



COURSE DATASHEET

Semester:	2014/15/1
Course:	Process Dynamics and Control
Code:	VEMKFOB212I
Responsible department:	Department of Process Engineering
Department code:	MKFO
Responsible instructor:	dr. Ferenc Szeifert

Course objectives:

Process dynamics and control basics in chemical engineering.

Course content:

Introduction: Systems and processes. The structure of controlled technology. Input output models. First order, 2-nd order systems, integrators, systems with dead time. Discrete time systems. Transfer function. Impulse and step response models. Identification of process models. Control problems, standards. Sequential control. Design of feed forward control algorithms. Design of feedback control algorithms: PID controllers, tuning methods. Direct synthesis method. Internal model control. Model prediction control. Multi variable controllers. Control system design. Structure of the hole control system.

Requirements, evaluation and grading:

Grading is based on one written midterm examinations and one written final examination. Every written examination consists of 3 examination questions. The final mark is determined according to following table based on the weighed average of the points obtained for the midterm and the final written examination (midterm 20%, final 80): % final mark above 80 excellent (5) 70-79.99 good (4) 60-69.99 medium (3) 50-59.99 pass (2) below 50.99 fail (1)

Required and recommended readings:

Szeifert F., Chován T., Nagy L., Almásy G.: Rendszermodellek-rendszeranalízis. VE jegyzet, VE-48/94, Veszprém, 1994. Szeifert F., Chován T., Nagy L.: Szabályozóalgoritmusok - szabályozó tervezés VE jegyzet, VE 4/95, Veszprém, 1995. D. E. Seborg, T. F. Edgar, D. A. Mellichamp: Process Dynamic and Control, Wiley, New York, 1989.