Zurich University of Applied Sciences

School of Engineering

t.RT1 - Regelungstechnik 1

Person responsible for the course:	Ruprecht Altenburger, altb
Responsible OU:	
ECTS:	4
Valid for:	2012/2013
Last saved:	15.04.2013 08:27

Expertise:

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Methodological skills:

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Social skills:

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Personal skills:

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Learning objectives:

- getting system models from measurements in the time and frequency domain
- describing the static behaviour of systems
- applying P- PI- and PID-controllers to different plants
- root-locus design of control-loops
- knowing cascaded controllers
- targeted use of software tools in order to analyze and to design control systems
- knowing effects of limits and saturations in control-loops and how to deal with them
- To know and to apply the extended stability criteria

Course content:

Lecture:

- Modeling and identification of dynamic processes
- Static computation of control systems, system characteristics
- root-locus design
- cascaded control
- Anti-Windup
- Stability

Laboratory:

- Measurement techniques for experimental identification in open loop and closed loop, bode diagrams, step responses, system characteristics
- Realization of controller circuits
- Static and dynamic behaviour of basic control loops, response to setpoint change and to disturbaces
- Simulation of control systems
- Set-up of control loops with various hardware laboratory models

Previous knowledge:

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Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14*2
Tutorial/Practicum	14*2
Block instruction	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

description	type	form	scope	assessment	weighting
Performance records during school hours					
Semester end exam					

Language of instruction:

Deutsch

Instruction material:

-lecture notes

-exercises

Additional literature:

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Comments:

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