
COURSE: AGR0279 - Quality Management and Certification

ACADEMIC YEAR: 2019/2020

TYPE OF EDUCATIONAL ACTIVITY: Characteristic

TEACHER: Prof.ssa Fernanda Galgano and Dr. Nicola Condelli

e-mail: [fernanda.galgano@unibas.it/](mailto:fernanda.galgano@unibas.it)
nicola.condelli@unibas.it

website:

phone: +39-0971-20-5570/; +39-0971-20-5571

Language: English

ECTS: 6 (5 Lectures +1 tutorials/practice)	n. of hours: 56 (40h lectures + 16h practicals)	Campus: Potenza School: School of Agricultural, Forestry, Food and Environmental Sciences Program: Master degree in Food Science and Technology	Semester: I
--	--	--	-------------

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course is focused on quality management systems, safety and traceability applied to food industries. In particular, it will concern 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. Particular emphasis is also on the application of Hazard Analysis Critical Control Point (HACCP) to food production with the aim of producing quality food that meets consumer expectations and the highest of hygiene and safety standards. The course also aims to provide the concepts and methods to be followed to implement a quality management system in the food industry and in food analysis laboratories and aims to develop the skills to work as part of a company team involved in the development and /or design of an integrated management system according to current regulations.

Knowledge and understanding: Quality and safety of food products. Evolution of the concept of quality and food law recalls. Knowledge of the operation of standardization, accreditation and system and product European and International certifications and the main certification schemes currently required by the international market (voluntary and regulated). Knowledge of the basic elements, supported by International standards, in relation to the concept of food quality and control, Quality Assurance and Management, in order to understand and implement the basic process control models and their interactions within of a business system. Knowledge of Management systems for quality ISO 9001:2015; designing a quality system. Knowledge of Management systems for food safety according to UNI EN ISO 22000:2018 and for laboratories (ISO/IEC 17025), international Kosher, Halal, BRC and IFS, organic and NO-GMO certifications. 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 a sampling plan for the verification of product's conformity in compliance with Community regulations. Knowledge of food labeling.

Applying knowledge and understanding: Ability to identify and interpret the needs of the market regarding the quality of agro-food products and related services; to understand the evolution of the meaning of the term "quality" in the agri-food industry; to know the main regulatory tools for Quality Management, food safety and product valorisation and the significance of related certifications. Ability to design and evaluate a "Management Quality System" that complies with specific regulations. Ability to develop and manage own-checks plans according to HACCP method.

Making judgements: Ability to identify the basic elements required in a laboratory or in a company to

implement a quality assurance program. Ability to propose the most appropriate certification system depending on the company's reality. Ability to identify the most effective tools to assure the food safety, on the basis of production process and the criteria established by current legislation.

Communication skills: Ability to analyse and communicate the issues relevant to a food quality management systems for a certain company. Ability to interact and communicate with food business operators in the development and implementation 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. Ability to effectively communicate to food operators the importance of proper management and handling of foods to prevent risks for consumer health.

Learning skill: Ability to access, document and interpret data related to management quality system applied to a certain company, chain or product. Ability to document the standards of food quality systems, by using technical and scientific literature. Ability to collect and interpret data from scientific publications to identify risk factors for food safety, taking into account ongoing environmental and social changes. Ability to perform an adequate risk analysis for implementation of HACCP own-checks systems in the food industry.

PRE-REQUIREMENTS

A basic knowledge concerning Food Processing technologies is required.

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. Quality in the agri-food field: definition and terminology; evolution. Evolution of the concept of quality in the production system from post-war to today: from testing to TQM. Insights into the institutional and operational components of quality on the global market; Community approach to legislation and standardization.

Block 2. (8h, lectures)

The operation of standardization systems at international, community and national level: Accreditation and mutual recognition of test results and certifications. The ISO 9000 standards. The conceptual basis of ISO 9000 series: from 2008 to 2015 version. Quality Management System under UNI EN ISO 9001/15: General Requirements, Process Approach. The innovative requirements introduced by the 2015 review. Planning of business processes; Monitoring and process indicators. Tutorial: Identification and interaction between the processes of an SME. A general overview of directional processes: the role of direction; SGQ and Risk Based Thinking. Resource management, measurement and test equipment management, document management and other support processes. Management of business activities and relations with customers. Evaluation and improvement activities (measurements, internal audits and management reviews).

