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| **Title and Code** of the subject:  **Basic principles of food mechanics, MTBE7011A** | **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**: practical course mark / exam | |
| **Subject in the curriculum:** 3rd semester | |
| Preliminary requirements:- | |

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| **Summary of content – theory (lectures)**: |
| **The objective of the subject:** to become familiar with the most important technological operations applied in the scope of food industry, their theoretical connections and the machinery utilised in practice.  The student will become up-to-date with the task, field of utilisation and conditions of the given item of machinery. Graduated experts will be able to select the most appropriate devices for each task. Also, graduated students will become capable of operating the machinery and devices.  Besides, the students will be able to participate in the repairing processes in case the machinery is malfunctioning. The objective is to train experts who are responsive to the reception of knowledge required for the operation of food industry equipment, devices and in possession of such knowledge they are able to participate in the planning process of food-related raw material production, processing and management. The graduated students are able to participate in the organisation and control of the activities in the scope of the daily practice.  **Schedule:**  Week 1: Machines of transportation and conveyance I: Gravitational and mechanic conveyance  Week 2: Machines of transportation and conveyance II: conveyance in air flow  Week 3: Devices of chopping, cutting, grinding I.: Refiners, mills, grinders, vegetable slicers, shredders  Week 4: Devices of chopping, cutting, grinding II.: Meat mincer, bacon dicer, bowl cutter  Week 5: Technology of meat processing, slaughterhouse,  Week 6: Devices of classification and sorting I. Vegetable and fruit classification devices, sieve, screen  Week 7: Devices of classification and sorting II. Magnetic sorting, separator, air classifiers, hydro cyclone  Week 8: Technology of separation processes I: Settling, Filtering  Week 9: Technology of separation processes II: Centrifugation  Week 10: Mixer devices, agitators, homogenisation  Week 11: Technology of pressing, squeezing  Week 12: Refrigerators, refrigerating devices  Week 13: Evaporation devices  Week 14: Devices of washing |
| **Summary of content – practice (seminars)**: |
| **Practice lessons focuses on 3 main activities:**   1. Extending the knowledge of the theory lessons by practical explanation, calculations and related multimedia material 2. Help students to prepare for the course assignment and the final presentation 3. Factory visits to food companies to observe the related machinery in operation   The last practice lesson is for the students’ presentation and the evaluation of the assignment. |
| **Literature, handbooks in English** |
| 1. Smith, P. G.: Introduction to Food Process Engineering. Springer Science+Business Media. 2011. ISBN: 978 1 4419 7661 1  2. Serna-Saldivar, Sergio O.: Cereal Grains. Properties, Processing, and Nutritional Attributes. Taylor and Francis Group, LLC. 2010. ISBN: 978 1 4398 1560 1  3. Hui, Y. H. – Ghazala, Sue – Graham, Dee M. – Murrell, K. D. – Nip, Wai-Kit: Handbook of Vegetable Preservation and Processing. Taylor and Francis Group. 2003. ISBN: 9780824743017  4. Sinha, Nirmal K. – Sidhu, Jiwan S. - Barta, J. - Wu, James S. B. - Cano, Pilar M.: Handbook of Fruits and Fruit Processing. Wiley-Blackwell. 2012. ISBN: 978-0-8138-0894-9 |
| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* |
| 1. **Knowledge:**  * xx * xx  1. **Skills:**  * xx * xx  1. **Attitude:**  * xx  1. **Autonomy and responsibility:**  * xx |

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| **Responsible lecturer: Dr. habil Endre Harsányi, Ph.D, associate professor** |
| **Other lecturer(s): Dr. Nándor Csatári, Ph.D, research assistant** |
| **Terms of course completion:** |
| 1. Completing assignment:   deadline for submitting: on Friday 12th week;  deadline for correction: on Friday 14th week;   1. Giving presentation (at 14th week’s practice lesson) 2. Attending practice / factory visits 3. Written exam |
| **Form of examination:** |
| 50% of course grade from assignment + presentation  50% of course grade from written exam  Grade thresholds:  0-49% - fail (1)  50-62% - pass (2)  63-74% - satisfactory (3)  75-87% - good (4)  88-100% - excellent (5) |
| **Requirement(s) to get signature:** |
| 1. Completing assignment 2. Giving presentation 3. Attending practice / factory visits |

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| **Exam questions:** |
| One short question from each topic in the written exam test. The question list will be accessible for students and contains several questions from each topic. |