

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

Module name	Hardware Modeling and Simulation
Module number	INF-25-Ma-FTI-HMS
Responsible lecturer	Prof. Dr. Diana Göhringer diana.goehringer@tu-dresden.de
Qualification objectives	Students have qualified knowledge in the subject areas of simulation, evaluation and verification of digital systems, such as field programmable gate arrays (FPGAs), and in the subject area of modeling digital systems using SystemC. They also have practical skills in programming digital systems using the hardware description language VHDL and experience from example projects.
Content	The module covers the design, simulation, evaluation and verification of digital systems as well as programming using hardware description languages, for example VHDL and the modeling language SystemC.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and the self-study. The language of instruction for the lectures and exercises is English.
Prerequisites for participation	In the Diploma degree program in Computer Science, the Bachelor's degree program in Computer Science and the Bachelor's degree program in Applied Computer Science, the competencies to be acquired in the modules INF-25-Ba-GTI Fundamentals of Computer Engineering and INF-25-Ba-Prg Programmierung und RoboLab are required. In the Master's degree program in Computer Science, programming skills in C/C++ and knowledge of Computer Engineering at Bachelor's level are required.
Applicability	The module is a compulsory elective module in the subject area Computer Engineering and High Performance Computing in the Diploma 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 Informatics, 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 Bachelor's degree course in Applied Computer Science, the module is a compulsory elective module in the specialization in Media Informatics and in the specialization in Medical Informatics, which must be selected in accordance with the annex 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 of Computer Engineering and High Performance Computing and its supplement, which must be selected in accordance with Annex 2 to the Examination Regulations, and in the Distributed Systems Engineering Track, which must be selected in accordance with Annex 3 to the Examination Regulations. The module cannot be selected in the Master's degree program in Computer Science if this module or a module with essentially the same content from a degree program in which the

	admission requirements according to Section 3 of the Examination Regulations have already been fulfilled. 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 winter semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.