COURSE DETAIL

COMPUTER SYSTEMS ARCHITECTURE

Country
Germany

Host Institution
Technical University Berlin

Program(s)
Technical University Berlin

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Computer Science

UCEAP Course Number
115

UCEAP Course Suffix

UCEAP Official Title
COMPUTER SYSTEMS ARCHITECTURE

UCEAP Transcript Title
COMP SYSTEMS ARCH

UCEAP Quarter Units
5.50

UCEAP Semester Units
3.70

Course Description

The following topics are covered in this course: computer arithmetic, number formats (place value systems, fixed- and floating-point numbers); basics of digital design ((combinatorial logic, gates, truth tables, storage elements, finite state machines); basic technologies and components of a (secure) computer architecture; assembly programming (MIPS): assembly language, control flow, addressing; structure and operation of a multi-cycle data path (MIPS), structure and operation of a multi-cycle implementation; measuring and evaluating performance (SPEC benchmarks, Amdahl's law); structure and operation of a simple Von Neumann model; introduction to pipelining: concepts, hazards, forwarding, solutions; memory hierarchy, caches, virtual memory; input/output techniques (addressing, synchronization, direct memory access).

Language(s) of Instruction
German

Host Institution Course Number
0401 L 410

Host Institution Course Title
COMPUTER SYSTEMS ARCHITECTURE

Host Institution Campus
FAKULTÄT IV ELEKTROTECHNIK UND INFORMATIK

Host Institution Faculty

Host Institution Degree

Host Institution Department
Institut für Technische Informatik und Mikroelektronik

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