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| **Title and Code** of the subject:  **Food industry technologies and quality assurance MTBE7031A** | **ECTS Credit Points: 3** |
| **Type** of the subject: compulsory | |
| **Ratio of theory and practice: 66/33** (credit%) | |
| **Type and number of classes per semester**: 24 hours lecture and 14 hours practice per **semester**  Number of teaching hours / week : eg.:2+1(lecture and practice) | |
| **Type of exam**: practical course mark | |
| **Subject in the curriculum:** semester 6 | |
| Preliminary requirements:- | |

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| **Summary of content - theory**: |
| Course objectives: The main aim of the lectures is to know the hygiene requirements in relation to plant origin food production, the structure of HACCP plan and the methodology of hazard identification, hazard analysis, flow diagram preparation and corrective action determination. By the end of the semester, students will be able to identify physical, chemical and microbiological hazards in plant origin food production, and they will be able to prepare a HACCP plan.  **Schedule:**   1. Food hygiene (852/2004/EC regulation) and HACCP system 2. Methodology of determination of hazards and making a flow diagram 3. Methodology of hazard analysis and determination of PRPs, oPRPs and CCPs 4. Methodology of monitoring procedures and corrective actions 5. Technologies and hazards in the production of non-alcoholic drinks 6. Technologies and hazards in the production of bakery products 7. Technologies and hazards in the production of confectionery products 8. Technologies and hazards in canned food production 9. Technologies and hazards in quick-frozen foodstuff production 10. Technologies and hazards in pickles production 11. Technologies and hazards in vegetable oil production 12. Technologies and hazards in the production ofalcoholic beverages (beer) 13. Technologies and hazards in the production of alcoholic beverages (wine) 14. Test |
| **Summary of content - practice**: |
| Skills to be learnt: The main aim of the practices is to increase the knowledge of HACCP plan and hazard analysis. For this purpose the preparation of HACCP plan (mainly hazard analysis) will be carried out for concrete foodstuffs, and the students will make an individual project task about a chosen food.  **Schedule:**   1. 2016/C 278/01 regulation 2. Determination of hazards and preparation of flow diagrams 3. Preparation of hazard analysis and determination of PRPs, oPRPs and CCPs 4. Description of monitoring procedures and corrective actions 5. Hazard analysis of 100% natural apple juice production 6. Hazard analysis of bread production 7. Hazard analysis of biscuit production 8. Hazard analysis of canned peach production 9. Hazard analysis of quick-frozen french fries production 10. Meeting about the individual project task 11. Hazard analysis of spiced oil production 12. Hazard analysis of beer production 13. Hazard analysis of fruit wine production 14. Group presentation of the project task |
| **Literature, handbooks in English** |
| 1. 2016/C 278/01 EU Commission notice on the implementation of food safety management systems covering prerequisite programs (PRPs) and procedures based on the HACCP principles, including the facilitation/flexibility of the implementation in certain food businesses 2. 852/2004/EC regulation 3. Lelieved, H., Holah, J., Gabric, D.: (2016): Handbook of Hygiene Control in the Food Industry. ISBN: 978-0-08-100197 4. Codex Alimentarius Commission: Food hygiene. Basic texts. (http://www.fao.org/docrep/012/a1552e/a1552e00.pdf) |
| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* |
| 1. **Knowledge:**  * Students will know definitions of food preparation, main features and connections * Students will know the food hygiene regulations, and is able to identify hazards associated with food processing and treatment  1. **Skills:**  * Students will be able to prepare flow diagram and hazard analysis * Students will be able to determine preventive/control measures and corrective actions  1. **Attitude:**  * Students shall make efforts to solving the different problems in food preparation  1. **Autonomy and responsibility:**   Students will be able to solve different problems alone or jointly with others |

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| **Responsible lecturer: Dr. Nikolett Czipa, associate professor** |
| **Other lecturer(s): Andrea Kántor, PhD student, Alexa Loránd, PhD student** |

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| **Terms of course completion:** |
| 1. Completing exercises 2. Submitting individual project task 3. Successful test |
| **Form of examination:** |
| Test and individual project task |
| **Requirement(s) to get signature:** |
| Successful test (60%) and participation in practices |

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| **Exam questions:** |
| 1. Description of main points of 852/2004/EC regulation 2. Principles of flow diagram preparation 3. Principles of critical points determination 4. Principles of hazard analysis preparation 5. Criteria of monitoring controls 6. Criteria of corrective actions 7. Determination and control of problems related to filtration and sieving 8. Determination and control of problems related to heat treatments 9. Determination and control of problems related to cooling and freezing 10. Determination and control of problems related to closing and cupping 11. Sampling options (production line, transport, distribution) 12. Temperature control |