

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

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| Module name | Building and Maintaining Ontologies in the Description Logic EL |
| Module number | INF-25-Ma-FTK-BMOEL |
| Responsible lecturer | Dr. Francesco Kriegel francesco.kriegel@tu-dresden.de |
| Qualification objectives | Students have in-depth knowledge of the description logic EL and some extensions. They know the central concepts and scientific methods, can reproduce their core statements mathematically correctly, formally substantiate and apply them and have the ability to independently derive and prove statements based on them to the algorithmic, semantic or logical foundations. |
| contents | Contents of the module are syntax and semantics of the different means of expression in the description logic EL, complexity of decision problems regarding logical conclusion and corresponding algorithms. Further contents of the module are extensions of EL with regard to the limits of polynomial time and decision-making, logical-algebraic methods for building and maintaining EL knowledge bases, such as learning concept descriptions or knowledge bases from examples, explaining conclusions by means of evidence or counterexamples and repairing incorrect conclusions. |
| Forms of teaching and learning | The module includes lectures in the scope of 2 SWS and exercises in the scope of 2 SWS as well as self-study. The teaching language of the lectures and the exercises 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 as well as INF-25-Ba-Ma2 Discrete Structures 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. |

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| 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 met, has already been completed. |
| 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 20 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 | 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. |