Module title
Introduction to Core Avionics

Abbreviation
10-I-MEC-112-m01

Module coordinator
holder of the Chair of Computer Science VIII

Module offered by
Institute of Computer Science

ECTS
10

Method of grading
numerical grade

Only after succ. compl. of module(s)
--

Duration
1 semester

Module level
undergraduate

Other prerequisites
Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).

Contents
Fundamental principles of data processing, especially for aerospace applications. What is information? Guidance for reliable systems, analogue, digital, FPGAs, radiation effects, micro programming, CPUs, DMAs, memory, memory organisation, system architecture, input and output, sensors and actuators, energy systems, reliability, fault tolerance. Programming of embedded systems in C++.

Intended learning outcomes
Understanding of analogue and digital data processing in embedded systems. Structure of hardware and programming. Embedded programming in C++, knowledge about common sensors and actuators as well as input and output systems.

Courses
V + Ü + Ü (no information on SWS (weekly contact hours) and course language available)

Method of assessment
written examination (approx. 80 to 90 minutes). If announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups. A 80 to 90 minute written examination is equivalent to a 20 minute (approx.) oral examination of one candidate each, a 30 minute (approx.) oral examination in groups of 2 and a 40 minute (approx.) oral examination in groups of 3.

Allocation of places
--

Additional information
--

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

Module appears in
Bachelor’ degree (1 major) Aerospace Computer Science (2011)