



## COURSE DATASHEET

<b>Semester:</b>	2012/13/2
<b>Course:</b>	Bioreactors laboratory practice
<b>Code:</b>	VEMKMUB332B
<b>Responsible department:</b>	Research Institute on Bioengineering, Membrane Technology and Energetics
<b>Department code:</b>	MKBME
<b>Responsible instructor:</b>	dr. Béla Nándor Nemestóthy

---

### Course objectives:

The aim of the measurements is to study different bioreactors: periodic fermentors, air-lift reactors, membrane reactors and immobilized cell reactors in groups of 3-4.

### Course content:

1. Shaking lombic experiments in incubators
2. Stirring bioreactors with double wall
3. Packed coloum reactors (fluid bed, loop construction)
4. Membrane bioreactors

### Requirements, evaluation and grading:

Terms of signature:

Accomplishment of the allocated measurements.

One substitution is allowed.

Average of the final test and the lab tests.

It's can be improved on time.

### Required and recommended readings:

Schügerl K.: Bioreaction Engineering vol. II. John Wiley and Sons, 1987.

Douglas S. Clark: Biochemical Engineering, Marcel Dekker Inc. 1997.