Module title			Abbreviation
Control Engineering in Space 1			10-I=CE1-182-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science VII		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Control engineering or control systems engineering is an engineering discipline that applies automatic control theory to design systems with desired behaviors in control environments. The practice uses sensors and detectors to measure the output performance of the process being controlled; these measurements are used to provide corrective feedback helping to achieve the desired performance. In this course, students obtain a first impression of system modelling of linear systems.

Intended learning outcomes

In this lecture the students should learn how to describe linear systems (differential equations or state space models). Using the above descriptions, linear systems are analysed in order to control vagaries in system output using feedback obtained from different sensors. Proportional, Differential and Integral controllers and their inner workings will also be learnt by the students. Control laws will be solved manually (on-paper) as well as in simulations using Matlab/SciPy.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

written examination (approx. 90 to 120 minutes)
Language of assessment: English
creditable for bonus

Allocation of places

--

Additional information

--

Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

--

Module appears in

Master's degree (1 major) Satellite Technology (2018)