Inovace tohoto kurzu byla v roce 2011/12 podpořena projektem CZ.2.17/3.1.00/33274 financovaným Evropským sociálním fondem a Magistrátem hl. m. Prahy.



Evropský sociální fond Praha & EU: Investujeme do vaší budoucnosti



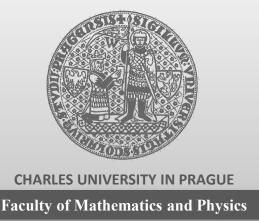
Embedded and Real-time Systems Introduction

http://d3s.mff.cuni.cz



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Requirements for Getting Credit

- Term project max. 60 points
 - Report: design and analysis of real-time properties
 - Implementation
- You have to be registered in for the labs in the Student Information System



Exam and Final Grade

- Written test
 - Given at the last lecture
 - 40 points max.
- The final grade
 - Determined by the sum of points from exam test and term project
 - 80 and more: excellent
 - 72 79: very good
 - 63 71: good
 - less than 63: next time...



Expected Knowledge

- Operating Systems
 - Basics of processes, threads, scheduling and synchronization
- C-language and low-level programming
 - If you passed the Operating Systems labs, you should not have any problems.
- English



Sylabus

- Introduction what are real-time systems, what are embedded systems
- Scheduling
- Synchronisation priority inversion and its avoidance
- Offline scheduling
- Design
- Real-time operating systems
- Real-time communication
- Soft real-time
- Optional
 - Multi-core scheduling
 - Real-time Java



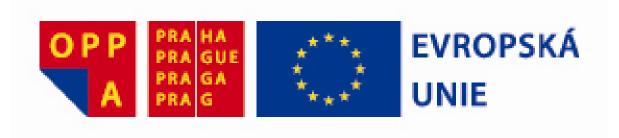
Literature and Links

- Lecture slides can be downloaded from the course website
 - login: ers
 - password: kala
 - http://d3s.mff.cuni.cz/teaching/embedded_realtime_systems/
- Giorgio C. Buttazzo: Hard Real-Time Computing Systems, Kluwer AP, ISBN: 0-7923-9994-3
- Liu, C. L.; Layland, J. (1973), "Scheduling algorithms for multiprogramming in a hard real-time environment", Journal of the ACM 20 (1): 46–61, doi:10.1145/321738.321743



Acknowledgement

- The lecture and slides are originally based on:
 - Real-time systems, basic course
 - Damir Isovic, Mälardalen University, Sweden
 - http://www.idt.mdh.se/kurser/cdt315



Innovation to the course in 2011/12 is partially supported by the project CZ.2.17/3.1.00/33274 financed by the European Social Fund and Municipal House of Prague.

Prague & EU: We invest invest into your future!



Cooperation Possibilities

Topics:

- IoT, Smart Cyber-physical Systems
- Modelling, Component and service-oriented architecture
- Performance engineering
- Operating systems
- Formal system analysis, verification
- Cooperation frame D3S Student's lab
 - Master theses (possible to start even now)
 - Software project
 - Scientific project work and short-term paid projects
 - PhD study (necessary to apply till the end of April!)
- Contact: http://d3s.mff.cuni.cz/

