UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2012/13/2
Course:	Transportphenomena
Code:	VEMKMUB113T
Responsible department:	Department of Chemical Engineering Science
Department code:	MKMU
Responsible instructor:	Dr. János Argyelán

Course objectives:

Basic introduction to transport phenomena.

Course content:

1. Object of the transportphenomena. Static of the fluids 2. Residence time distributions 3. Extensive quantities densities, streams fluxes equation of continuity, micro and macro balances 4. Motion of the fluids, shear stress. Laminar and turbulent flows 5. Boundary layer theories 6. Drag friction, sedimentation, pressure drop, friction factor 7. Heat, temperature, energy conservation. Differential and integral energy balances 8. Energy transport in flowing systems. St, Nu numbers 9. Concentrations. Integral and differential component balances 10. Component transport in flowing systems St', Nu' number 11. Transport theories 12. Similarities, dimensionless equations of the indestructibility of the extensive quantities 13. Analogies 14. System of the dimensionless numbers 15. Report

Requirements, evaluation and grading:

The mean of the two mid-term papers >=2.

Required and recommended readings:

Benedek P., László A.: A vegyészmérnöki tudomány alapjai, Szárítási kézikönyv (Szerk. Imre L.) Grúber J., Blahó M.: Folyadékok mechanikája, Szolcsányi P. : Transzportfolyamatok, Bird-, Stewart: Lightfoot: Transportphenomena, Culson, J.M., Richardson, J.F.: Chemical Engineering, I. kötet, Cranc, J.: The Mathemathics of Diffusion, Wärmeatlas, Astarita, G.: Mass Transfer with Chemical Reaction