



COURSE DATASHEET

Semester:	2013/14/1
Course:	Biocatalysis in the food industry
Code:	VEMKBMB412K
Responsible department:	Research Institute on Bioengineering, Membrane Technology and Energetics
Department code:	MKBME
Responsible instructor:	dr. Katalin Bélafiné Bakó

Course objectives:

To introduce students into the biocatalytic processes in the various branches of food industry, to describe their characterization

Course content:

1. Introduction - The role of "useful" and "hazardous" microorganisms in the food industry
2. Operation of biocatalysts, characterization (features of microbes, specificity of enzymes, their protein structure, kinetical description, the effect of the environment on the enzymes, selection criteria of bioreactors)
- 3-4. Dairy industry (microbes in the sour dairy preparations, cheese manufacture, types of cheeses)
5. Fermentation technologies: via lactic acid (microbes, environmental aspects, products)
- 6-7. Brewery (alcoholic fermentation, microbes, environmental aspects, products, production technologies)
- 8-9. Manufacture of fruit juices (pectinase enzymes for the juice production, further enzymes)
- 10-11. Starch industry (amylolytic enzymes, hydrolysis and derivatives of starch, further enzymes)
- 12-13. Special technologies (tea, coffee, cocoa processing - the role of microbes, enzymes)
14. Natural flavours (utilisation of lipase enzymes in production of flavour esters)

Requirements, evaluation and grading:

Terms of signature: Participation on the lectures.

Written exam.

Required and recommended readings:

Birch C G, Balkebrough N, Parker K J (1981), Enzymes and food processing, London, Applied Science



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Tucker G A, Woods L F j (1998), Enzymes in food processing, Glasgow, Blackie Academic and Professional.