

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

Module name	Operating-System Construction
Module number	INF-25-Ma-FSA-OSC
Responsible lecturer	Prof. Dr. Horst Schirmeier horst.schirmeier@tu-dresden.de
Qualification objectives	Students are able to design, develop and debug system software based directly on the hardware. They know the effects on non-functional, emergent properties, such as interrupt latencies, and can make design decisions that have a direct impact on the possible areas of application of the system.
Content	The module covers conceptual basics and central techniques for building an operating system as well as their practical application through the development of a simple PC operating system stems. The module also covers the structure and functionality of PC hardware, for example the protection concept of the x86-64 architecture, current PC bus systems and modern multiprocessor interrupt systems as well as the basics of operating systems such as interrupts, synchronization and scheduling.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 4 SWS and the self bststudium. The language of instruction for the lectures and exercises is English.
Prerequisites for participation	In the Diploma degree program in Computer Science and in the Bachelor's degree program in Computer Science, the competencies to be acquired in the modules INF-25-Ba-RN Computer Networks, INF-25-Ba-BS Operating Systems, INF-25-Ba-RA Computer Architecture and Hardware Laboratory, INF-25-Ba-SWT Software Technology, INF-25-Ba-DMF Data Management Foundations and INF-25-Ba-SWTP Software Technology Project are required. In the Bachelor's degree course in Applied Computer Science in the specialization Medical Computer Science, the competences to be acquired in the modules INF-25-Ba-RN Computer Networks, INF-25-Ba-BS Operating Systems, INF-25-Ba-SWT Software Technology, INF-25-Ba-PMZ-DBE Database Engineering and INF-25-Ba-SWTP Software Technology Project are required. In the Bachelor's degree program in Applied Computer Science with a specialization in Media Informatics, the competencies to be acquired in the modules INF-25-Ba-RN Computer Networks, INF-25-Ba-BS Operating Systems, INF-25-Ba-SWT Software Technology, INF-25-Ba-DMF Data Management Foundations and INF-25-Ba-SWTP Software Technology Project are required.
Applicability	The module is a compulsory elective module in the field of Systems Architecture in the Diploma degree course in Computer Science in the main study program, which is to be selected in accordance with Appendix 2 to the examination regulations. §gabe der Anlage 2 zur Prüfungsordnung zu wählen ist. In the Bachelor's degree program in Computer Science, the module is a compulsory elective module in the subject area n specialization, which must be selected in accordance with

	the appendix to the examination regulations. In the Bachelor's degree program in Applied Informatics, 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 Systems Architecture and the 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 can only be chosen 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 already been met has already been completed. 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 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 summer semester.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.