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| **Title and code** of the subject:**Processing Technologies of Agricultural Crops (MTBE7021A)** | **ETCS 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 weekly practice per **semester** Number of teaching hours / week : eg.:2+0 (lecture and practice) |
| **Type of exam**: exam / practical course mark |
| **Subject in the curriculum:** semester 4 |
| Preliminary requirements:- |

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| **Summary of content - theory**:  |
| Course objectives:**Schedule:**1. Food safety, Food quality, Food processing, Food economic
2. Food, non-food, new-food

Quality of cereals (wheat, rye, triticale, oats, barley, corn/maize, rice, sorghum, millet)1. Storage of cereals, mill technology
2. Quality and quantity parameters of wheat flour
3. Baking technology (bread, pasta), flour
4. Corn/maize processing
5. Starch technology
6. Quality and quantitive parameters of potato, potato processing and products
7. Oil technology, quality and quantitive parameters of oils
8. Sugarbeet processing, sugar technology
9. Confection industry (candy, chocolate)
10. Production of malt, beer production
11. Fermentation industries: alcohol, fuel (bioethanol), yeast production
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| **Summary of content - practice**: |
| 1. Weekly practice
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| **Literature, handbooks in English**  |
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| **Competencies gained** *(acc. to the Regulation on training and outcome requirements)* |
| 1. **Knowledge:**
* Knows food processing
* Knows the physical, chemical, biological processes
1. **Skills:**
* Able to carry out/work food processing (in semi-industrail and industrial processing)
* Able to work according to enviromental regulations and health regulations
1. **Attitude:**
* Open to analyze and solve food problems
* Open to new technologies and new foods
1. **Autonomy and responsibility:**
* Take responsibility for his/her staff
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| **Responsible lecturer: Dr. Gerda Diósi** |

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| **Terms of course completion:** |
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| **Form of examination:** |
| written exam |
| **Requirement(s) to get signature:** |
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| **Exam questions:** |
| 1. What does food safety mean?
2. What does food quality mean?
3. What does food processing mean?
4. What does food economic mean?
5. What are the physical, chemical and microbiological hazards of food production?
6. What manufacturing industries do you know? (preservation of vegetables/fruits, animal based ingredients, plant/vegetables/fruit-based ingredients)?
7. Which factors affect the quality and safety of the product? List 10 factors!
8. List 5 non-food!
9. What does food-chain mean?
10. What are the quality parameters of cereals?
11. What are the chemical compositions of cereals?
12. What are the parts of winter wheat?
13. Which chemical parameter is the value of each cereal?
14. How are cereals stored?
15. What are the processes during storage?
16. How can we increase storage time (by avoiding quality deterioration)?
17. What are mill operations?
18. How is milling, grinding done? What are the steps of grinding?
19. How is the husking done?
20. What are the chemical parameters of wheat flour, bran and germ?
21. List 10 mill products with the name!
22. List the mill products with their grain size!
23. What are the qualification parameters of flour?
24. What are the raw materials of bread?
25. How is the ripening of dough done?
26. How is the baking of dough done?
27. What are the bread problems?
28. What are the bakery product groups?
29. How is maize grouped?
30. How is maize/corn processed?
31. Describe the corn flour, germ (germ oil) and semolina!
32. Where does corn appear in human nutrition (or processed corn)?
33. What are the steps of starch manufacture?
34. What are the steps of starch sweetening?
35. What are the uses of potato?
36. What are the products of potato?
37. How do we store potato (storage stages)?
38. How is vegetable/cereals/plant oil production done? Draw the oil production process!
39. What is the problem with the erucic acid, what markings are known for erucic acid?
40. What does oil refining mean, how is oil refining done?
41. What are the requirements for solvents?
42. How can we characterize the quality of the vegetable/cereals/plant oils?
43. What is sugar?
44. How is the sugar produced?
45. How do we group sugars?
46. What are the by-products of sugar production?
47. What are the groups of confection products?
48. What are the groups of candies?
49. What are the raw materials of candies?
50. How are candies made?
51. How is the cocoa bean processed?
52. What are the groups of chocolates?
53. How is chocolate made?
54. What are the properties of beer barely?
55. How is malt produced?
56. What are the ingredients of brewing? Characterize them!
57. How is beer production (brewing) done?
58. What are the groups of beers?
59. What are alcohol (brandy, spirits) products? Please describe them?
60. How is bioethanol processed? What are the steps of bioethanol processing?
61. How is yeast processed? What are the steps of yeast processing?
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