

Only the german version of the module description as part of the study regulations is legally binding.

Module name	Design and Programming of Embedded Multicore Architectures
Module number	INF-25-Ma-FTI-EMA
Responsible lecturer	Prof. Dr. Diana Göhringer diana.goehringer@tu-dresden.de
Qualification objectives	Students have qualified knowledge in the specialist areas of design and programming of modern embedded systems and in the specialist area of simulation of embedded multicore architectures. They also have practical skills in the use of embedded operating systems, such as Embedded Linux or FreeRTOS, on a modern embedded system m, such as a Xilinx Zynq system-on-chip.
Content	The content of the module includes overview and specialized knowledge in the fields of design, simulation and programming of modern embedded systems consisting of several processors and special accelerators. Further content includes the memory and communication infrastructures of embedded multicore architectures, for example network-on-chip and the use of embedded operating systems.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and the selfbststudium. The language of instruction for the lectures and exercises is English.
Prerequisites for participation	In the Diploma degree program in Computer Science, in the Bachelor's degree program in Computer Science, the competences to be acquired in the modules INF-25-Ba-RA Computer Architecture and Hardware Laboratory, INF-25-Ba-SWT Software Technology and INF-25-Ba-SWTP Software Technology Project t are assumed.
Applicability	The module is a compulsory elective module in the Computer Engineering and High Performance Computing subject area in the Diplom degree program in Computer Science in the main course of study, which must be selected in accordance with Annex 2 to the examination regulations. In the Bachelor's degree program in Informa tics, the module is a compulsory elective module in the subject area of specialization, which must be selected in accordance with the appendix to the examination regulations. In the Master's degree program in Computer Science, the module is a compulsory elective module in the Open Track in the subject area Computer Engineering and High Performa nce Computing and the Supplement, which must be selected in accordance with Annex 2 to the Examination Regulations, and in the Distributed Systems Eng ineering Track, which must be selected in accordance with Annex 3 to the Examination Regulations. The module can only be selected once in the Master's degree program Computer Scienc e. The module cannot be selected in the Master's degree program in Computer Science if this module or a module with a similar content from a degree program in which the admission requirements according to § 3 of the study regulations have been met has already been completed e. The module

	creates the prerequisites for the modules listed under prerequisites for participation.
Requirements for earning credit points	The credit points are earned if the module examination is passed. The module examination consists of a written examination lasting 60 minutes. The examination language is English.
Credit points and grades	6 credit points can be earned through the module. The module grade corresponds to the grade of the examination.
Module frequency	The module is offered every summer semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.