t.TINAV - Computer Engineering for Aviation

Person responsible for the course:	Andreas Rüst, ruan
Responsible OU:	InES - Institute of Embedded Systems
ECTS:	2
Valid for:	2012/2013
Last saved:	29.05.2013 13:02

Expertise:

-

Methodological skills:

-

Social skills:

-

Personal skills:

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Learning objectives:

The students are able

- to interpret schematics of basic logic circuits and to draw corresponding truth tables, timing diagrams and state diagrams
- to explain the architecture and the operation of a simple processor
- to decribe how characters are encoded and how signed/unsigned integers are represented
- to carry out integer arithmetic operations (add/subtract) in binary and hexadecimal representation
- to name the main instruction types and their characteristics
- to describe the workings of selected computer interfaces and depict the timing diagram
- to explain the purpose and function of error detection and error correction as well as data compression

Course content:

- Digital Logic: combinational and sequential circuits
- Components of a computer system: processor, memory, system bus, I/O
- Coding and representation of information
- Processor: Architecture, instruction set, execution, example programs
- Procedure calls and interrupts
- I/O interfaces of computer systems
- Error detection and correction
- Data compression

Previous knowledge:

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Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14x2L
Tutorial/Practicum	
Block instruction	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

description	type	form	scope	assessment	weighting
Performance records during school hours					
Semester end exam					

Language of instruction:

English

Instruction material:

- slides

- lab exercises

Additional literature:

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Comments:

Semester end exam (70%):

- written exam

- no electronic equipment

- with an own summary of maximum 6 A4 pages

one mandatory written exam (20%) during the semester; terms according to lecturer

one mandatory written lab report (10%); terms according to lecturer