Embedded Systems

Embedded systems control many things in our daily life. Energy-efficient refrigerators, elevator controls, and advanced driver assistance systems are just some examples. Embedded systems also control processes in industrial environments and are used to detect and prevent system failures. This lecture gives a general introduction to the topic of embedded systems. It introduces basic concepts and points out important differences to "normal" computer systems. This lecture prepares students for advanced lectures of the Embedded Software Laboratory that cover safety, reliability, formal methods and dynamic systems in detail. This lecture is targeted at all students that do not want to limit themselves to understanding PCs but also want to know how, for example, engine control units and production control systems work.

Topics covered in this lecture are:

- Microcontrollers
- Programmable logic controllers (PLCs)
- PLC programming languages
- Data buses
- Real-time requirements
- Real-time operating systems
- Model-based development & Simulink
- Characteristics of embedded software design
- Teasers of advanced lectures of the embedded software laboratory

News

All news and announcements will be distributed via the Moodle system (replacing the L2P system).

Dates

- Mondays: 14:30 - 16:00 (AH III)
- Tuesdays: 14:30 - 16:30 (AH III)

The first lecture will be held on Monday, 8th of April, 2019.

Exam dates

The exam is expected to take place on the 23rd of July 2019, the re-exam on the 3rd of September 2019.

Video recordings

The video recordings can be found in the L2P learning room after each lecture.

Registration

If this course is part of your curriculum, you should be able to register for both the lecture and the exam via RWTHonline. If you have any problems with that, please contact the academic supervisor for your curriculum.

If can not register via RWTHonline, please use this link: https://ies.embedded.rwth-aachen.de/

Contact

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