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| **Title and Code** of the subject: **Food quality and food chain safety MTMAL7011A** | **ECTS Credit Points: 4** |
| **Type** of the subject: compulsory | |
| **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 | |
| **Subject in the curriculum:** semester 2 | |
| Preliminary requirements:- | |

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| **Summary of content - theory**: |
| Course objectives: The main aim of the lectures is to know the physical, chemical and biological/microbiological hazards which have important effects on food safety and food quality. In this semester, students will know the methodology of risk analysis (mainly the risk assessment) and the methodology of the determination of tolerable intakes and other toxicological values. Student will know the methodology of hazard analysis in relation to animal origin food production.   1. Food quality and influencing factors of food quality 2. Influencing factors of food safety 3. Regulations, directives, standards relation to animal origin foods 4. Introduction to toxicology 5. Chemical hazards 6. Microbiological hazards 7. Foodborne diseases 8. Introduction to risk analysis 9. Methodology of HACCP plan preparation 10. Preliminary risk management activities 11. Risk management and risk communication 12. Chemical risk assessment 13. Microbiological risk assessment 14. Hazards of genetically modified plants and foods |
| **Summary of content - practice**: |
| Skills to be learnt: The main aim of the practices is to expand the lecture’s knowledge with example tasks and case studies. Therefore, the students explore case-studies and make exercises which help them to develop their abilities for the assessment of risks and hazards and for exposure assessment.     1. Food labelling, trademarks, geographical indicators 2. Hazards in animal husbandry 3. RASFF system 4. Trade of animal origin foods 5. Veterinary drugs 6. Ingestion and inhalation exposure assessment 7. Safe human dose 8. Dose-response relationship 9. Hazard analysis of dairy product production 10. Hazards in slaughterhouse 11. Hazards analysis of meat product production 12. Hazard analysis of egg product production 13. Chemical risk assessment 1. 14. Chemical risk assessment 2. |
| **Literature, handbooks in English** |
| 1. IPCS (2010): WHO human health risk assessment toolkit: chemical hazards. ISBN: 978-92-4-154807-6 2. 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 3. Codex Alimentarius Commission: Food hygiene. Basic texts. (http://www.fao.org/docrep/012/a1552e/a1552e00.pdf) 4. Regulations, directives, standards |
| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* |
| 1. **Knowledge:**  * Students will gain the knowledge and skills required for hazard and risk assessment related to animal origin food and veterinary drugs * Students will gain the knowledge and skills required for human exposure assessment  1. **Skills:**  * Students will be able to apply the tools of risk assessment * Students will be able to characterise hazards and determine risks related to animal origin food safety  1. **Attitude:**  * Students will be endeavoured to apply the newest scientific results  1. **Autonomy and responsibility:**  * Students shall be able to feel responsible for safe food production |

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

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| **Terms of course completion:** |
| 1. Exercises 2. Giving presentation |
| **Form of examination:** |
| Exam |
| **Requirement(s) to get signature:** |
| Participation in practices and presentation. |

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| **Exam questions:** |
| 1. Definition of food safety and food chain safety and influencing factors of food safety 2. Definition of food quality and influencing factors of food quality 3. Characterisation of vulnerable groups 4. Characterisation of chemical hazards and diseases 5. Characterisation of foodborne diseases caused by bacteria 6. Characterisation of foodborne diseases caused by parasites 7. Influencing factors of toxicity 8. Characterisation of dose-response relationship 9. Characterisation of exposure models 10. Human exposure assessment 11. Determination of safe human dose 12. Preliminary risk management activities 13. Characterisation of risk profile 14. Methodology of risk ranking 15. Methodology of risk assessment 16. Hazards in raw material production and food production (dairy industry) 17. Hazards in raw material production and food production (meat industry) 18. Hazards in raw material production and food production (poultry meat industry) 19. Hazards in raw material production and food production (egg industry) |