



UNIVERSITY OF PANNONIA

COURSE DATASHEET

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| Semester: | 2014/15/1 |
| Course: | Integrated biotechniques |
| Code: | VEMKBMB412B |
| Responsible department: | Research Institute on Bioengineering, Membrane Technology and Energetics |
| Department code: | MKBME |
| Responsible instructor: | dr. Katalin Bélafiné Bakó |

Course objectives:

To introduce the features of integrated systems in biotechnological processes for the students, moreover to present the possibilities and difficulties of their designing, building and operation.

Course content:

- 1-2. The reasons and aims of integration (e.g. product inhibition), possible connecting points
- 3-4. Demands of the process to integrate into the system
- 5-7. Systems consisting of more unit operations
- 8-9. Application possibilities of membrane processes
10. Integrated system in one unit, requiring membrane separation process:
 - membrane electrodes
 - membrane reactors
- 11-13. Application of in-line and in-situ integration for product recovery, Case studies _

Requirements, evaluation and grading:

The students must give a presentation which needs to be supported by a written report.

Required and recommended readings:

Integration of membrane processes into bioconversions, Ed. by Bélafi-Bakó, K., Gubicza, L., and Mulder, M., Kluwer, New York, 2000