

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

Module name	Algorithms Lab
Module number	INF-25-Ma-FTK-ALAB
Responsible lecturer	Prof. Dr. László Kozma laszlo.kozma@tu-dresden.de
Qualification objectives	Students are able to implement and optimize advanced algorithms and evaluate experimental results. They master the theoretical and practical tools to analyze the duration of their implementation and to improve it with regard to the requirements of the application.
contents	Contents of the module are the faithful implementation of selected algorithms of theoretical computer science and the analysis and optimization of program code. This includes formal specifications, data structures and the complexity of their operations as well as methods for the practical implementation of the theoretical concepts in the context of the chosen programming language.
Forms of teaching and learning	The module includes internships in the scope of 4 SWS and self-study. The teaching language of the internships can be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual way.
Requirements for participation	The competences to be acquired in the modules INF-25-Ba-Prg Programming and RoboLab, INF-25-Ba-AuD Algorithms and Data Structures, INF-25-Ba-AuB Automata and Predictability Theory and INF-25-Ba-LuK Logic and Complexity are required in the Computer Science Diploma Programme. In the Master's programme Computer Science, knowledge of the basics of programming, algorithm design, formal languages and theoretical computer science at Bachelor's level is required.
usability	The module is a compulsory elective module in the field of Theoretical Computer Science and Symbolic Artificial Intelligence in the master's degree programme Computer Science, which must be chosen in accordance with Annex 2 to the Examination Regulations. The module in the Master's programme Computer Science is a compulsory elective module in the Open Track in the subject area Theoretical Computer Science and Symbolic Artificial Intelligence as well as the supplement, which is to be selected in accordance with Annex 2 to the examination regulations. The module can only be selected once in the Master's programme Computer Science. The module cannot be selected in the Master's program Computer Science if this or a substantially identical module from a degree program with which the admission requirements according to § 3 of the study regulations have been fulfilled, has already been completed. The module creates the prerequisites for the modules, which it names under prerequisites for participation.

Conditions for awarding credits	The credit points are earned when the module examination has been passed. The module exam consists of a complex performance of 100 hours. The language of the examination can be German or English and will be specified by the lecturer at the beginning of each semester and announced in the usual manner.
Credits and grades	6 credit points can be earned through the module. The module grade corresponds to the grade of the examination performance.
Frequency of the module	The module is offered every summer semester.
workload	The total workload is 180 hours.
Duration of the module	The module consists of 1 semester.