



COURSE DATASHEET

Semester:	2016/17/1
Course:	Up-to-date bioseparation techniques
Code:	VEMKMUB312K
Responsible department:	Research Institute on Bioengineering, Membrane Technology and Energetics
Department code:	MKBME
Responsible instructor:	dr. Béla Nándor Nemestóthy

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.

After a half an hour's preparation the examinee gives an oral presentation on the topic for about 20-25 minutes.

Fail (1) when the examinee is unable to prove either the definition of the basic notions or the short scheme of things connected with the topic.

Pass (2) when the examinee is able to interpret the basic notions of the topic.

Satisfactory (3) when the examinee is well - versed in the basic notions of the topic and is able to present their logic connections - with the help of the examiner.

Good (4) when the examinee provides a logic, well - structured presentation with all the important facts and connections but he does not know or partly knows the required reading material connected with the topic.

Very good (5) when the examinee gives a logic, excellent, well-structured, perfect in details oral presentation that completely reveals the connection of the concepts within the topic.

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.