanitation*. Chapman & Hall, U.S.A.
4. Hui, Y.U., Bruinsma, B.L., Gorham, J.R., Wai-Kit, N., Phillip S. Tong, P.S., Ventresca, P. (2003). *Food Plant Sanitation*. Marcel Dekker, Inc., New York, U.S.A.

INTERACTION WITH STUDENTS

At beginning of the course the lecturer will explain to students the pre-requirements needed, the educational goals, the expected learning outcomes, the course syllabus (structure/organization), the evaluation methods and the reference textbooks. Subsequently the students who will attend assiduously the course are asked for their surname, name, telephone number, registration number and E-mail. After each lecture, related documents in electronic format will be available on a document cloud accessible to the students.

The lecturer will be available to receive students on Monday (16.20-18.30), Wednesday (11.30 13.30) and Tuesday (16.30-18.30) in her study and/or even in other days, preferably after an E-mail contact.

EXAMINATION SESSIONS (FORECAST)¹

16/02/2017, 16/03/2017, 13/04/2017, 11/05/2017, 15/06/2017, 13/07/2017, 14/09/2017, 12/10/2017, 9/11/2017, 14/12/2017, 18/01/2018, 15/02/2018

EVALUATION COMMITTEE

Prof.ssa Fernanda Galgano (President), Dott.ssa Marisa C. Caruso (member), Prof.ssa Annamaria Ricciardi (replacement member)

SEMINARS BY EXTERNAL EXPERTS SI X NO

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.