

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

Module name	Discrete structures
Module number	INF-25-Ba-Ma2
Responsible lecturer	Prof. Dr. Ulrike Baumann ulrike.baumann@tu-dresden.de
Qualification objectives	Students know basic mathematical terms, notation and forms of argumentation using the example of set and formula language and elements of discrete mathematics. They know the basic concepts of the aforementioned theoretical areas and can handle them confidently in terms of mathematical working methods. In particular, they can formulate and prove facts from the aforementioned areas of knowledge in a mathematically correct manner. Students are able to bring the theoretical elements they have worked on into a meaningful context with applied questions and solve problems.
Content	The module covers mathematics as a theoretical language and tool of computer science as well as elements of discrete mathematics. The content includes sets, relations, in particular equivalence and ordering relations, mappings, Boolean functions and propositional logic, natural numbers, proofs using complete induction and modular arithmetic, fundamentals of graph theory and the applications of these concepts in computer science.
Teaching and learning methods	The module comprises lectures of 3 SWS, exercises of 2 SWS and the self-study. The language of instruction for the lectures and exercises is German.
Prerequisites for participation	The competences to be acquired in the module INF-25-Ba-Ma1 Linear Algebra and Analysis are a prerequisite for the Diploma degree course in Computer Science, the Bachelor's degree course in Computer Science and the Bachelor's degree course in Applied Computer Science.
Applicability	The module is a compulsory module in the Diploma degree program in Computer Science in the foundation course. The module is a compulsory module in the Bachelor's degree course in Computer Science and in the Bachelor's degree course in Applied Computer Science. The module creates the prerequisites for the modules that name it among the 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 is German.
Credit points and grades	7 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 210 hours.

Module duration	The module comprises one semester.
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