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| **Title** of the subject:**Quality management systems and audit in the food chain MTMEL7016A** | **ECTS Credit Points: 4** |
| **Type** of the subject: compulsory / optional |
| **Ratio of theory and practice: 50/50** (credit%) |
| **Type and number of classes per semester**: 28 hour(s) lecture and 28 hour(s) practice per **semester.** Number of teaching hours / week: 2+2 (lecture and practice)  |
| **Type of exam**: exam / practical course mark |
| **Subject in the curriculum:** semester 3 |
| Preliminary requirements:- |

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| **Summary of content - theory**:  |
| Course objectives: The aim of the subject is the introduction of standards, furthermore, the development, operation and certification of the quality, environmental and food safety systems. 1. Introduction. Definitions. Evolution of quality management
2. GMP, GHP, GAP
3. GLOBALGAP
4. HACCP
5. ISO 9001, ISO 14001
6. ISO 22000. GFSI, FSSC 22000
7. BRC Global Standard for Food Safety
8. IFS Food Standard
9. Auditing of management systems
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| **Summary of content - practice**:  |
| Skills to be learnt: development, operation and certification of the quality, environmental and food safety systems.  1. Application and audit of ISO 9001:2015 standard
2. Application and audit of ISO 9001:2015 standard
3. Application and audit of ISO 22000:2018 standard
4. Application and audit of ISO 22000:2018 standard
5. Application and audit of BRC Global Standard for Food Safety
6. Application and audit of BRC Global Standard for Food Safety
7. Application and audit of IFS Food standard
8. Application and audit of IFS Food standard
9. Application and audit of GLOBALGAP IFA standard
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| **Literature, handbooks in English**  |
| 1. Peles, F. – Juhász, Cs. (2014): Quality assurance. University lecture notes. University of Debrecen. /ISBN 978-963-473-656-1/ TÁMOP 4.1.2.A/1-11/1-2011-0009. 177p.
2. Vasconcellos, J.A. (2004): Quality Assurance for the Food Industry. A Practical Approach. CRC Press. 448 p.
3. Jacxsens, L. – Devlieghere, F. – Uyttendaele, M. (2009): Quality Management Systems in the Food Industry. Ghent University. 153p.
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| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* |
| 1. **Knowledge:**
* Familiar with the complexities of food safety and quality management systems and their legal regulatory background.
* Recognizes the identities and differences between the management systems, and able to implement a quality, and food safety management system.
1. **Skills:**
* Able to coordinate quality and food safety processes and operate quality and food safety management systems.
1. **Attitude:**
* Committed to quality work.
1. **Autonomy and responsibility:**
* During decision-making he/ she takes responsibility for environmental and quality impacts.
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| **Responsible lecturer: Ferenc Peles, PhD** |
| **Other lecturer(s): -** |

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| **Terms of course completion:** |
| 1. Participating in the exercises
2. Completing practical exercises
3. Submitting practical essays
4. Giving presentation
5. Four mid-year written exams
6. Written exam (if the result of the mid-year written exams is less than 60%)

The course ends in a mid-semester grade based on the result of the mid-year written exams. The minimum requirement for both mid-term and end-term written exams is 60%.Result and grade:0-59%: fail (1) 60-69%: pass (2)70-79%: satisfactory (3)80-89%: good (4)90-100%: excellent (5)If the result of the written exams is below 60%, it is necessary to rewrite that.  |
| **Form of examination:** |
| Written form |
| **Requirement(s) to get signature:** |
| 1. Participating in the exercises
2. Completing practical exercises
3. Submitting practical essays
4. Giving presentation
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| **Exam questions:** |
| 1. Interrelationship among the commonly used food safety tools
2. What are the main quality management methods and systems in food industry?
3. What are the main quality management methods and systems in agriculture sector?
4. Characteristics of Good Manufacturing Practices (GMP)
5. Characteristics of Good Hygiene Practice (GHP)
6. Characteristics of Good Agricultural Practices (GAP)
7. History, aims, characteristics and requirements of GLOBALGAP
8. Documents, types of control points and audit (certification) of GLOBALGAP
9. GLOBALGAP standards. Benefits of IFA standard. Scopes and modules of IFA standard
10. Definition and main characteristics of HACCP
11. History and regulation of HACCP
12. Seven principles of HACCP
13. Logic sequence for application of HACCP and the characteristics of their steps
14. History and evolution of ISO 9000 family of standards
15. Elements and latest versions of ISO 9000 family of standards
16. Main characteristics of ISO 9000 and ISO 9001 standard
17. The key changes in the new ISO 9001:2015 standard
18. Title and contents of ISO 9001:2015 standard
19. History, characteristics and requirements of ISO 14001:2015 standard
20. Title and contents of ISO 14001:2015 standard
21. Characteristics and requirements of the ISO 22000 standard
22. The key changes in the new ISO 22000:2018 standard
23. Title and contents of ISO 22000:2018 standard
24. Characteristics of Global Food Safety Initiative (GFSI)
25. Characteristics of FSSC 22000 standard
26. History and characteristics of BRC Global Standard for Food Safety
27. Requirements and audit of BRC Global Standard for Food Safety Issue 8 (2018)
28. History and characteristics of IFS Food standard
29. Requirements and audit of IFS Food version 6 (2014)
30. Definition, types and main characteristics of audit
31. Main principles of auditing
32. Definition and characteristics of audit programme
33. Characteristics of typical audit activities
34. Main steps and their characteristics of “conducting the audit activities”
35. Main personal behaviours of the auditors during the performance of audit activities
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