

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

Module name	Advanced Computer Networks
Module number	INF-25-Ma-FSA-RNA
Responsible lecturer	Prof. Dr. Matthias Wählich matthias.waehlich@tu-dresden.de
Qualification objectives	Students are familiar with practical aspects of computer networks and the technologies, concepts and protocols required for their operation, can analyze and plan networks and design their own and have advanced knowledge in the field of network and internet security.
Content	The module covers various computer network protocols of all layers of the TCP/IP protocol stack, the architecture of the Internet, routing protocols as well as the basics of network management, security, virtualized networks and networks for data centers or cloud infrastructures, current standards, their further development and practice-relevant developments from research.
Teaching and learning methods	The module comprises lectures of 2 SWS, exercises of 2 SWS and the selfbststudium. The teaching language of the lectures and exercises may be German or English and will be determined by the lecturer at the beginning of the semester and announced in the usual manner.
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 competences 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.
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. ßgabe 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. The module is a compulsory elective module in the Bachelor's degree course in Applied Informatics in the specialization in Media 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 d 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 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 substantially the same content has already been completed from a degree program in which the admission requirements according to Section 3 of the study regulations have been fulfilled . 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 written examination lasting 90 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.
Workload	The total workload is 180 hours.
Module duration	The module comprises one semester.