

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

Module name	Foundations of Cyber Physical Systems
Module number	INF-25-Ma-FCP-CPS
Responsible lecturer	Prof. Dr. Christoph Sommer christoph.sommer@tu-dresden.de
Qualification objectives	Students know the basics of designing the specification, implementing and simulating the performance evaluation of networked Cyber Physical Systems. They are able to model, design and implement simple Cyber Physical Systems and to design, carry out and evaluate studies on their use.
Content	The module covers cyber physical systems and methods for their specification, implementation and simulative performance evaluation as well as requirements and solutions for applications of cyber physical systems in various domains.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and self-study. The language of instruction for the lectures and exercises may be German or English and will be specified by the lecturer bz w. the lecturer at the beginning of each semester and announced in the usual manner.
Prerequisites for participation	In the Diploma degree program in Computer Science, the competencies to be acquired in the modules INF-25-Ba-Prg Programming and RoboLab, INF-25-Ba-RN Computer Networks, INF-25-Ba-SWT Software Technology, INF-25-Ba-DMF Data Management Foundations and INF-25-Ba-KI Artificial Intelligence are required. The Master's degree course Computer Science requires knowledge of object-oriented programming at Bachelor's level.
Applicability	The module is a compulsory elective module in the subject area of Cyber Physical Systems in the Diploma degree program in Computer Science in the main study dium, which must be selected in accordance with Annex 2 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 Cyber Physical Systems as well as the supplement, which must be selected in accordance with Annex 2 to the Examination Regulations. The module can only be selected once in the Master's degree program in Computer Science. 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 § 3 of the study regulations have been fulfilled, has already been completed. The module fulfills 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 non-public oral examination as an individual examination lasting 30 minutes. The examination language may be German or English and will be specified by the lecturer at the

	beginning of each semester and announced in the usual manner.
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 at .
Workload	The total workload is 180 hours.
Module duration	The module comprises one S emester.