



**QUALITY CONTROL AND
FOOD SAFETY-QUALITY
MANAGEMENT SYSTEMS**

COURSE OUTLINE

GENERAL

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|--|---|------------------------------|-----------------|
| SCHOOL | AGRICULTURAL SCIENCES | | |
| DEPARTMENT | FOOD SCIENCE AND NUTRITION | | |
| COURSE LEVEL | <i>Undergraduate</i> | | |
| COURSE CODE | MK613 | SEMESTER | 6 th |
| COURSE TITLE | QUALITY CONTROL AND FOOD SAFETY-QUALITY MANAGEMENT SYSTEMS RESPONSIBLE: M. KAKAGIANNI | | |
| INDEPENDENT TEACHING ACTIVITIES | | WEEKLY TEACHING HOURS | ECTS |
| | Lectures | 3 | 5 |
| | Lab Lectures-exercises | 2 | |
| COURSE TYPE <i>Background, General Knowledge, Scientific Area, Skill Development</i> | <i>Scientific Area, special background</i> | | |
| PREREQUISITES: | - | | |
| LANGUAGE OF TEACHING AND EXAMINATIONS: | GREEK | | |
| THE COURSE IS OFFERED TO ERASMUS STUDENTS | YES | | |
| URL | https://food.uth.gr/poiotikos-organolhptikos-elegxos/ | | |

TEACHING RESULTS

| Teaching Results |
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| <p>The course QUALITY CONTROL AND FOOD QUALITY AND SAFETY MANAGEMENT SYSTEMS provides the institutional framework for ensuring the hygiene and quality of food, the Quality Management System according to the ISO 9001:2015 Standard, Management of the safety of food, the HACCP system (principles, development, application/maintenance, forms), analysis requirements of the ISO 22000:2018 standard, comparative presentation of standards, inspection Systems, system certification, basic principles of quality and safety management food, modern approaches to food quality and safety control (quantitative microbiology, risk analysis). Upon successful completion of the course, the student will be able to: know the basic principles of Food Legislation, quality parameters, basic organic and chemical hazards related to food safety and be able to draw up and implement risk analysis and quality management systems in practice or food safety (HACCP-ISO 22000, ISO 9001, GFSI standards, etc.). Familiarity with above topics are completed through appropriately designed laboratory exercises, topics and computational exercises (case studies). In addition, the course is a basic introductory course in the concepts of quality control and food quality assurance, where their quality characteristics are presented food (quantitative, invisible, organoleptic and functional characteristics) and organoleptic characteristics. (Appearance, texture, smell and aroma, taste.</p> |



It is aimed at the admission of students

- a) in data analysis and sampling – food sampling plans,
- b) the basic concepts of food quality and organoleptic examination
- c) how to deal with and solve quality problems with the help of statistics quality control using control charts and organoleptic control of food,
- d) in understanding the methods and the way of analyzing organoleptic data assessment, and
- e) in the assessment of forgery, misrepresentation, fraud (recent cases) with regard to raw materials and their ingredients and methods of determining food authenticity.

Upon successful completion of the course, the student will be able to:

- assess recorded non-conformance inspections
- design procedures according to the prescribed requirements
- judge measurable results of evaluation and application of procedures
- cooperate as members of quality assurance and food safety teams
- plan corrections and corrective actions for non-conformances
- apply the procedures provided by a management system food safety
- recognize the basic prerequisites for implementing management systems food safety
- carry out inspections for compliance with hygiene instructions
- raise awareness of the observance of rules of good hygienic practice
- apply the procedures provided by a management system quality and food safety
- has understood the importance of quality and its benefit and what it constitutes a matter of prevention and not of controls or inspections
- has understood the importance of specifications, the customer and of variability for the definition of quality, and the relation of the latter to the quality problems
- has an understanding of the dimensions of quality that contribute to the determination of a product
- can combine statistics with the concept of quality to solve or prevention of quality problems, as well as their improvement
- has understood the application of problem solving tools and quality management
- perceive the need for continuous quality improvement
- has understood the concept and methods of organoleptic examination
- applies the principles of organoleptic assessment of food in its procedures food industry
- applies organoleptic evaluation techniques to food acceptance by consumers
- correlates organoleptic evaluation with instrumental analysis techniques for assessment of food quality

General Skills

- Application of knowledge in practice
- Search, analysis and synthesis of data and information, with use of necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous work
- Group work
- Work in an interdisciplinary environment
- Generation of new research ideas
- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking

CONTENT

LECTURES

The aim of the course is to introduce students to quality control and systems assurance and management of food quality and safety in food businesses.

