UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2012/13/1
Course:	Technical Fluid Mechanics and Engineering Thermodinamics
Code:	VEMKGEM143H
Responsible department:	Department of Applied Mechanical Engineering
Department code:	MKAGT
Responsible instructor:	Dr. András Bálint

Course objectives:

Fundamentals of fluid mechanics of control valves.
Expansion of the heat-technical basics.

Course content:

Theoretical basic for fluid flow through control valves. Basic knowledge. Properties of fluids.
Mass and energy conservations law in the fluid mechanics.
Control valves selection. Calculation methods.
Control valves selection on the basis of control loops requirements.
Control valves noise. Basic knowledge.
Noise sources at the control valves and the theoretical basic of prediction.
Examining of characteristics of control valves.
General differential equation of the heath-flow.
Heat-flow in standing and flowing fluids.
Numerical solutions of the general differential equation of the heath-flow.
Numerical calculation of temperature distribution in standing medium (stationer occasion).
Numerical calculation of temperature distribution in standing medium (instationer occasion).
Heat-radiation.
Heat-flow calculation used by Ansys FEM software (exhibition).

Requirements, evaluation and grading:

taking part in lectures and seminars, successful tests.

Required and recommended readings:

Control Valve Handbook. EMERSON Proces Managment. Fisher Controls International.
Hans O. Engel: Stellgeräte für die Prozessautomatisierung. VDI Verlag
Dr.Pleva L.-Zsiros L.: Műszaki hőtan, VE
1990.; Dr.Pleva L.-Zsiros L.: Műszaki hőtan szemináriumi segédlet és példatár VE, 1994.; Mihejev: A

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Required and recommended readings:

hőátadás
számításának gyakorlati alapjai TK., 1990.