Module title: Computer Science

Module summary
Module code: SSTM130
Module coordinator: Prof. Dr. Thorsten Leize
Credits (ECTS): 6
Semester: 1
Pre-requisites with regard to content: Basic C programming knowledge
Pre-requisites according to the examination regulations: ---
learning outcomes and 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: Written exam 60 min + lab work (passed/not passed, 1 semester),which one will be announced at start of lectures.

Course: Computer Science
Module code: SSTM131
Lecturer: Prof. Dr. Thorsten Leize
Contact hours: 2
Semester of delivery: yearly, summer semester
Type/mode: lecture with integrated lab
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: Current version of any C++ text book. E-books recommended, see Ilias
Comments: It highly is recommended to do exercises by yourself throughout the semester

Course: Digital Electronics Lab
Module code: SSTM132
Lecturer: Leticia Garcia Herrera
Contact hours: 2
Semester of delivery: yearly in summer semester
Type/mode: online lab
Language of instruction: English

Content:

- *Digital Numbers*
- *Logic Gates*
- *Boolean Algebra*
- *Combinatory Logic*
- *Data control Devices / Flip – Flops*
- *Counters and Shift Registers*
- *Analog / Digital and Digital / Analog Converters*

Recommended reading:

- Kleitz, William - Digital and microprocessor fundamentals - London: Prentice Hall Basic
- Kleiz, William - Digital Electronics a practica approach with VHDL
- Basic Experiments in Digital technology - Online E-book DIGILab

Comments: