

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

Module name	Mathematics basics
Module number	INF-25-Ma-NGR-MAT
Responsible lecturer	Prof. Dr. Manuel Bodirsky manuel.bodirsky@tu-dresden.de
Qualification objectives	Students know the fundamentals, the basic principles and the technical language of the application area of mathematics. They have knowledge in the field of linear algebra, can confidently apply elementary proof techniques, use mathematical terminology appropriately and have the basic skills for mathematical abstraction.
Content	The module covers naive set theory, in particular sets, relations and mappings, the basics of logic, the fundamental algebraic structures, in particular groups, solids, vector spaces, rings and structure-preserving mappings and linear algebra, in particular linear mappings, systems of equations, matrices, determinants and eigenvalues.
Teaching and learning methods	The module comprises lectures of 4 SWS, exercises of 2 SWS and self-study. The language of instruction for the lectures and exercises is Deutsch.
Prerequisites for participation	In the Diploma degree program in Computer Science, the competences to be acquired in the module INF-25-Ba-Ma1 Linear Algebra and Analysis are a prerequisite. In the Master's degree program in Computer Science, competencies in linear algebra at Bachelor's level are required.
Applicability	The module is a compulsory module of the non-informatics supplement Mathematics in the main course of the Diplom degree program in Computer Science. In the Master's degree program in Computer Science, the module is a compulsory elective module of the supplement in the open track, which must be selected in accordance with Annex 2 to the examination regulations. In the Master's degree program in Computer Science, the module can only be selected in combination with the module INF-25-Ma-NVE-MAT Mathematics specialization. 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 with 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 written examination lasting 90 minutes. The examination language is German.
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.