Course: Control Engineering — credits: 5

Course code	ELVH17GREG
Name	Control Engineering
Study year	2022-2023
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	J. Zijlstra
Modes of delivery	Guest lecture Practical / Training Tutorial
Assessments	Control Engineering - Written, organised by STAD examinations

Learning outcomes

The student can ...

- Develop and analyse 1st and 2nd order system models by means of, or resulting in the corresponding differential equation; and can derive the transfer function of such systems, identifying their characteristic values. In this course we concentrate on mechanical and electrical systems.
- Construct system models using block diagrams, and can identify the different forms of transfer functions.
- Determine the dynamic response of system components to different inputs and disturbances using the method of Laplace transforms and transfer functions.
- Use and apply basic methods for stability and error analysis in order to analyse steady state errors
- Identify the poles and zeros of a dynamic system, and use these methods to analyse the stability behaviour of systems.
- Apply basic methods (e.g. proportional-integral-derivative control [PID]) to design feedback systems.
- Apply the concepts of frequency response to construct and interpret Bode diagrams.
- Calibrate a sensor and determine the transfer function of a sensor controlled process by comparing practical results to theory.
- Evaluate control error and control instability in a control system and relate this to theoretical considerations.

Content

No content available

Included in programme(s)

Electrical Engineering Major Electronics
Electrical Engineering Major Mechatronics

School(s)

Institute of Engineering

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