



## COURSE DATASHEET

<b>Semester:</b>	2013/14/1
<b>Course:</b>	Up-to-date bioseparation techniques
<b>Code:</b>	VEMKMUB312K
<b>Responsible department:</b>	Research Institute on Bioengineering, Membrane Technology and Energetics
<b>Department code:</b>	MKBME
<b>Responsible instructor:</b>	Zsófia Eszter Csanádi

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### Course objectives:

Introduction to basic bioseparational techniques.

### Course content:

1. Media of fermentation.
2. Physical, chemical, biological cell opening methods.
3. Filtration, centrifugation.
4. Ultrafiltration.
5. Flocculation.
6. Adsorption in fluid layers.
7. Fluid-fluid solid extraction.
8. Evaporation.
9. Crystallization.
10. Chromatographical methods, elution, frontal chromatography.
11. Simulated moving layer chromatography.
12. Ion-exchange chromatography.
13. Electrophoresis, dialysis, electro dialysis.
14. Chiral separation methods.
15. Applications.

### Requirements, evaluation and grading:



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### Requirements, evaluation and grading:

The lectures' materials.

### Required and recommended readings:

Marton Gyula, Szánya Tibor, Hanák László: Biotechnológia termékek elválasztási műveletei. Szakmérnöki jegyzet: VE-VMT, Veszprém 2002 január Belter P.A, Cussler E.L, W.S. Hu: Bioseparations, downstream processing for biotechnology, John Wiley and Sons, New York.