UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2016/17/1
Course:	Advanced Process Control
Code:	VEMKFOM256I
Responsible department:	Department of Process Engineering
Department code:	MKFO
Responsible instructor:	dr. Ferenc Szeifert

Course objectives:

Advanced process dynamics and control in chemical engineering.

Course content:

The structure of controlled technology. Model based solutions. Used process models. Identification of process models. Design of feed forward control algorithms. Design of feedback control algorithms: model based controllers. Direct synthesis method. Internal model control. Model prediction control. Multi variable controllers. Artificial Intelligence in process control (artificial neural network, fuzzy models, soft sensors). Coordinated control. Optimization. Control of batch technologies (SP88). Total plant control. Control system design.

Requirements, evaluation and grading:

Grading is based on practical results (50 %), one written midterm examinations (10 %) and one oral final examination (40 %). The final mark is above 80 excellent (5), 70-79.99 good (4), 60-69.99 medium (3), 50-59.99 pass (2) below 49.99 fail (1).

Required and recommended readings:

1.   D. E. Seborg, T. F. Edgar, D. A. Mellichamp: Process Dynamic and Control, Wiley, New York, 1989.

2.   Bequette, B. W.: Process Dynamics: Modeling, Analysis, and Simulation, Prentice Hall, London,… 1998.

3.   Szeifert F., Chován T., Nagy L., Almásy G.: Rendszermodellek-rendszeranalízis. VE jegyzet, VE-48/94, Veszprém, 1994.

4.   Szeifert F., Chován T., Nagy L.: Szabályozóalgoritmusok - szabályozó tervezés VE jegyzet, VE 4/95, Veszprém, 1995.

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