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

Module name	**Advanced Algorithms Lab**
Module number	INF-25-Ma-FTK-AALAB
Senior Lecturer	Prof. Dr. László Kozma laszlo.kozma
Qualification objectives	Students are able to implement advanced algorithms and develop new algorithms or heuristics based on general problem-solving techniques. They can evaluate their ability to solve difficult or under-specified problems, optimise them and evaluate experimental results. They master the theoretical and practical tools to analyse the duration of their implementation and to improve them with regard to the requirements of the application.
Contents	The content of the module is the implementation of advanced algorithms based on specifications and the design and refinement of specifications based on generic objectives. This includes the design of algorithms, the targeted use of heuristic search strategies, the analysis and optimisation of code, as well as the secure mastery of data structures, the complexity of their operations and their practical application.
Forms of teaching and learning	The module includes 4 SWS traineeships and self-study. The teaching language of the traineeships can be German or English and is specifically determined by the teacher at the beginning of each semester and announced in the usual way.
Eligibility for participation	The computer science diploma course requires the skills 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 Automatic and Predictability Theory and INF-25-Ba-LuK logic and complexity. The Master's in Computer Science requires knowledge of the basics of programming, algorithm design, formal languages and Bachelor's level theoretical computing.
Usability	The module is a compulsory optional module in the field of Theoretical Computer Science and Symbolic Artificial Intelligence in the computer science diploma course, which must be chosen in accordance with Annex 2 to the test rules. The module is a compulsory open-track voting module in the field of Theoretical Computer Science and Symbolic Artificial Intelligence in the Master's course in Computer Science, as well as the supplement to be selected in accordance with Annex 2 to the test regulations. The module can only be selected once in the Master's in Computer Science. The module cannot be chosen in the Computer Science Masters Course if that module, or a module with substantially the same content, from a course of study which met the entry requirements under Para-

	graph 3 of the Studienordnung has already been completed. The module provides the pre-requisites for the modules it designates under the pre-requisites for participation.
Conditions for the award of credits	Credits are awarded when the module test is passed. The module test consists of a complex power of 90 hours. The language of the exam can be German or English and will be specifically determined by the teacher at the beginning of each semester and announced in the usual way.
Credits and marks	The module allows 6 credit points to be obtained. The module score corresponds to the test performance score.
Frequency of the module	The module is offered every winter semester.
Workload	The total workload is 180 hours.
Duration of the module	The module covers 1 semester.