

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

Module name	Large Language Models
Module number	INF-25-Ma-FTK-LLM
Responsible lecturer	Prof. Dr. Simon Razniewski simon.razniewski@tu-dresden.de
Qualification goals	Students acquire fundamental knowledge of the construction, training, and application of large language models. They master methods for developing, analyzing, and evaluating such models and understand the theoretical, empirical, and ethical foundations. They are able to apply large language models effectively in various contexts and critically reflect on their application.
Contents	The module covers the architecture, training methods and applications of large language models, including transformer models, pretraining and fine-tuning, prompting techniques, evaluation methods, safety and ethical issues, as well as the use and analysis of large language models in various application areas of natural language processing.
Teaching and learning methods	The module comprises lectures totaling 2 hours per week, tutorials totaling 2 hours per week, and self-study. The language of instruction for both lectures and tutorials is English.
Requirements for participation	The diploma program in Computer Science requires the competencies to be acquired in the modules INF-25-Ba-AuD Algorithms and Data Structures, INF-25-Ba-Ma1 Linear Algebra and Analysis, INF-25-Ba-Ma4 Probability Theory and Statistics, INF-25-Ba-DMF Data Management Foundations, and INF-25-Ba-KI Artificial Intelligence.
Applicability	In the Diploma program in Computer Science, this module is an elective module in the field of Visual Computing and Machine Learning, which must be selected according to Appendix 2 of the examination regulations. In the Master's program in Computer Science, this module is an elective module in the Open Track within the field of Visual Computing and Machine Learning and its supplementary component, which must be selected according to Appendix 2 of the examination regulations. This module can only be selected once in the Master's program in Computer Science. This module cannot be selected in the Master's program in Computer Science if this module, or a substantially equivalent module from a degree program that fulfills the admission requirements according to § 3 of the study regulations, has already been completed. This module fulfills the prerequisites for the modules listed under "Prerequisites for Participation."
Requirements for earning credit points	Credit points are awarded upon successful completion of the module examination. The module examination consists of a 15-minute, private oral examination. The examination language may be German or English and is determined by the lecturer at the beginning of each semester and announced in the usual manner.

Credit points and grades	Six credit points can be earned through this module. The module grade corresponds to the grade for the examination.
Frequency of the module	The module is offered every winter semester.
Workload	The total workload is 180 hours.
Module duration	The module lasts one semester.