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

Module name	**Introduction to Existential Rules**
Module number	INF-25-Ma-FTK-EXR
Responsible lecturer	Prof. Dr. Sebastian Rudolph sebastian.rudolph@tu-dresden.de
Qualification objectives	Students have in-depth knowledge of the scientific methods of the sub-area of Database Theory and Theoretical Informatics. They are familiar with the central concepts of the subject area of existential rules, can reproduce its core statements mathematically correctly, formally justify them and apply them. They can independently derive and prove statements based on this on the algorithmic, semantic, calculation-theoretical or logical foundations of the sub-area.
contents	Contents of the module are formal foundations of ontology-based query response using existential rules, results on model theory, decision-making, algorithms – in particular forward and backward linking – and the complexity of associated calculation problems, as well as relevant decidable subclasses of existential rule languages.
Forms of teaching and learning	The module includes lectures in the scope of 2 SWS as well as self-study. The teaching language of the lectures 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-AuB Automata- und Predictability Theory, INF-25-Ba-LuK Logic and Complexity, INF-25-Ba-Ma1 Linear Algebra and Analysis, INF-25-Ba-Ma2 Discrete Structures, INF-25-Ba-Ma3 Algebra, INF-25-Ba-DMF Data Management Foundations and INF-25-Ba-AI Artificial Intelligence are required in the Computer Science Diploma Programme. The Master's programme in Computer Science requires knowledge of the basics of formal languages, theoretical computer science and the logic of statements and predicates, as well as knowledge of mathematics at the bachelor's level.

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 examination consists of a non-public oral examination performance as an individual examination of 15 minutes duration. 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	3 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 90 hours.
Duration of the module	The module consists of 1 semester.