- In particular, it includes an introduction to ISO quality standards (International Organization for Standardization) by analyzing the procedures and the role of certification organizations that are applied.
- In addition the basic terminology used by the ISO 9000 standard is presented and ISO 22000 and reference is made to the way the international standardization organization operates.
- Also, the process of internal and external inspections, control is described of processes in improving the production of products with the aim of achieving better quality results.



- Includes an introduction to the ISO 22000 standard i.e. Safety Management System of Food (FSMS) analyzing its procedures. In addition, basic terminology is presented used by the ISO 22000 standard and the key concepts.
- Application prerequisites, the main risks (chemical, physical, microbiological, allergens, ingredients from genetically modified organisms) for the food safety, the basic risk assessment methods. They also grow are illustrated with examples and case studies, the measures to control these risks, the way control measures are categorized into Critical Control Points
 - Functional prerequisite programs and prerequisites are described Programs, the basic principles of HACCP (HAZARD ANALYSIS CRITICAL CONTROL POINT) and the HACCP plan.
- Also, the way of drafting non-conformities and inspection report is presented as well and how corrective actions are drafted.
- Introduction to the principles of food quality control
- Food quality characteristics - Quality coefficients
 - Food sampling
- Solving food quality control and quality improvement problems
- Introduction to the organoleptic evaluation of food (the human senses as an analytical tool, applications of organoleptic evaluation
 - Organoleptic food evaluation methods (organoleptic evaluation of appearance, shape and size, organoleptic evaluation of color, organoleptic evaluation of structure and texture, organoleptic evaluation of smell and taste)
- Forgery, misrepresentation, fraud (recent cases)
- Evaluation of analytical methods used for control and food certification/identification

LAB LECTURES-EXERCISES

- Quality and organoleptic control methods. Basic senses. Organization and planning of organoleptic tests. Analytical and descriptive tests.
- Sampling and preparation of food samples.
- Organoleptic discrimination tests
- Organoleptic preference-acceptance tests, duo-trio test.
- Application of ISO 9001. Case studies in the Food Industry
 - HACCP application. Examples, independent/group exercise-Risk analysis,
- Control of Critical Points
- ISO 22000 Case Studies in the Food Industry
- Inspection simulation. Exercise execution
- Laboratory accreditation. Examples of laboratory appropriateness of assays



TEACHING AND LEARNING METHODS - EVALUATION

| TEACHING METHOD. | Face to face lectures in the auditorium/classroom and face to face laboratory exercises in an appropriate laboratory. | | | | | | | | | | | | | | |
|---|--|--------------------------|-----------------|----------|----|--------------|----|----------------------------------|----|-------------------|----|---|------------|--|--|
| USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES | <ul style="list-style-type: none"> • Use of I.C.T. in Teaching, in Laboratory Education, in Communication with the students • Use of ICT in Teaching • Use of ICT in Laboratory Education (Usage software for statistical control of the quality of food) • Use of ICT in Communication with students <p>The course material (theory and exercises) is posted in the e-class of the DFSN of UT. Communication with the students is done through announcements on the e- class. From this platform, students can communicate by email with the teacher.</p> | | | | | | | | | | | | | | |
| TEACHING STRUCTURE | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;"><i>Activity Semester</i></th> <th style="text-align: center;"><i>Workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td style="text-align: center;">60</td> </tr> <tr> <td>Lab Lectures</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Elaboration of a study (project)</td> <td style="text-align: center;">10</td> </tr> <tr> <td>Independent Study</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Course Total: (25 hours of workload per credit unit)</td> <td style="text-align: center;">125</td> </tr> </tbody> </table> | <i>Activity Semester</i> | <i>Workload</i> | Lectures | 60 | Lab Lectures | 30 | Elaboration of a study (project) | 10 | Independent Study | 25 | Course Total: (25 hours of workload per credit unit) | 125 | | |
| <i>Activity Semester</i> | <i>Workload</i> | | | | | | | | | | | | | | |
| Lectures | 60 | | | | | | | | | | | | | | |
| Lab Lectures | 30 | | | | | | | | | | | | | | |
| Elaboration of a study (project) | 10 | | | | | | | | | | | | | | |
| Independent Study | 25 | | | | | | | | | | | | | | |
| Course Total: (25 hours of workload per credit unit) | 125 | | | | | | | | | | | | | | |
| EVALUATION OF STUDENTS | <ol style="list-style-type: none"> 1. Written exam (70 %): <ul style="list-style-type: none"> - Multiple choice questions (Formative, conclusion) - Short development questions (Formative, conclusion) - Extended development questions (Formative, conclusion) 2. Lab grade (30%): <ul style="list-style-type: none"> - Written Work (Formative, Conclusive) - Public Presentation (Formative, conclusion) | | | | | | | | | | | | | | |

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