SCUOLA DI SCIENZE AGRARIE, FORESTALI, ALIMENTARI ED AMBIENTALI

ACADEMIC YEAR: 2017/2018

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

ACADEMIC YEAR: 2016/2017	
TYPE OF EDUCATIONAL ACTIVITY: Characteristic	
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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.

Knowledge and understanding Knowledge of 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. Knowledge of process and product certification: standardization and accreditation. Knowledge of environmental management systems: Standards of series UNI EN ISO 14000 Traceability in the food industry: UNI EN ISO 22005: 2008. Knowledge of 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. Knowledge of pest control. Water impurities and associated problems. Knowledge of treatments of the water for use in cleaning and sanitation. The polluting power of sanitizing. Characteristics of food waste. Characteristics of the surface. Knowledge and understanding of 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. Knowledge of waste disposal.

Applying knowledge and understanding Ability to design and evaluate a "Management Quality System" that complies with specific regulations. Ability to understand the basic principles and practices used for cleaning and sanitation of food process equipment. Ability to draw up specific detergent and sanitation plans for the main food industries, depending on the diversity of raw materials and the type of residues of processing plants.

Making judgements Ability to propose the most appropriate certification system depending on the company's reality. Ability to identify the most suitable detergent and sanitizer type according to the considered food industry.

Communication skills Ability to communicate the importance of system or product certification applied to a certain company. Ability to communicate the importance of the impact of an adequate sanitation process on the hygiene and food safety. Ability to interact and communicate with food business operators in the development and implementation of of quality management systems. Ability to communicate with representative of food safety agencies, official control agencies and quality certification agencies and during quality system audits.

Learning skill Ability to access, document and interpret data related to management quality system applied to a certain company, chain or product, as well as a sanitizing process applied to a certain food industry. Ability to document the standards of food quality systems and sanitation, by using technical and scientific literature.

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]

15/02/2018, 15/03/2018, 12/04/2018, 17/05/2018, 14/06/2018, 19/07/2018, 20/09/2018, 18/10/2018, 15/11/2018, 13/12/2018, 19/01/2019, 15/02/2019

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.