Block 3. (8h, lectures)

Specific knowledge of Management systems for food safety according to UNI EN ISO 22000:2018, environmental management systems standards such as UNI EN ISO 14040. Application of LCA as a tool for sustainability.

Block 4. (8h, lectures)

Knowledge of Management systems for laboratories (ISO/IEC 17025). Specific knowledge of Traceability in

the food industry: UNI EN ISO 22005:2008 standard. Comparison with mandatory legislation Reg. 178/2002. Case study about the application of this rule in a specific company.

Block 5. (8h, lectures)

Product quality certification: Specific knowledge of international product certification Kosher, Halal, BRC, IFS, PDO and IGP standards: meaning, valorisation and protection. Organic and NO-GMO certification.

Block 6. (16h, Practical activity)

Hazard analysis and identification of critical control points. Theoretical concepts and practical examples. The development of a sampling plan for the verification of product's conformity in compliance with Community regulations. Study of the legislation and practical examples. Use of immediate response kits for process control. Practical examples of rapid verification of surface hygiene, gluten residues and mycotoxin content. Food labeling. Study of the legislation and practical examples. 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 examples on the application of rules and in-depth seminars on specific topics held by experts in the certification field. Moreover, didactic visits to food companies could be envisaged in the area to identify and share lessons learned approaches to quality (strategies and control and management tools). The frequency is optional, recommended, and the final exam will be the same for frequenters and not.

EVALUATION METHODS

The aim of examination is to verify the student achieved skills as previously listed and to verify their skills and abilities acquired for the various topics discussed and dealt with during the lectures and practical tutorials.

The assessment of learning consists of two tests as described below

Discussion of a paper: the students, divided into groups, will have to prepare a paper concerning the practical application of the rules of the safety and quality of a food product chosen by the teacher. The works will be illustrated to the teacher and to the other groups, providing for the use of a Power Point presentation or other methods of communication. This verification method contributes to 30% of the final grade (maximum 9 points will be awarded).

Oral exam: during the oral examination the student will have to answer three questions on three topics chosen among all the contents of the course. The first question will concern a topic chosen by the student. This method of verification contributes to 70% of the final grade (maximum 21 points will be awarded).

The final grade will be given by the sum of the scores of the two tests.

The students who want to take the exam without attending the course will be evaluated through an oral exam aimed at verifying the skills and abilities acquired for the various topics discussed and treated during the lectures.

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 be made accessible to the students.

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

Voluntary rules: UNI EN ISO 9001/15 - UNI EN ISO 22000/18 –UNI EN ISO 22005/08- BRC and IFS Global Standards

It is recommended to use the following material for further details and additions:

Alli I. (2016) "Food Quality Assurance: Principles and Practices." CRC Press.

Blech Z.Y. (2008). *Kosher Food Production*. Wiley Blackwell.

Riaz Mian N., Chaudry M.M. (2004). *Halal Food Production*. CRC Press.

Finally, the websites listed below are of interest:

<http://www.uni.com/>

<http://www.accredia.it/>

<http://www.valutazione.it/>

INTERACTION WITH STUDENTS

At beginning of the course, the lecturers 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 contact details of the teachers are provided and acquired those of the students in order to facilitate the exchange of information. At the end of each lesson is left a space of time available to students for any question.

After each lesson, the teaching material (slide print-outs, exercises, further hand outs) will be made available to students by using a cloud storage system (Dropbox or Google Drive). The outcome of examinations will be made available at the end of the exam's session. For more information or for any other needs, the lecturers will be available to receive students on Monday (16.20-18.30), Wednesday (11.30-13.30) and Tuesday (16.30-18.30) in their office and/or even in other days, preferably after an E-mail contact.

EXAMINATION SESSIONS

20/02/2020, 19/03/2020, 16/04/2020, 14/05/2020, 11/06/2020, 9/07/2020, 17/09/2020, 15/10/2020, 12/11/2020, 10/12/2020, 14/01/2021

EVALUATION BOARD

Prof. Fernanda Galgano (President), Dr. Nicola Condelli (Component), Dr. Marisa C. Caruso (Component)

SEMINARS BY EXTERNAL EXPERTS YES X NO

FURTHER INFORMATION
