



SUBJECT DATASHEET

Semester:	2010/11/2
Subject:	Bioreactors
Code:	VEMKMUB312B
Responsible department:	Research Institute on Bioengineering, Membrane Technology and Energetics
Responsible department code:	MKBM
Responsible lecturer:	dr. Katalin Bélafiné Bakó

Educational objectives:

Introduction to the special bioreactor constructions used in the biotechnical industry.

Detailed content of the subject:

1. Construction and classification of bioreactors
2. Main parts of fermentors
3. Transport phenomena in bioreactors: oxygen balance, oxygen transfer
4. Formation kinetics in bioreactors
5. The chemostate: continuous, ideally stirred bioreactor
6. Aerob bioreactors with mechanic stirring
7. Loop reactors and bubble coloums
8. Anaerob bioreactors
9. Multiphase bioreactors
10. Reactors with immobilized enzymes and cells. The role of diffusion
11. Sterilizing bioreactors
12. Membrane bioreactors
13. Measurement and regulation in bioreactors
14. Cost approximation of bioreactors

Requirements:

The lectures' materials



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Requirements:

Required and suggested references:

Schügerl K.: Bioreaction Engineering vol. II. John Wiley and Sons, 1987. Douglas S. Clark: Biochemical Engineering, Marcel Dekker Inc. 1997.