1.3 Digital Signal Processing

Digital Signal Processing

Module summary
Module code: STM130
Module coordinator: Prof. Dr. Thorsten Leize
Credits (ECTS): 6
Semester: 1
Pre-requisites with regard to content: Classical programming skills from bachelor's program. Electrical Engineering at university level (roughly equivalent to 4 ECTS)
Pre-requisites according to the examination regulations: --
Competencies: The students know about the object-oriented paradigm and can apply and use it in the programming language C++. They are able to construct object-oriented software designs. Furthermore the students can convert numbers into different representations and understand the principles of A/D and D/A converters as well as microcomputers and can apply these.
Assessment: The lab has to be passed. The mark for the module is given by the mark of the exam in Computer Science, which is an exam of 60 minutes.

Course: Computer Science
Module code: STM131
Lecturer: Prof. Dr. Thorsten Leize
Contact hours: 2 lecture hours each week
Semester of delivery: yearly in summer semester
Type/mode: lecture including lab exercises and homework
Language of instruction: English
Content: • Repetition about basic concepts • Differences between C and C++ • The object oriented programming paradigm • classes, methods, inheritance, operator overloading, polymorphy, UML • Introduction to modern concepts of C++ from new standard versions 11,14 and 20.
Recommended reading: Any modern C++ book.
Comments:

Course: Digital Signal Processing Lab
Module code: STM132
Lecturer: Prof. Dr. Michael Bantel
Contact hours: 2 lab hours per week
Semester of delivery: yearly in summer semester
Type/mode: lab
Language of instruction: English
Content: • Digital Numbers • Logic Gates • Boolean Expressions

• combinatory Logic • sequential Logic • Analog / Digital and Digital / Analog Converters • Programming of Microcomputers
Recommended reading: Kleitz, William - Digital and microprocessor fundamentals - London: Prentice Hall Basic Experiments in Digital technology - Online E-book
Comments: