UNIVERSITY OF PANNONIA

SUBJECT DATASHEET

Semester:	2011/12/1
Subject:	Environmental modelling laboratory practice
Code:	VEMKKVA133K
Responsible department:	Department of Environmental Engineering
Responsible department code:	MKKV
Responsible lecturer:	Imre Magyar

Educational objectives:

Understanding the basics of air pollution, hydraulic and transport models. Demonstration of widely used modelling softwares.

Detailed content of the subject:

1. Analytical and numerical modelling in hydraulics. 2. Numerical models with finite difference method. Laplace equition. 3. Source definition. (infiltration, recharge, pumping, evapotranspiration) Laplace-Poisson equition. 4. Laplace-Poisson equition. New examples. 5. Modelling of open table aquifers. 6. Modelling of vadose zone. 7. Modelling of hydraulics of aquifers. 8. Modelling of hydraulics of aquifers. 9. Modelling of hydraulics of aquifers. 10. Numerical modelling with finite difference. 11. Transport modelling. advection 12. Transport modelling. Advection and hydromechanical dispersion. 13. Transport modelling. 14. Determination of impact zone. 15. Complex application of GIS and modelling softwares.

Requirements:

During the semester the students make an air dispersion and solute transport modelling examples group work in 2-3 members of team. They make a report of the result of the work in digital and written form.

Required and suggested references:

Bear, J., Verrujit, A.: Modelling Flow and Pollution. D. Reidel Publ. Co., 1987. Wang, H. F., Anderson, M. P.: Introduction to groundwater modelling. H. Freeman and Co., San Francisco, 1982. Kovács Balázs: Hidraulikai és transzport modellezés Processing Modflow környezetben I.