

Control Systems Programming

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
3	108	Exam

In the course students get acquainted with basic approaches of control systems programming. An object-oriented approach is studied using the C ++ language with the Qt framework.

Course structure:

1. Analog control systems

- 1.1. Analog signals processing approach
- 1.2. Areas of application for analog representation of systems
- 1.3. Analog signals encoding and decoding
- 1.4. Analog systems simulation

2. Digital control systems

- 2.1. Digital signals processing approach
- 2.2. Areas of application for discrete representation of systems
- 2.3. Digital signals encoding and decoding
- 2.4. Digital systems simulation

3. An object-oriented approach in control systems programming

- 3.1. Structures and classes as extended user-defined data types
- 3.2. Control systems hierarchy with nested classes
- 3.3. Encapsulation as a reflection of the physical nature of a system

4. C++ for control systems programming

- 4.1. C ++ Programming basics
 - 4.2. Data types, storing information in memory
 - 4.3. Creating objects on the stack and heap
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