Valid from 2024.HS

Module description: Mess- und Regelungstechnik 2

Module Code	t.BA.MT.MRT2.19HS
ECTS Credits	4
Language of Instruction/Examination	German
Organizational Unit	IEFE
Module Coordinator	Andrea Giovanni Beccuti
Legal Framework	The module description is part of the legal basis in addition to the general academic regulations. It is binding. During the first week of the semester a written and communicated supplement can specify the module description in more detail.
Module Characteristic	Type 3b 2 lecture lessons per semester week and class+ 4 lab bi-weekly lessons per semester and half-class
Module Description	Classical control structures, cascade control and other more complex control structures are introduced. Dynamic systems are analysed in the frequency domain with the Bode diagram. Stability and controller design in the frequency domain are addressed, and an introduction given to filter theory.
Module Content	**Lecture:** • - Classical control structures P, PI, PID • - Extended control structures, cascade control • - Analysis of control systems in the frequency domain • - Stability of control systems in the frequency domain • - Controller design in the frequency domain • - Introduction to filter theory **Lab:** • - Real time PI control • - Controller parctical tuning rules • - Extended contol sturctures • - Practical measurement of a Bode diagram • - Controller tuning based on a Bode-Diagram
Prerequisite Knowledge	Attendance of MRT1
Learning Objectives (Competences)	

Students...	Competencies	Taxonomies
(2) Extended control structures, cascade control	M, F	K1, K2
(3) Analysis of dynamic systems in the frequency domain, Bode diagrams	F, M	K5
(1) Classical control structures P, PI, PID	F, M	K1, K2
(4) Stabiilty of control systems and controller design in the frequency domain	F, M	K5

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Performance Assessment

End-of-module exam	Assessment	Length (min.)	Weighting	Form
written exam	Grade	90	70	acc. to module agreement

Performance assessment during the semester	Assessment	Length (min.)	Weighting	Form
written exam	Grade	60	20	acc. to module agreement
report	Grade		10	acc. to module agreement

Classroom Attendance Requirement	None
Learning material	
Comments	